

SARANATHAN COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)

Venkateswara Nagar, Panjappur, Tiruchirappalli - 620 012, Tamil Nadu.



INDEX

CRITERION: 5.3.2

Institution facilitates students' representation and engagement in various administrative, co-curricular and extracurricular activities following duly established processes and norms (student council, students' representation on various bodies)

2022 - 2023

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Class Committee Meeting



SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPPALLI - 620 012.

Date: 13.3.2023

CIRCULAR

The first Class Committee meeting for the III Year / VI Semester students will be held on **14.3.2023 at 12.30 p.m** in IT seminar hall

Staff Members:

Ms. N. Bhavani
Ms. J. Sangeethapriya
Mr. R. Rengaraj
Mr. P. Anand
Ms. M. Padmapriya
Ms. A. Sheelavathi

Student Representatives:


NITHIYASRI H
ALMAS BEGUM. M
AVINASH. P
IMRAN AHAMED. A B
VENKATRAMAN. S S

Agenda:

- Performance in University exams and IA tests.
- Issues regarding Subjects
- Attendance, Discipline, health and hygiene
- Co Curricular activities

All are asked to attend the meeting without fail.


CLASS COMMITTEE CHAIR PERSON


HOD, Dept of IT



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SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPALLI - 620 012.

Date: 15.03.2023

Minutes of the I Class Committee Meeting for III Year held on 14.3.2023

Time : 2.30 p.m

The following points were discussed in the meeting:

Performance in University exams and IA tests.

- HoD/IT motivated the students to work hard and score better grades in the coming semester exams.
- Students were asked to attend classes sincerely.
- Students were asked to prepare well for the IA tests.
- Students were also asked to submit assignments in all the subjects.

Issues regarding subjects:

1. They felt comfortable and had no issues in other subjects.

General Issues

1. The students were advised to have 90% attendance . They were asked to be regular, sincere & more attentive in all the classes.
2. The students were asked to take the IA tests seriously and perform well.
3. The students were motivated to participate in technical events.

The meeting came to an end at 3.30p.m

Staff members who attended the meeting :

S.No	Name of the Faculty	Signature
1	Ms. N. Bhavani	
2	Ms. J. Sangeethapriya	
3	Mr. R. Rengaraj	
4	Mr. P. Anand	
5	Ms. M. Padmapriya	
6	Ms. A. Sheelavathi	

**SARANATHAN COLLEGE OF ENGINEERING****DEPARTMENT OF INFORMATION TECHNOLOGY****TIRUCHIRAPALLI - 620 012.****Date: 15.03.2023****Student Representatives:**

S.No	Name of the Student	Signature
1	NITHIYASRI H	Nithya - si
2	ALMAS BEGUM. M	Almas Begum
3	AVINASH. P	P. Avinash
4	IMRAN AHAMED. A B	Imran Ahamed A.B
5	VENKATRAMAN. S S	S.S. Venkatesh

Class Committee Chairperson

Ms. Satbiya/ Asst Professor / IT

HOD, Dept of IT

Dr. R. Thillaikarasi

Copy to: The Principal

The Dept File

Action Taken

The concerned staff members were asked to post the materials, question bank for the subjects.

H.O.D. (IT)
Saranathan College of Engg.,
Trichirapalli - 620 012.



SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPALLI - 620 012.

Date: 17.4.2023

CIRCULAR

The Second Class Committee meeting for the III Year / VI Semester students will be held on 18.4.2023 at 12.30 p.m in IT seminar hall

Staff Members:

Ms. N. Bhavani
Ms. J. Sangeethapriya
Mr. R. Rengaraj
Mr. P. Anand
Ms. M. Padmapriya
Ms. A. Sheelavathi

Student Representatives:

NITHIYASRI H
ALMAS BEGUM. M
AVINASH. P
IMRAN AHAMED. A B
VENKATRAMAN. S S

Agenda:

- Performance in University exams and IA tests.
- Issues regarding Subjects
- Attendance, Discipline, health and hygiene
- Co Curricular activities

All are asked to attend the meeting without fail.


CLASS COMMITTEE CHAIR PERSON


HOD, Dept of IT



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SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPALLI - 620 012.

Date: 19. 4.2023

Minutes of the II Class Committee Meeting for III Year held on 18.4.2023

Time : 2.30 p.m

The following points were discussed in the meeting:

Performance in University exams and IA tests.

- HoD/IT motivated the students to work hard and score better grades in the coming semester exams.
- Students were asked to attend classes sincerely.
- Students were asked to prepare well for the IA tests.
- Students were also asked to prepare well in all the subjects.

Issues regarding subjects:

1. They felt comfortable and had no issues in other subjects.
2. Almost 80% of 4 units had been covered in all the subjects

General Issues

1. The students were advised to have 90% attendance. They were asked to be regular, sincere & more attentive in all the classes.
2. The students were asked to take the IA tests seriously perform well.
3. The students were motivated to participate in technical events and also in extracurricular activities.

The meeting came to an end at 3.30p.m

Staff members who attended the meeting :

S.No	Name of the Faculty	Signature
1	Ms. N. Bhavani	
2	Ms. J. Sangeethapriya	
3	Mr. R. Rengaraj	
4	Mr. P. Anand	
5	Ms. M. Padmapriya	
6	Ms. A. Sheelavathi	



SARANATHAN COLLEGE OF ENGINEERING

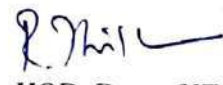
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPALLI - 620 012.

Date: 19.4.2023

Student Representatives:

S.No	Name of the Student	Signature
1	NITHIYASRI H	Nithya si
2	ALMAS BEGUM. M	Almas Begum
3	AVINASH. P	P. Avinash
4	IMRAN AHAMED. A B	Imran A B
5	VENKATRAMAN. S S	S.S. Venkatarman


Class Committee Chairperson
Ms. Sathya Asst. Professor / IT


HOD, Dept of IT
Dr. R. Thillaikarasi

Copy to: The Principal
The Dept File

Action Taken

The concerned staff members are asked to post the materials, question bank for the subjects.


H.O.D. (IT)
Saranathan College of Engg.,
Trichirapalli - 620 012.

Technical Association Activities



SARANATHAN COLLEGE OF ENGINEERING

(Affiliated to Anna University-Chennai, Approved by AICTE-New Delhi)

Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012



DEPARTMENT OF INFORMATION TECHNOLOGY DO-IT ASSOCIATION



DATE : 04.11.2022

CIRCULAR

GENERAL APTITUDE QUIZ

Department of Information Technology is conducting **General Aptitude Quiz** celebrating Shakuntala Devi's 93rd Birth Anniversary on 04th November 2022 for III Year IT students. For Further clarifications, contact the staff co-ordinator and student co-ordinators. All the best to all the participants!!!

Venue: Third year IT classroom(RV301)

Staff Coordinator: Ms. G.Sathiya, AP/IT

Student Coordinators: S. Manoj Deepak, K. Naraesh Archun, M. Rajamurugan

[Ms. G.Sathiya]

Staff Coordinator

[Dr.R.Thillaikarasi]

Head of the Department



SARANATHAN COLLEGE OF ENGINEERING

(Affiliated to Anna University-Chennai, Approved by AICTE-New Delhi)
Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012



Date: 04/10/2022

SCE/IT/2022

Headline: GENERAL APTITUDE QUIZ - Reg.

In the academic year 2022-23, on the occasion of 93rd birth anniversary of Shakuntala Devi on November 4, 2022, the DO-IT Association of Information Technology Department conducted a general aptitude quiz for the students of third year IT students. The staff coordinator Ms. G.Sathiya helped in organizing the event and the student coordinators Manoj Deepak S, Naraesh Archun Kand Rajamurugan M of final year IT prepared the quiz questions with enthusiasm for the students. The quiz started by 3:15pm and happened till 4:45pm in the third year classroom (RV301). All the third year students were participated. They were splitted into 6 teams, 8 members per teams and were named as Team A, Team B, Team C, Team D, Team E and Team F. Totally 45 questions on various aptitude topics were asked and the teams answered them with enthusiasm. Each team have given their fullest effort and support for making this event a grand success. After the completion of the quiz programme, the winning team was announced. Team A was the winner of the General Aptitude Quiz event. The quiz session was not only focused on answering the question but also to gain knowledge regarding various aptitude topics. The quiz session was highly beneficial for the students.


Coordinator

Ms. G.Sathiya, AP/IT


HoD-IT

Dr. R. Thillaikarasi



GPS Map Camera

Panjappur, Tamil Nadu, India

QM42+GPJ, Panjappur, Tamil Nadu 620012, India

Lat 10.756494°

Long 78.65172°

04/11/22 03:25 PM GMT +05:30



Google

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GPS Map Camera

Panjappur, Tamil Nadu, India

QM42+GPJ, Panjappur, Tamil Nadu 620012, India

Lat 10.756423°

Long 78.651647°

04/11/22 03:25 PM GMT +05:30



Google

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DEPARTMENT OF INFORMATION TECHNOLOGY

DO-IT ASSOCIATION



DATE : 02.11.2022

CIRCULAR

INTRA DEPARTMENT C CODING CONTEST

Department of Information Technology is conducting **C Coding Contest** on **14th November, 2022** for **II Year & III Year IT** students. Those who are willing to participate are informed to register themselves in the google form link provided below. For Further clarifications, contact the staff co-ordinators and student co-ordinators. All the best to all the participants!!!

Venue: Main Computer Lab

Registration Link: <https://forms.gle/bXjqrfQ885NM9kD6>

Staff Coordinator : Ms. J. Sangeethapriya


Student President : R. Aarthikha

Student Office Bearers : A. Arsah, K. Kiruthika, A. Ratnakumar

Student Coordinators : S. Keerthana, M. Nisha

Winners will be awarded with cash awards!!!


[Ms. J. Sangeethapriya]
Staff Coordinator


[Dr. R. Thillaikarasi]
Head of the Department



SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPPALLI - 620 012

SCE/IT/2022 / ODD/DO-IT EVENTS

Date: 14/11/2022

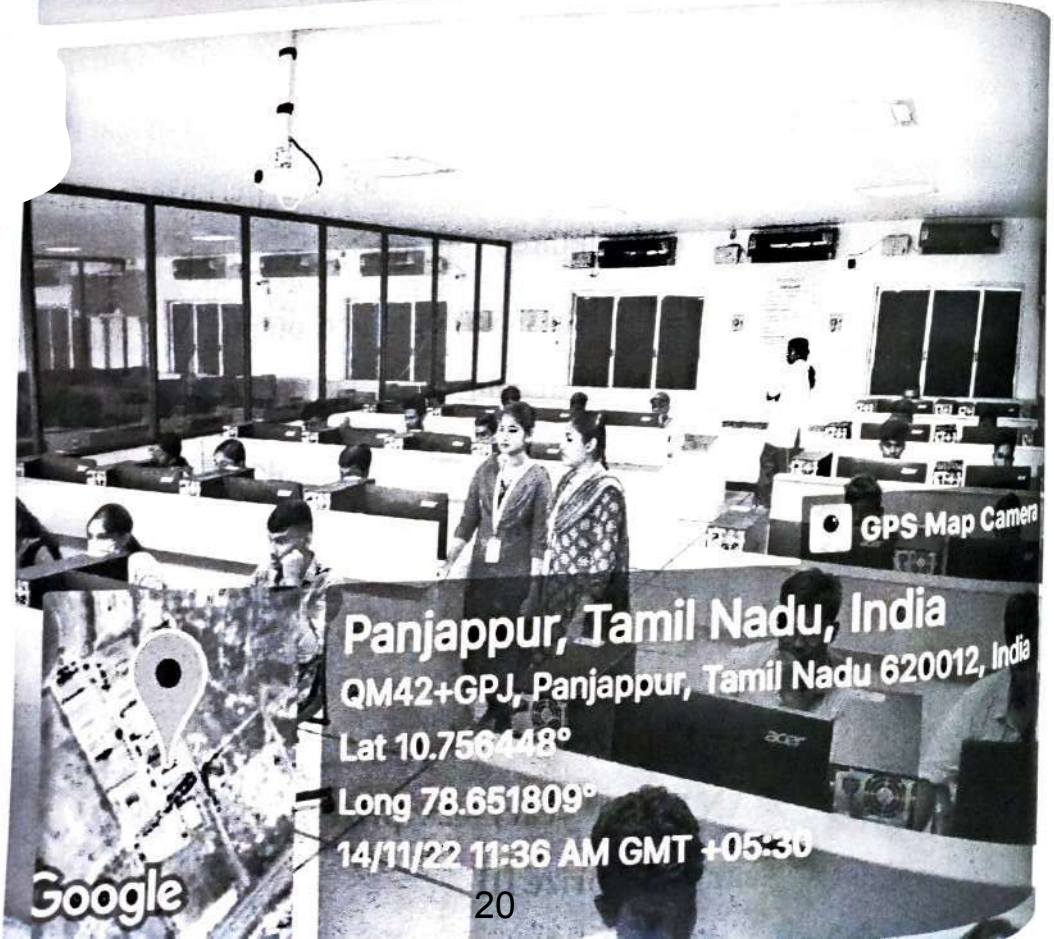
Headline: C Programming Contest- Reg.

In the academic year 2022-23, on November 14, the DO-IT Association of Information Technology Department conducted a **C Coding Contest** for the **Second and Third year students of IT**. The contest consisted of two rounds, the first round was of 25 multiple choice questions, which consisted of the coding snippets for 25 minutes in that each question was for one minute and the round was of 20000 points in total, which commenced at 11: 30 pm and second round consisted of three coding question of two levels – one beginner level and two of intermediate level, which commenced at 2:00 pm and was for about 50 minutes, the round was of 50 points in total. The first round was conducted in **Quizizz** platform and second round was conducted in **Hackerrank** platform. For the first round in total 115 students participated from which top 30 performers were selected for the second round, from which three students backed the prizes based on their points allotted for passing the test case ,logic and output. We had two winners from Second year IT and one from Third year IT. The participants will awarded with the participation certificates and the winners would be awarded cash prize by the administration.

The winners are:

1. **VIBILAN S (IInd year) – 1st prize**
2. **RAMA MARIYAPPAN K (IInd year) – 2nd prize**
3. **RAHUL B S (IIInd year) – 3rd prize III**

C Coding Contest:



First round:

Overview Questions

Email all parents Show Time Taken

Scroll right

Participant Names	Score	Q1 38%	Q2 20%	Q3 84%	Q4 40%	Q5 5%
1 244031 S	9320 (52%)	✗	✓	✓	✗	✓
2 244044 S	9300 (48%)	✓	✗	✓	✓	✗
3 244051 M	8810 (48%)	✓	✓	✓	✓	✗
4 HARISH C	8370 (48%)	✓	✓	✓	✓	✗
5 Selline E	8000 (44%)	✓	✗	✓	✗	✓
6 244002 J	7880 (40%)	✗	✗	✓	✗	✓
7 Viblon S	7820 (40%)	✗	✗	✓	✗	✗
8 vishwa 2003	7780 (44%)	✓	✗	✓	✓	✓

Second round:

HackerRank PREPARE NEW CERTIFY COMPETE

Search

All Contests > GCoding Contest 16624625

Leaderboard

All Friends Filter by

Type username to compare Compare

Rank	User	Score	Time	Country
1	244044 S	36/00	1:14:46	

Coordinator

Ms. J Sangeethapriya, AP/IT

R. Thilak
HoD-IT
Dr.R.Thilak



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Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012



17

S. Navaneethan
Kumar.

234021

DEPARTMENT OF INFORMATION TECHNOLOGY

DO-IT ASSOCIATION

DATE : 14.11.2022

INTRA DEPARTMENT C CODING CONTEST

FEEDBACK

ROUND 1:

4. How would you rate the difficulty level of the questions?



Basic



Intermediate



Advanced

5. How do you rate your experience in Quizizz platform?



Fair



Good



Excellent

6. Suggestions:

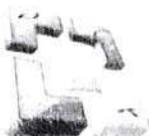
SAH The Competition was difficult, which we are not familiar. Instead of MCQ in first round, you have kept like coding. Even, ~~no~~ with assumption everyone can crack first round without the knowledge.



SARANATHAN COLLEGE OF ENGINEERING

(NBA ACCREDITED INSTITUTION)
PANJAPPUR, VENKATESWARA NAGAR, TRICHY - 620 012

DEPARTMENT OF INFORMATION TECHNOLOGY



CIRCULAR

The Do-IT Association of Department of Information Technology has planned to conduct a Network Quiz Contest on the topic “Basics of Network” for III- year students of Information Technology. All are invited to participate on 15.09.2022 during 3:30pm to 4:30pm.

Ms. SangeethaPriya

Programme Coordinator

Dr. R. Thillaikkarasi

HOD/IT



SARANATHAN COLLEGE OF ENGINEERING

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Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012

DEPARTMENT OF INFORMATION TECHNOLOGY

DO-IT ASSOCIATION



DATE : 15.09.2022

Networks Quiz Contest

Sub: Report on Intra-Department Networks quiz Contest – 15.09.2022 - Odd semester - 2022-2023

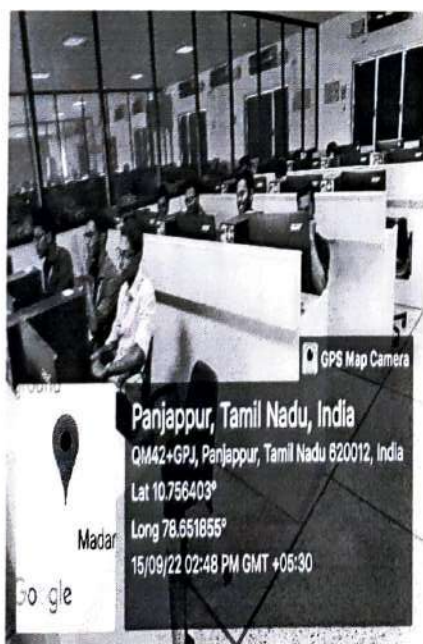
Department of Information Technology has organized intra department Networks Quiz contest. The III year students were informed about the contest during the first week of September. Contestants were asked to attend the Quiz using Google form Platform. The selection is based upon their Marks.

The circular was put up in the notice board and shared through Class - Whatsapp Group. The coordinator of this event is Ms.J.Sangeethapriya AP/IT .The objective of this event is to improving the skills in core subjects.


Quiz link : <https://forms.gle/9tKXPVKt2WGLiGUo6>


The prize winners are

BATCH NUMBER	NAME	YEAR	PRIZE
234033	ROHEETH KUMAR R J	III YEAR	I PRIZE
234007	CHIBI NARAYANA B	III YEAR	II PRIZE
234015	LETITIA. A	III YEAR	III PRIZE






Ms. J. Sangeethapriya
Staff Coordinator


Dr. R. Thillaikarasi
HoD/IT



SARANATHAN COLLEGE OF ENGINEERING

(NBA ACCREDITED INSTITUTION)

PANJAPPUR, VENKATESWARA NAGAR, TRICHY - 620 012

DEPARTMENT OF INFORMATION TECHNOLOGY



CIRCULAR

The Do-IT Association of Department of Information Technology has planned to conduct a Quiz on “**Basic Concepts of OOPs**” under the theme “**Just Do IT**”, for the II year students of Information Technology. All are invited to participate in the Quiz.

Date : 15.09.2022

Time : 1:25 p.m to 2.15 p.m.

Venue : Lab 5 and Lab 6

Ms. Muthukarupae

Programme Coordinators

Dr.R. Thillaikkarasi

HOD/IT



SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
TIRUCHIRAPALLI - 620 012.

Date: 15/09/2022

SCE/IT/2022

Headline: GENERAL QUIZ ON OOPs – JUST DO IT- Reg.

In the academic year 2022-23, On the occasion of Engineer's day on September 15, 2022, the DO-IT Association of Information Technology Department conducted a quiz on OOPs under the theme "JUST DO IT" for the ~~students~~ of second year IT students. The staff of IT department Ms. Muthukkarupae created a Google Form and have made questions ready with enthusiasm for the students. The quiz started by 1:25pm till 2:15pm in the lab 5 and lab 6. Various kinds of questions from different topics of OOPs were asked and the participants answered them with enthusiasm since they learnt new information in every question that was asked. The quiz session was not only focused on answering the question but also to gain knowledge regarding various topics like creating, designing, what and how OOPs concept is used. The quiz session was highly beneficial for the students to gain knowledge.

Coordinators

Ms. Muthukkarupae AP/IT

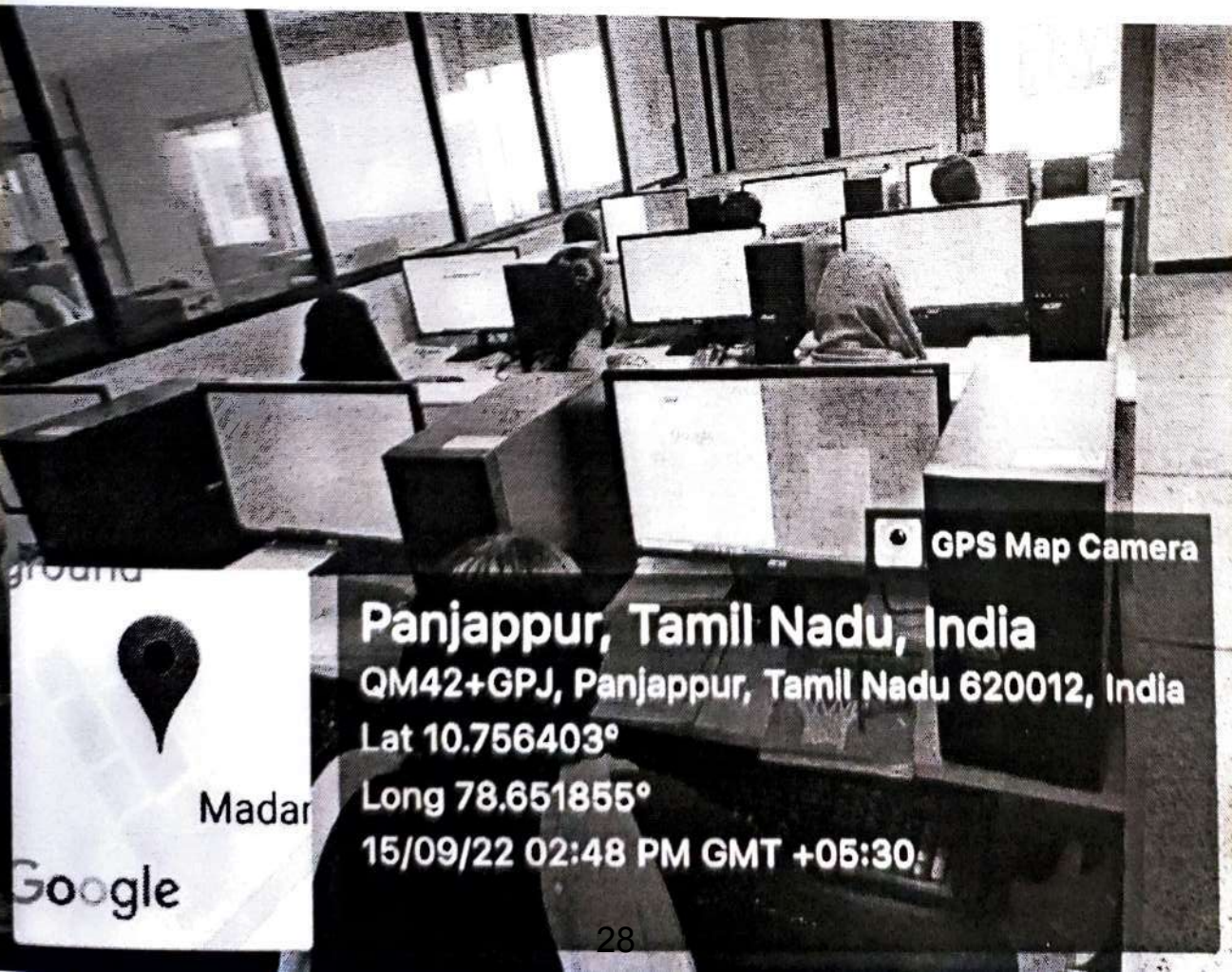
HoD-IT

Dr. R. Thillaikkarasi

Student Coordinators

Ratnakumar A – 224051

Abishek A S -224004





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Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012



DEPARTMENT OF INFORMATION TECHNOLOGY

DO-IT ASSOCIATION

DATE: 17.11.2022

INTRA DEPARTMENT PAPER PRESENTATION CONTEST

The Department of Information Technology conducted Paper Presentation contest on 17th November 2022 at IT Seminar Hall for II, III & IV year students.

The prize winners are:

I Prize : Roheeth Kumar J, Sivanesh S – III IT

II Prize : Shamabanu, Shameena Banu S - III IT

III Prize: R Bharadwaj, Dilip R - II IT

Student Coordinators:

Aswini Devi B, S K Divyaa, Keerthana M – IV year IT

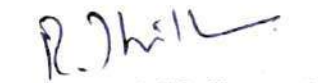
External Judge:

Dr.C.Vennila, Professor, Department of ECE

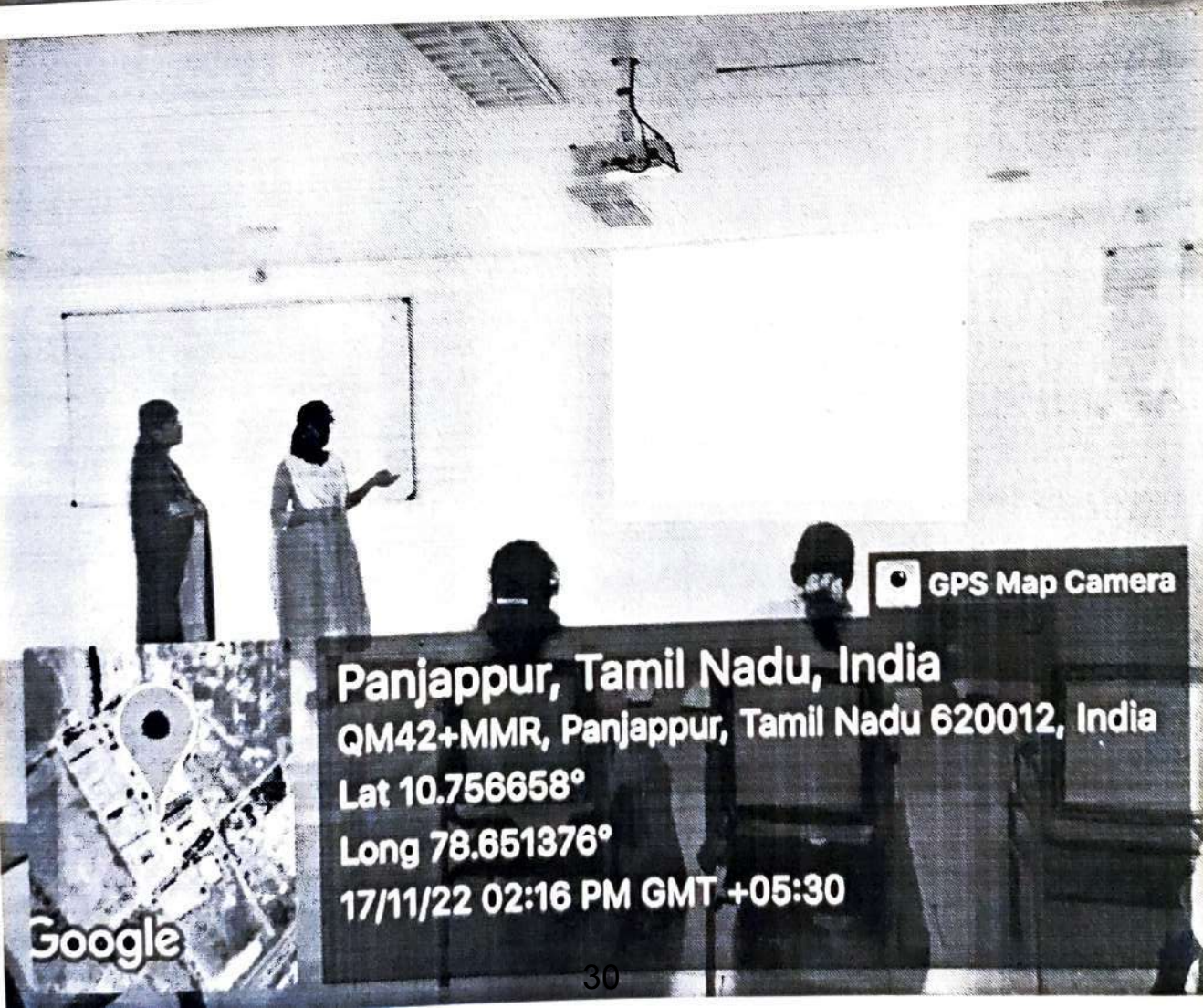
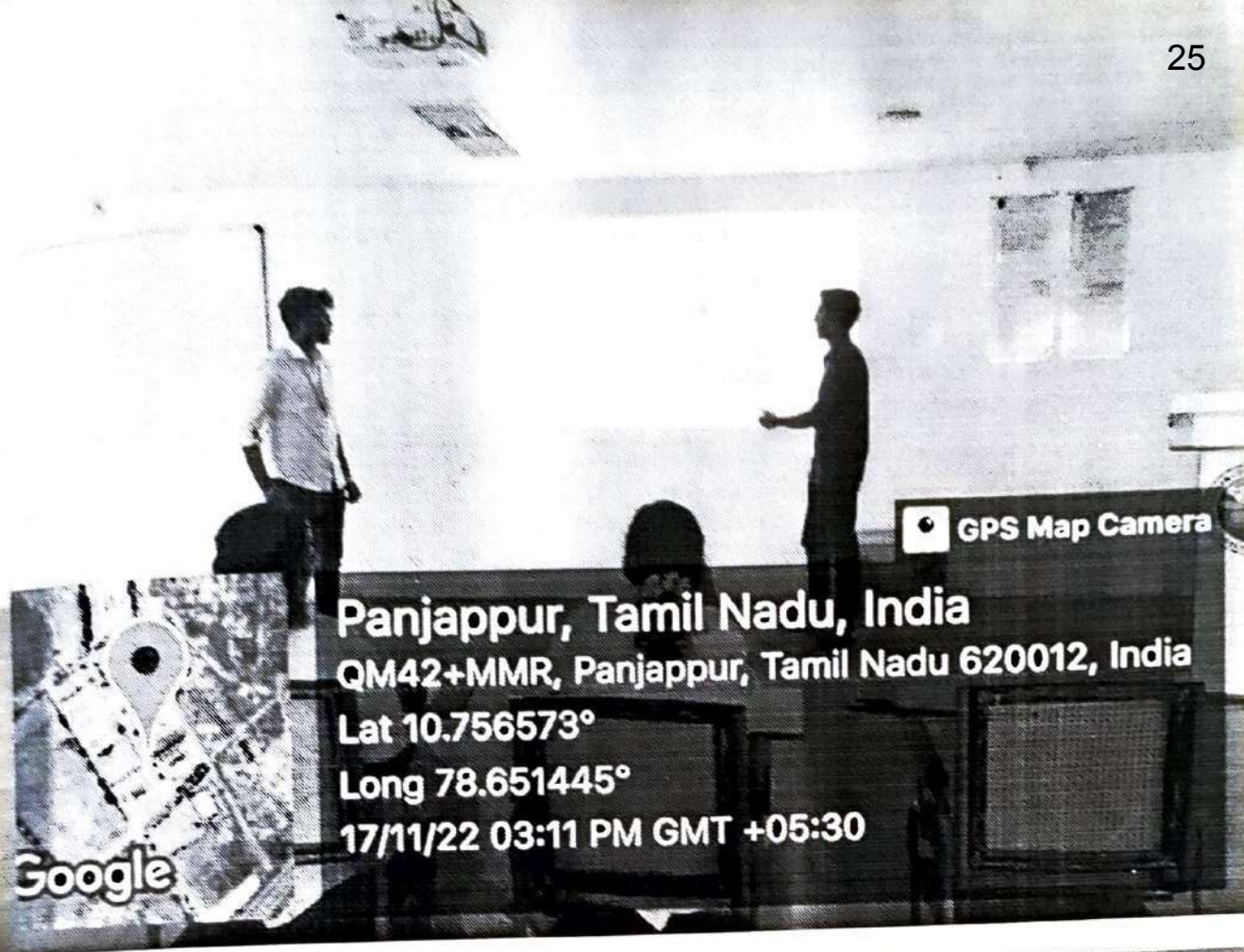
Dr.P.D.Sheba Kezia Mälarchelvi, Professor, Department of CSE

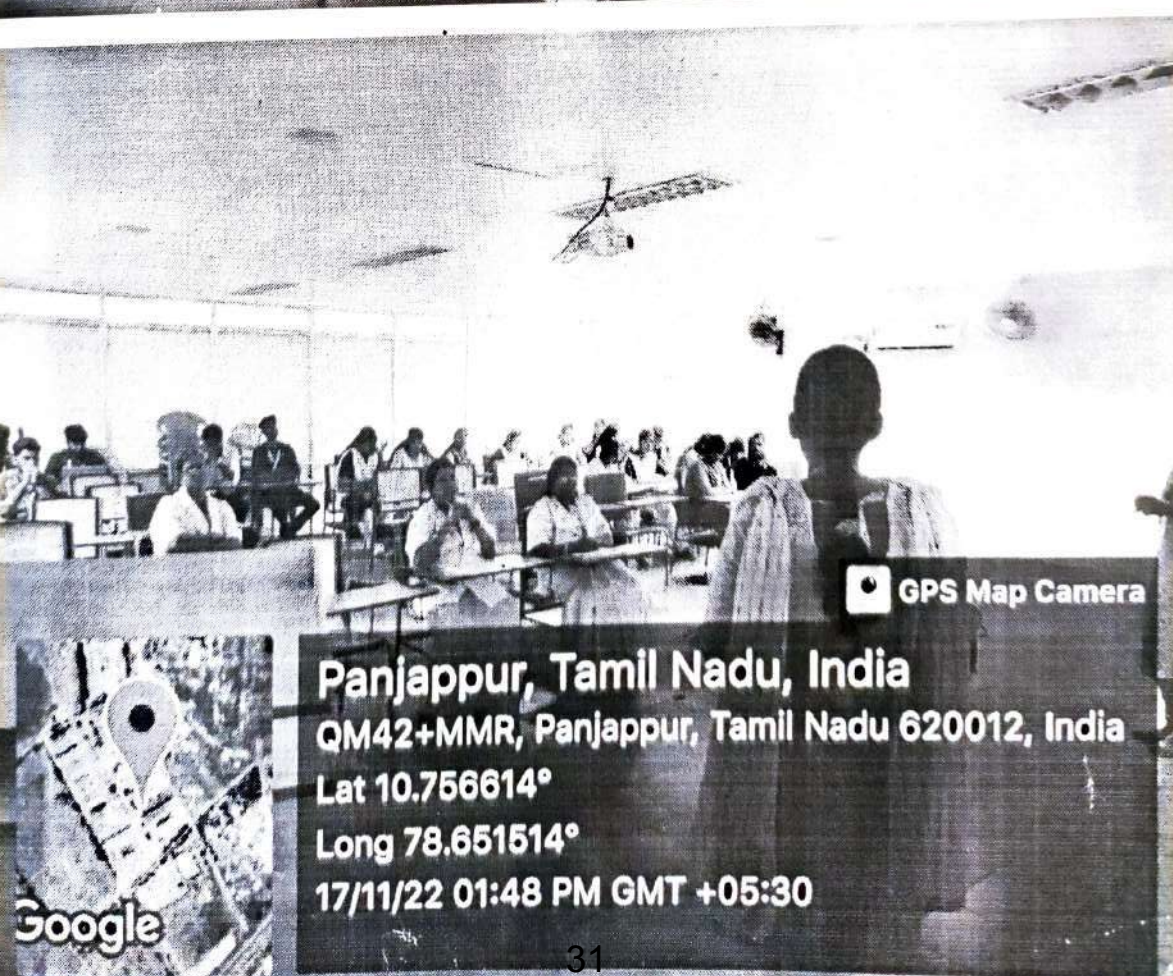
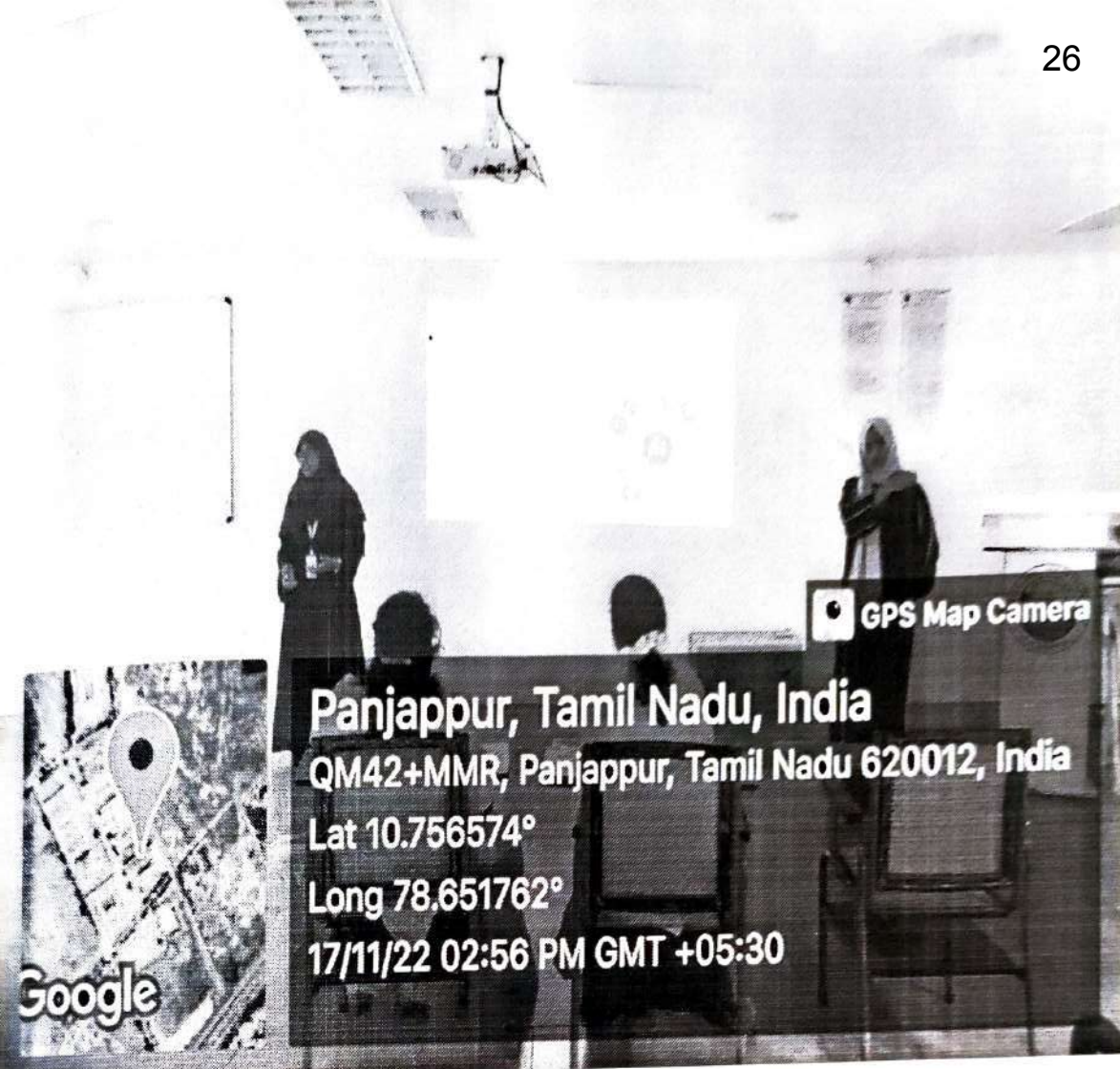

N. Bhavani

Staff coordinator


Dr. R Thillaikarasi

HoD/IT







SARANATHAN COLLEGE OF ENGINEERING

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Venkateswara Nagar, Panjappur, Thiruchirappalli - 620012



DEPARTMENT OF INFORMATION TECHNOLOGY

DO-IT ASSOCIATION



DATE: 03.11.2022

CIRCULAR

INTRA DEPARTMENT PAPER PRESENTATION CONTEST

The Department of Information Technology has planned to conduct **Paper Presentation contest** on **17th November 2022** for **II, III & IV Year** students. The students are requested to utilize this event to enhance their technical and communication skills.

Registration link: <https://forms.gle/8FiJne767fGJW6De8>

Topic: Emerging Technologies

Submission of content paper: 14.11.2022 (Monday)

Intimation of paper acceptance: 16.11.2022 (Wednesday)

Submission email-id: aswinidevi1306@gmail.com

skdivyaakannan@gmail.com

keerthanasaminathan0805@gmail.com

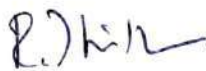
Staff Coordinator: Ms.N.Bhavani, Associate Professor, Department of IT

Student Coordinators: Aswini Devi B, Divyaa S K, Keerthana M – IV year IT

Contact the student coordinators for further details and clarifications.


N. Bhavani

Staff Coordinator



Dr.R.Thillaikarasi

Head of the Department

December 5, 2022

Priyadharshini Sundaramoorthy
 Saranathan College of Engineering
 Department of EEE
 Venkateswara Nagar, Panjapur
 Tiruchirappalli 620012
 India

Dear Priyadharshini Sundaramoorthy:

Welcome to the IEEE Student Branch program! On behalf of the Member and Geographic Activities Board, we have approved your petition to form an IEEE Student Branch at Saranathan College Of Engineering.

Your Student Branch is located in Region 10 and your activities will be of interest to the volunteers listed below:

Deepak Mathur, Region 10 Director
 Jennifer DelaCruz, Region 10 Student Activities Chair
 Warunika Hippola, Region 10 Student Representative
 Porkumaran Karantharaj, Madras Section Chair
 Brindha Saminathan, Madras Section Student Activities Chair

Your Student Branch code is STB60019960 and your School Code is 60019960. Please be sure to use them on all correspondence and reporting forms. To ensure that the students are properly assigned to your Student Branch, they should join IEEE online at <http://www.ieee.org/join> and use the school search to find the school name Saranathan College Of Engineering.

On behalf of the IEEE and its members, I would like to welcome your Branch to the student program. If you have any questions or need assistance, please do not hesitate to contact our Student Services department at:

Student Services
 IEEE Member and Geographic Activities Department
 445 Hoes Lane
 Piscataway, NJ 08854

student-services@ieee.org, email
 +1 732 562 5527, phone
 +1 732 463 9359, fax

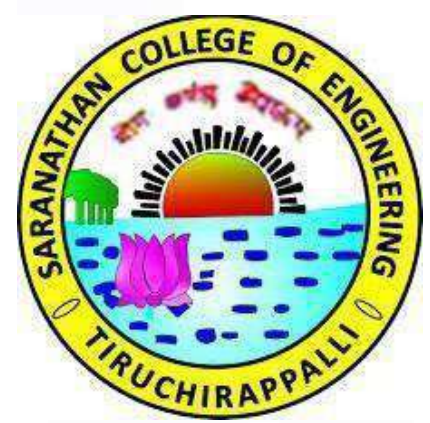
Sincerely,

Cecelia Jankowski

Cecelia Jankowski
 Managing Director
 Member and Geographic Activities

cc:

D. Mathur – Region 10 Director
 J. DelaCruz – Region 10 Student Activities Chair
 W. Hippola – Region 10 Student Representative
 P. Karantharaj – Madras Section Chair
 B. Saminathan – Madras Section Student Activities Chair
 Suganyadevi M.V – Student Branch Counselor



SARANATHAN COLLEGE OF ENGINEERING

Venkateswara Nagar, Panjappur, Tiruchirappalli 620 012



IEEE Student Branch

RECENT TRENDS IN SOFTWARE TESTING INDUSTRY

WEBINAR

Presented by

JAGADEESWARAN D



**BUSINESS ANALYST, COGNIZANT TECHNOLOGY SOLUTION,
LONDON(UK)**

Save the date

SATURDAY

21st MAY 2023

5PM



<https://meet.google.com/ejn-sgvy-bxq>



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Venkateswara Nagar, Panjappur, Tiruchirappalli - 620012



IEEE STUDENT BRANCH

Organizing webinar on

**AN IOT FORECAST THAT'S SUNNY AND
CLEAR (NO CLOUDS!)**

RESOURCE PERSON

KATHY GIORI



IoT and EdTech Entrepreneur and Strategic Advisor(USA)

WEDNESDAY

24.05.2023

7 PM

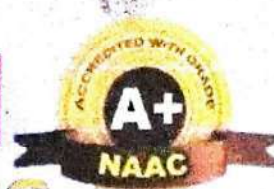


<https://meet.google.com/euz-earz-fce>



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COLLEGE OF ENGINEERING



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**TRADITIONAL CODE CLUB IN THE
NAME OF**

TURING'S GUILD

A STUDENTS' INITIATIVE



- **To Develop Leadership Skills**
- **To Develop Academic and Placement Skills**



**By the students of
Department of Computer Science and Engineering**



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(Accredited with NAAC A+ Grade)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 29.11.2022

The department of Computer Science and Engineering along with student club called “Turing Guild” has planned a Knowledge Expo’22 – a project presentation for the second and third year CSE students in academic year 2022-2023(ODD Semester) . The event coordinator is Mr.P.B.Arun Prasad, student in charge for this event is Mr.Vigneswaran III year CSE. The objective of Knowledge Expo’22 is to bring out new innovative ideas for the real time problems. From Smart India Hackathon 2021/22 (SIH) problem statements, around 62 handpicked problems from various domains were identified and given to the students for project presentation, along with their own ideas.

On 21.10.2022 brochure was circulated to second year and third years classes, with a team of 4 (Team leader+ 3 members) students can form a group with selected problem statement and registered in separate Google form. The first phase of evaluation is done on 11.11.2022. Around 22 teams from II year and 30 teams from III year were participated. The 16 teams from II year and 2 teams from III year were selected for final round.

Table 1.1 Team Count in each phase of evaluation

Dept.	Total Register	Selected from Phase-1	Prize won
II year CSE	22	16	2
III year CSE	30	2	2

On 28.11.2022 at RV-410 from 9.30 am to 4.00pm, 18 teams presented their ideas and demonstrated their project in front of Jury members Table1.2.


Table 1.2 Jury Members


S.no	Project Evaluator	Designation	Department
1.	Dr. V Punitha, M.E., Ph.D	Professor and Head	CSE
2.	Ms.N Bhavani, M.E.,	Associate Professor	IT
3.	Dr. S Mohana, M.E.	Associate Professor	CSE

The winners are list refer table 1.3., Dr.V. Punitha., HoD of CSE, appreciated the winners and all participants for their efforts taken to find solution for the real time problems.

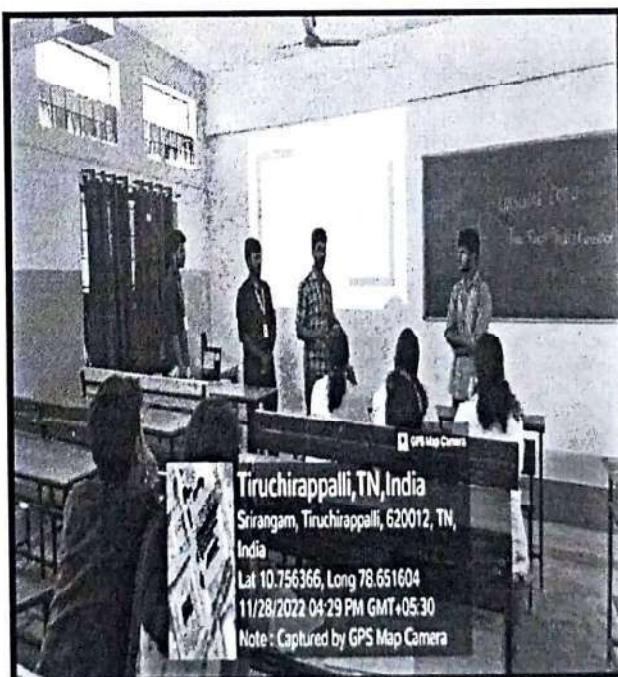
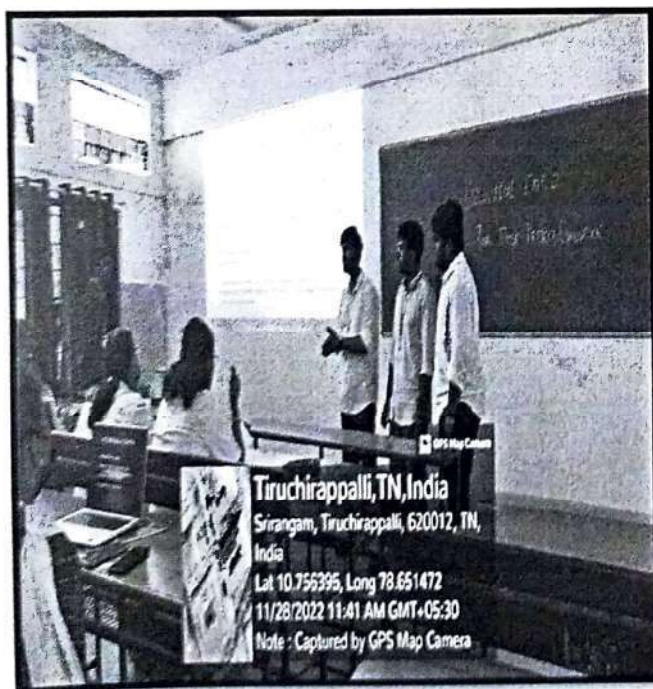
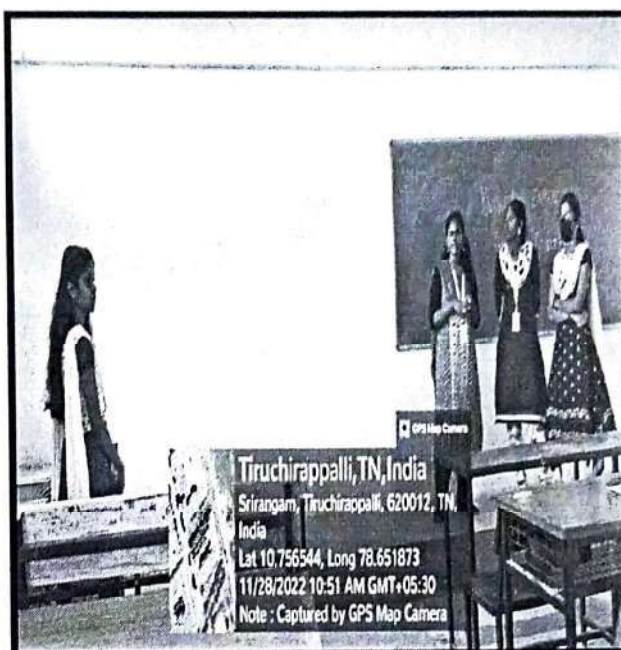
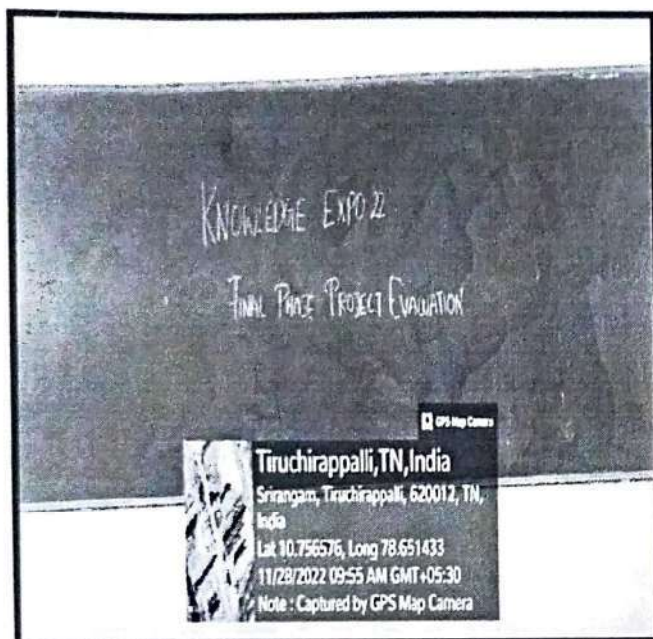
Table 1.3 Prize winners

S.no	StudentsName	Title of Project	Year	Section	Prize
1	Malathy M Magima V M Madhuvanthi K Lekshmi Prabha B S	Captcha for visually impaired	III	A	First Prize
2	Bharath B Eswara Pandiyan L Erai Arul K Hari Prasath R B	Wish List Using Django	II	A	Second Prize
3	Khrusanth S Janani Shanmugi M A Jocelyn A Abirami V	Weather Prediction	II	A	Third Prize
4	Harish R Jaswanth R Manoj Bhavvan B Gurupramodh R	Web App Penetration Testing Framework	III	A	Special Prize


Event Coordinator
(P.B.ARUN PRASAD)


Hod-CSE
(Dr. V. PUNITHA)

Photos Taken in Project Presentation:





SARANATHAN COLLEGE OF ENGINEERING
TIRUCHIRAPALLI - 620 012

**DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING**



TURING'S GUILD

A STUDENTS INITIATIVE

About us:

“Turing’s Guild” – A Student Initiative club is formed to involve IV year CSE students to organize and participate in various club activities to develop their coding skills, Aptitude, Logical Reasoning, Communication skills and enhancing their leadership quality through organizing those events in inter department activities through this club.

VISION OF THE CLUB:

- To give students the skills, confidence and opportunity to grow towards enhancement of code skills.
- To value our thoughts, new ideas and team works.
- We believe in working and learning together.

MISSION OF THE CLUB:

- To create a friendly, fun and supportive environment to develop logical thinking and programming skills together
- To provide students a forum to discuss concerns, engage in learning activities.

OBJECTIVE:

- Help students to develop leadership skills
- Help students to develop in academics and placement

TOTAL ORGANISERS:33 Students from IV year CSE A and B sec.

RESPONSIBILITIES

1. OVERALL COORDINATOR

VIGNESHWARAN N CSE B - 231114

2. ADMINISTRATION

Meet Officials and Communicates with the Guild Members

1. JASWANTH R CSE A – 231040
2. KEERTHANA S CSE A – 231050
3. VARSHINI N CSE B - 231113
4. SUBIN RAJ P CSE B - 231105
5. HARISH R CSE A - 231037
6. POOJA TANAJI MALLI T CSE B – 231079
7. VIVIAN JOSEPH A - 231116

3. RESOURCE PERSON:

Collect details of the activities and help weekly coordinators.

8. GURUPRAMODH R CSE A - 231034
9. MANOJ BHAVVAN B CSE A - 231060
10. ABDUL WASIV H CSE B - 231121
11. BHAVYA SRII A CSE A - 231018

4. TECHNICAL PERSON:

Work Related with programming, academics and help weekly coordinators.

12. NOWSHIN FATHIMA M CSE B - 231076
13. APARNA D R CSE A - 231012
14. VARSHA G CSE B - 231112
15. GLADSON RENNIS S CSE A - 231030
16. SHYAM SUNDER S CSE B - 231098
17. DHEEPIKA R CSE A - 231025
18. ANANDA DHARSHINEE M S CSE A - 231009
19. SOWMEYA V CSE B - 231102
20. NAVAB SHERIFF CSE B - 231068

5. PLACEMENT TRAINER:

Work related with placement and training activities and help weekly coordinators.

21. GIRIDHAR B CSE A - 231029
22. HARINI K CSE A - 231036
23. NATHAMUNI S R CSE B - 231067
24. SIVAKUMAR A CSE B - 231099
25. LEKSHMI PPRABHA B S CSE A - 231053

26. MAHESH KUMAR R CSE A - 231057
 27. APARNA GAYATHRI N CSE A - 231011
 28. MADHUVANTHI K CSE A - 231055
 29. SHINY ALOYSIA CSE B - 231096

6. GUILD MAINTANENCE:

Maintain Records of Guild Activities.

30. MALATHY M CSE A - 231058
 31. MAGIMA V M CSE A - 231056

7. GUILD PROMOTER:

Promotes Guild cluband Guild Activities

32. CYRIL LIVIYAN L CSE A - 231020
 33. ABDUL VAJITH M CSE A - 231004

NOTE:

Every team of Organizers will work in various categories of the Guild club duration of a Month. After Every Month team are exchanged.

In the Month of May 2023 activities so far:

S.no	Date	Activity
1	27.05.2023	Introductory fun + Educative

In the Month of July 2023 activities so far:

S.no	Date	Activity
2	06.07.2023	Python Quiz in Kahoot Application

Details of Activity -1

Exam Title	Introductory fun + Educative
Name of the Question Paper setter	"B" SEC- VIGNESHWARAN N CSE B - 231114, "B" SEC- SUBIN RAJ P CSE B - 231105
Organizers In charge	"B" SEC- VIGNESHWARAN N CSE B - 231114, "B" SEC-SOWMEYA V CSE B - 231102
Exam duration	50 Minutes for each class (TOTAL : 3 hours)
Date of Exam	27.05.2023
Exam portal:	Kahoot
Total number of participants	I CSE A -59 I CSE B -61 I AIML -55 TOTAL -175

PHOTOS OF ACTIVITY-1





Details of Activity -2

Exam Title	Python Quiz
Name of the Question Paper setter	"B" SEC- VIVIAN JOSEPH A - 231116, "B" SEC- SUBIN RAJ P CSE B - 231105
Organizers In charge	"B" SEC- VIGNESHWARAN N CSE B - 231114, "B" SEC- SHYAM SUNDER S CSE B - 231098
Exam duration	50 Minutes for each class (TOTAL : 3 hours)
Date of Exam	06.07.2023
Exam portal:	Kahoot
Total number of participants	I CSE A -59 I CSE B -61 I AIML -55 TOTAL -175

PHOTOS OF ACTIVITY-2





SARANATHAN COLLEGE OF ENGINEERING

TIRUCHIRAPALLI - 620 012



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

TURING'S GUILD

A STUDENTS INITIATIVE

About us:

“**Turing’s Guild**” – A Student Initiative club is formed to involve III year CSE students to organize and participate in various club activities to develop their coding skills, Aptitude, Logical Reasoning, Communication skills and enhancing their leadership quality through organizing those events in inter department activities through this club.

VISION OF THE CLUB:

- To give students the skills, confidence and opportunity to grow towards enhancement of code skills.
- To value our thoughts, new ideas and team works.
- We believe in working and learning together.

MISSION OF THE CLUB:

- To create a friendly, fun and supportive environment to develop logical thinking and programming skills together
- To provide students a forum to discuss concerns, engage in learning activities.

OBJECTIVE:

- Help students to develop leadership skills
- Help students to develop in academics and placement

TOTAL ORGANISERS: 33 Students from III year CSE A and B sec.

RESPONSIBILITIES

1. OVERALL COORDINATOR

VIGNESHWARAN N CSE B - 231114

2. ADMINISTRATION

Meet Officials and Communicates with the Guild Members

1. JASWANTH R CSE A – 231040
2. KEERTHANA S CSE A – 231050
3. VARSHINI N CSE B - 231113
4. SUBIN RAJ P CSE B - 231105
5. HARISH R CSE A - 231037
6. POOJA TANAJI MALLI T CSE B – 231079
7. VIVIAN JOSEPH A - 231116

3. RESOURCE PERSON:

Collect details of the activities and help weekly coordinators.

8. GURUPRAMODH R CSE A - 231034
9. MANOJ BHAVVAN B CSE A - 231060
10. ABDUL WASIV H CSE B - 231121
11. BHAVYA SRII A CSE A - 231018

4. TECHNICAL PERSON:

Work Related with programming, academics and help weekly coordinators.

12. NOWSHIN FATHIMA M CSE B - 231076
13. APARNA D R CSE A - 231012
14. VARSHA G CSE B - 231112
15. GLADSON RENNIS S CSE A - 231030
16. SHYAM SUNDER S CSE B - 231098
17. DHEEPIKA R CSE A - 231025

18. ANANDA DHARSHINEE M S CSE A - 231009

19. SOWMEYA V CSE B - 231102

20. NAVAB SHERIFF CSE B - 231068

5. PLACEMENT TRAINER:

Work related with placement and training activities and help weekly coordinators.

21. GIRIDHAR B CSE A - 231029

22. HARINI K CSE A - 231036

23. NATHAMUNI S R CSE B - 231067

24. SIVAKUMAR A CSE B - 231099

25. LEKSHMI PPRABHA B S CSE A - 231053

26. MAHESH KUMAR R CSE A - 231057

27. APARNA GAYATHRI N CSE A - 231011

28. MADHUVANTHI K CSE A - 231055

29. SHINY ALOYSIA CSE B - 231096

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31. MAGIMA V M CSE A - 231056

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32. CYRIL LIVIYAN L CSE A - 231020

33. ABDUL VAJITH M CSE A - 231004

NOTE:

Every team of Organizers will work in various categories of the Guild club duration of a Month. After Every Month team are exchanged.

- The list of activities conducted to third year CSE students in academic year 2022-2023 (ODD SEM)

Table1. Activities list

S.no	Date	Activity
1	08.10.2022	Aptitude Test in Moodle
2	14.10.2022	Aptitude Test in Moodle
3	21.10.2022	Technical Quiz in Moodle
4	29.10.2022	General Quiz in Kahoot Application
5	04.11.2022	C Programming
6	28.11.2022	Knowledge Expo'22

Details of Activity -1

Exam Title	Aptitude Test In Moodle
Name of the Question Paper setter	“A” SEC- GLADSON RENNIS S CSE A - 231030, MANOJ BHAVVAN B CSE A - 231060 “B” SEC- VIGNESHWARAN N CSE B - 231114, SHYAM SUNDER S CSE B - 231098
Organizers In charge	“A” SEC- MADHUVANTHI K CSE A - 231055, KEERTHANA S CSE A – 231050 “B” SEC- SOWMEYA V CSE B - 231102, POOJA TANAJI MALLI T CSE B – 231079
Exam duration	45 Minutes
Date of Exam	08.10.2022
Exam portal:	172.16.12.23 / Moodle
Total number of participants	CSE A-56 CSE B-53 TOTAL -109

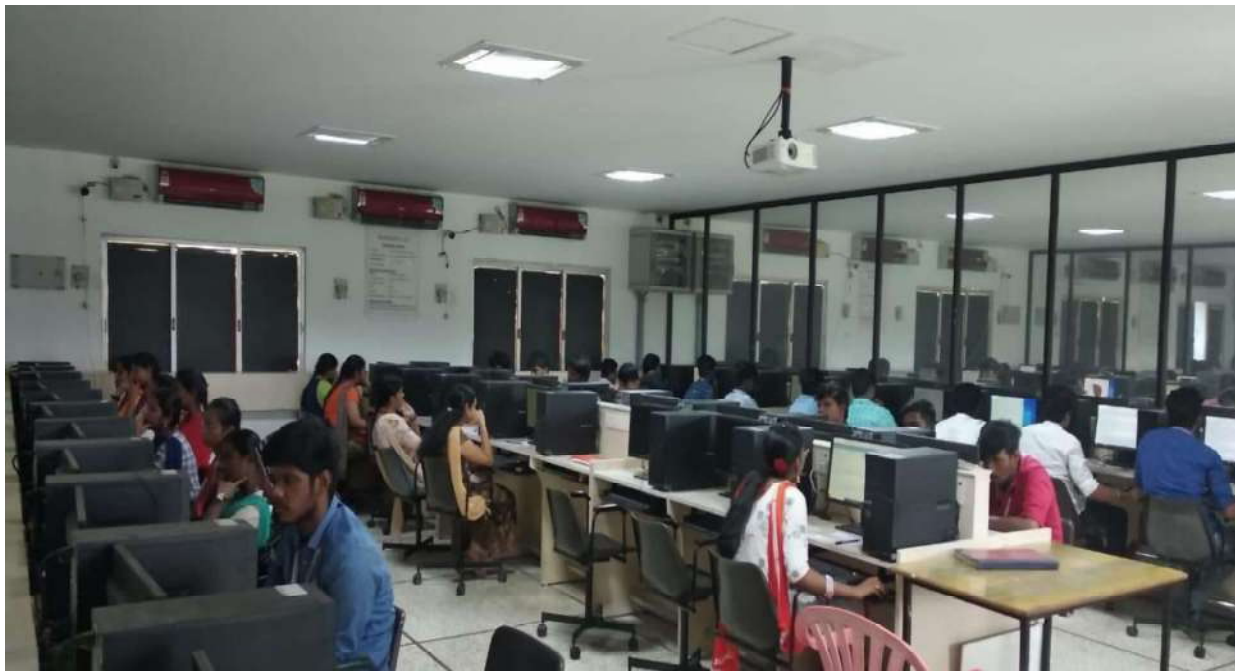
PHOTOCOPY OF ACTIVITY-1



Details of Activity -2

Exam Title	Aptitude Test In Moodle Environment
Name of the QuestionPaper setter	“A” SEC- GURUPRAMODH R CSE A - 231034, MAHESH KUMAR R CSE A - 231057 “B” SEC- NAVAB SHERIFF CSE B - 231068, SIVAKUMAR A CSE B - 231099
Organizers In charge	“A” SEC- GIRIDHAR B CSE A - 231029, APARNA D R CSE A - 231012 “B” SEC- ABDUL WASIV H CSE B - 231121, VIVIAN JOSEPH A - 231116
Exam duration	45 Minutes
Date of Exam	14.10.2022
Exam portal:	172.16.12.23 / Moodle
Total number of participants	CSE A -58 CSE B -60 TOTAL -118

PHOTOS OF ACTIVITY-2



Details of Activity -3

Exam Title	Technical Quiz In Moodle
Name of the Question Paper setter	“A” SEC- JASWANTH R CSE A – 231040, DHEEPIKA R CSE A - 231025 “B” SEC - VIGNESHWARAN N CSE B - 231114, SHINY ALOYSIA CSE B-231096
Organizers In charge	“A” SEC- ANANDA DHARSHINEE M S CSE A - 231009, HARINI K CSE A - 231036 “B” SEC- SUBIN RAJ P CSE B - 231105, ABDUL WASIV H CSE B - 231121, SIVAKUMAR A CSE B - 231099
Exam duration	45 Minutes
Date of Exam	21.10.2022
Exam portal:	172.16.12.23 / Moodle
Total number of participants	CSE A -55 CSE B -50 TOTAL -105

PHOTOS OF ACTIVITY-3



Details of Activity -4

Exam Title	General Quiz In Kahoot Application
Name of the QuestionPaper setter	“A” SEC- LEKSHMI PPRABHA B S - 231053, APARNA GAYATHRI N - 231011 “B” SEC- NOWSHIN FATHIMA M CSE B - 231076,VARSHA G CSE B - 231112
Organizers In charge	“A” SEC- HARISH R CSE A - 231037, BHAVYA SRII A CSE A - 231018 “B” SEC - SIVAKUMAR A CSE B - 231099,ABDUL WASIV H CSE B - 231121
Exam duration	Round 1- 15 minutes Round 2- 15 minutesTotal - 30 minutes
Date of Exam	29.10.2022
Exam portal:	Kahoot application
Total number of participants	CSE A- Round 1= 40 Round 2 = 39 CSE B- Round 1= 35 Round 2 = 35

PHOTOS OF ACTIVITY-4





Details of Activity -5

Exam Title	C Programming
Name of the Question Paper setter	“A” SEC- APARNA GAYATHRI N - 231011 “B” SEC- VARSHINI N CSE B - 231113
Organizers In charge	“A” SEC- MADHUVANTHI K CSE A - 231055 “B” SEC - SHINY ALOYSIA CSE B-231096
Exam duration	50 Minutes
Date of Exam	04.11.2022
Exam portal:	172.16.12.23 / Moodle
Total number of participants	CSE A -57 CSE B -54 TOTAL -111

PHOTOS OF ACTIVITY-5





Saranathan College of Engineering

Venkateswara Nagar, Trichy – 12

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Department of Computer Science and Engineering

Students' Competition/Workshop

Event No	Name of the event (Paper presentation/Mini Project/Technical Quiz/Workshop)	Department / Year of the students	Organizing date
1	Mini-Project	II, III & IV year CSE	15/11/2022
2	Code Debugging Contest	II & III year CSI	04/11/2022
3	Coding Challenge	III & IV year CSE	04/11/2022


Signature of the Coordinator


Signature of the HOD



SARANATHAN COLLEGE OF ENGINEERING

TIRUCHIRAPALLI - 620 012, Tamil Nadu - 620012.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Department Association Events - Winners

Event Name	Date	Batch No.	Name of the Students	Students Year /Class	Place secured	Prize Amount (Rs.)
Game of Codes	9 th Nov. 2022	231096	Shiny Alosiya A	III CSE 'B'	First	1,000
		231079	Pooja Tanaji Mali			
		241039	Gayathri R	II CSE 'A'	Second	750
		241024	Deepika D			
Debugging Contest	15 th Nov. 2022	241019	Barath B	II CSE 'A'	Third	500
		241122	Vijaya Varman T	II CSE 'B'		
		241103	Sudarsan S	II CSE 'B'	First	1,000
		241095	ShyamSundar K N			
Knowledge Expo'22 - A Project Presentation	29 th Nov. 2022	231067	Nathamuni S R	III CSE 'B'	Second	750
		231116	Vivian Joseph			
		231011	AparnaGayathri.N	III CSE 'A'	Third	500
		231018	BhavyaSrii .A			
		231058	Malathy M	III CSE 'A'	First	1,500
		231056	Magima V M			
		231055	Madhuvanthi K			
		231053	LekshmiPrabha B S			
		241019	Bharath B	II CSE 'A'	Second	1,250
		241034	EswaraPandiyam K			
		241033	Erai Arul K			
		241044	Hari Prasath R B			
		241057	Khrusanth S	II CSE 'A'	Third	1000
		241050	Janani Shanmugi M A			
		241052	Jocelyn A			
		241005	Abirami V			

[Signature]

HOD / CSE

H.O.D. (CSE)
Saranathan College of Engg.,
Trichirapalli - 620 012.

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SARANATHAN COLLEGE OF ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 15th November, 2022

The department of Computer Science and Engineering of Saranathan College of Engineering organized a debugging contest for their second and third year students. The event took place for two days. The first round of the contest was held on 14th of November 2022 and the second and third round was held on 15th of November 2022. The first round was conducted in Kahoot platform that consisted of thirty multi choice questions for 30 minutes. On the initial day, 115 teams, nearly 220 students participated in the competition. Forty teams were shortlisted and promoted to the second round. This round had five java questions with the expected solution. Students were allowed to spot the errors in the given code and alter them without changing the rest of the source code within 45 minutes. Participants were evaluated by the organizers under certain criteria and 10 teams were upgraded to the third round. The third round was more critical than the second round where participants were allowed to debug five questions for 45 minutes. Traditional debugging platform was used in both second and third rounds. Participants of the second and third round were awarded for their enthusiastic performance in each round. Finally, the day was completed by selecting three teams as the winners of the competition based on the number of questions the team had solved along with the time taken.

Organizers : III CSE Students

Anushree A

Rajaratnam Kawshika

Nagaraj R

Michael Jones J

Madhumitha R

Maheshwaran P

Aruna A P

Keerthika E

Brundashree R

Hariharan A T

Karthikeyan S

Faculty Coordinator

Mr. B Rethina Kumar M.E

HOD SIGNATURE

Dr. V Punitha, M.E., Ph.D.

Department of Computer Science & Engineering.



SARANATHAN COLLEGE OF ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Date: 15th November, 2022

Winner's List - Debugging Contest

Event Name	Date	Batch No.	Name of the Students	Students Year /Class	Place secured
Debugging Contest	15 th Nov. 2022	241103	Sudarsan S	II CSE 'A'	First
		241095	ShyamSundar K N		
		231067	Nathamuni S R	III CSE 'B'	Second
		231116	Vivian Joseph		
		231011	AparnaGayathri.N	III CSE 'A'	Third
		231018	BhavyaSrii .A		

Faculty Coordinator

Mr. B Rethina Kumar M.E

HOD SIGNATURE

Dr. V Punitha, M.E., Ph.D.

Department of Computer Science & Engineering.



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Date: 9th November, 2022

The department of Computer Science and Engineering of Saranathan College of Engineering organized coding competition for II and III year CSE. The event took place for two days.

COMPETITION DESCRIPTION:

No. of Levels: 3 Mode of Registration: Online
Total Participants: 188 (89 teams, 10 individuals)
Department Participated: CSE
No. Of Participants per team: 1-2 members
Year: II, III

LEVEL 1:

Date: 07.11.2022
Duration: 30 minutes
Time: 2:00 P.M – 4:00 P.M
Platform: FourEyes
Venue: RV Lab 1, RV Lab 2, RV Lab 3, RV Lab 4

LEVEL 2:

Date: 08.11.2022
Duration : 45 minutes
Time: 1:30 P.M – 3:00 P.M
Platform: HackerRank
Venue: RV Lab 1, RV Lab 2, RV Lab 3
Participants: 90 (43 teams, 4 individuals)

LEVEL 3:

Date: 09.11.2022
Duration: 60 minutes
Time: 3:00 P.M – 4:45 P.M
Platform: HackerRank
Venue: RV Lab 1
Participants: 29 (14 teams, 1 individual)

Organizers : III CSE Students

Nihila A, Sriram Ganesh P, Preethi Maheswari G, Subashree H, Rohit M, Sujjit D S
Sanofer Fathima A R, Thirumaalchelvan R, Sheima Latha J, Varun G A
Shivaani R, Ramabathren L, Sridevi J


Faculty Coordinator

Mr. B Rethina Kumar M.E



HOD / CSE

Dr. V Punitha, M.E., Ph.D.

Department of Computer Science & Engineering.



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Date: 9th November, 2022

Winner's List - Coding Competition

Event Name	Date	Batch No.	Name of the Students	Students Year /Class	Place secured
Game of Codes	9 th Nov. 2022	231096	Shiny Alosiya A	III CSE 'B'	First
		231079	Pooja Tanaji Mali		
		241039	Gayathri R	II CSE 'A'	Second
		241024	Deepika D		
		241019	Barath B	II CSE 'A'	Third
		241122	Vijaya Varman T	II CSE 'B'	

Faculty Coordinator

Mr. B Rethina Kumar M.E

HOD / CSE

Dr. V Punitha, M.E., Ph.D.
Department of Computer Science & Engineering.



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ORGANIZERS

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Rajaratnam Kawshika

Nagaraj R

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Aruna A P

Keerthika E

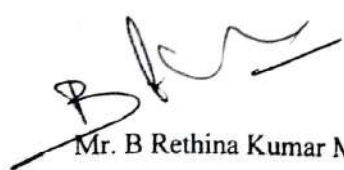
Brundashree R

Hariharan A T

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Faculty Coordinator


HOD SIGNATURE


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SARANATHAN COLLEGE OF ENGINEERING

TIRUCHIRAPALLI - 620 012, Tamil Nadu – 620012.

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

(Accredited with NAAC A+ Grade)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 9th November, 2022

The department of Computer Science and Engineering of Saranathan College of Engineering organized coding competition for II and III year CSE. The event took place for two days.

COMPETITION DESCRIPTION:

No. of Levels: 3 Mode of Registration: Online Total Participants: 188 (89 teams, 10 individuals) Department Participated: CSE No. Of Participants per team: 1-2 members
Year: II, III

LEVEL 1:

Date: 07.11.2022 Duration: 30 minutes Time: 2:00 P.M – 4:00 P.M Platform: FourEyes Venue: RV Lab 1, RV Lab 2, RV Lab 3, RV Lab 4

LEVEL 2:

Date: 08.11.2022 Duration: 45 minutes Time: 1:30 P.M – 3:00 P.M Platform: HackerRank Venue: RV Lab 1, RV Lab 2, RV Lab 3
Participants: 90 (43 teams, 4 individuals)

LEVEL 3:

Date: 09.11.2022 Duration: 60 minutes Time: 3:00 P.M – 4:45 P.M Platform: HackerRank Venue: RV Lab 1
Participants: 29 (14 teams, 1 individual)

Organizers: Q CSE Students:

Nihila A Sriram Ganesh P Preethi Maheswari G Subashree H

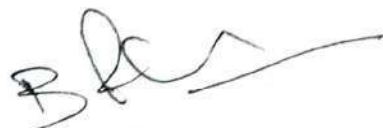
Rohit M Sujjit D S

Sanofer Fathima A R Thirumaalchelvan R Sheima Latha J Varun G A

Shivaani R Ramabathren L

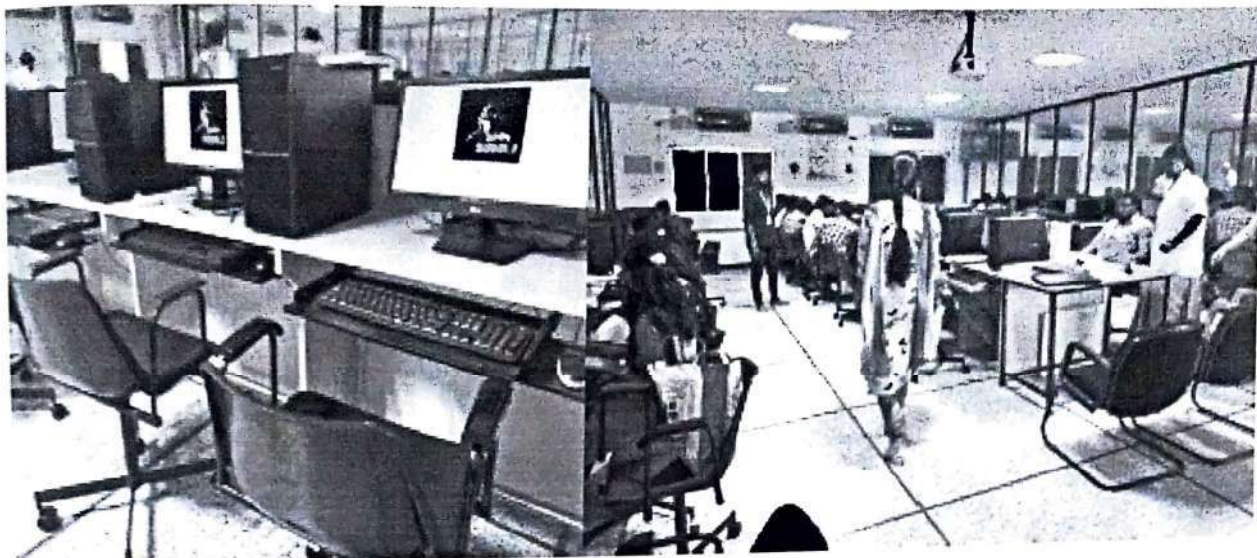
Sridevi J

Faculty Coordinator

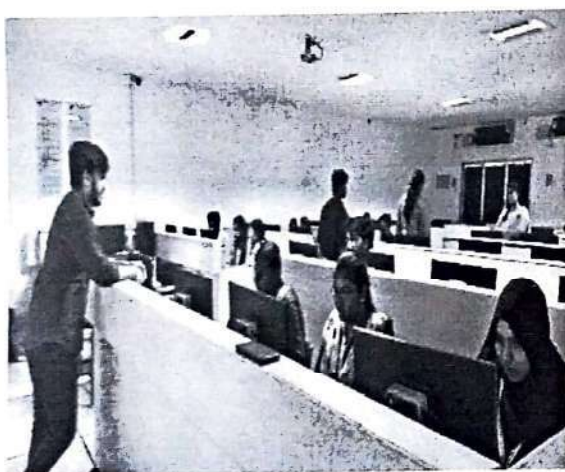

Mr. B Rethina Kumar M.E



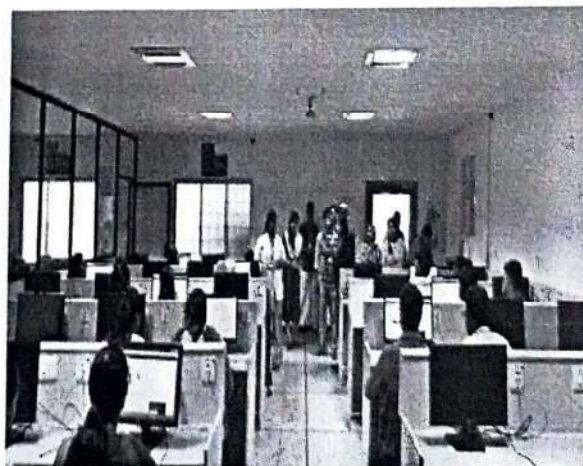
ROUND 1



ROUND 2



ROUND 3



SARANATHAN COLLEGE OF ENGINEERING

69

GAME OF CODES

Coding Competition

REBOOTING
REBELS
ORGANIZER

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

2K22

RV BLOCK, GROUND FLOOR
LABS 1 - 4

PARTICIPANTS:
II & III CSE

ROUND I - 7.11.22
ROUND II - 8.11.22
ROUND III - 9.11.22

FACULTY CO-ORDINATOR:

+91 82200 83829

STUDENT CO-ORDINATOR:

+91 90036 58519

+91 90928 20737

CASH
AWARD





SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING CODING COMPETITION- GAME OF CODES



Date: 7th- 9th November, 2022

The Final year Students of CSE organized a coding competition for II and III year CSE.

COMPETITION DESCRIPTION:

No. of. Levels: 3 Mode of Registration: Online Total Participants: 188 (89 teams, 10 individuals) Department Participated: CSE No. Of Participants per team: 1-2 members
 Year: II, III

LEVEL 1:

Date: 07.11.2022 Duration: 30 minutes Time: 2:00 P.M – 4:00 P.M Platform:
 FourEyes Venue: RV Lab 1, RV Lab 2, RV Lab 3, RV Lab 4

LEVEL 2:

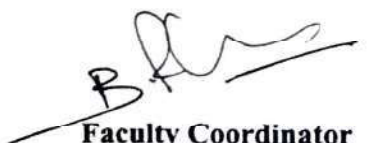
Date: 08.11.2022 Duration: 45 minutes Time: 1:30 P.M – 3:00 P.M Platform:
 HackerRank Venue: RV Lab 1, RV Lab 2, RV Lab 3
 Participants: 90 (43 teams, 4 individuals)

LEVEL 3:

Date: 09.11.2022 Duration: 60 minutes Time: 3:00 P.M – 4:45 P.M Platform:
 HackerRank Venue: RV Lab 1
 Participants: 29 (14 teams, 1 individual)

Organizers:

Nihila A Sriram Ganesh P Preethi Maheswari G Subashree H
 Rohit M Sujjit D S
 Sanofer Fathima A R Thirumaalchelvan R Sheima Latha J Varun G A
 Shivaani R Ramabathren L
 Sridevi J


Faculty Coordinator
 Mr. B Rethina Kumar M.E

ROUND 1



ROUND 2




ROUND 3



Saranathan College of Engineering, Tiruchirapalli-12
Department of Computer Science and Engineering

Prize Winners - Game of Codes

Prize	Team name	Team member 1	Team member 2	Year
1	Phoenix	SHINY ALOYSIA A	POOJA TANAJI MALI	III
2	Code Clashers	GAYATHRI.R	DEEPIKA.D	II
3	Java Vava	BARATH B	VIJAYA VARMAN T	II



Staff Coordinator



HOD-CSE

H.O.D. (CSE)
Saranathan College of Engg.,
Tiruchirapalli - 620 012.



SARANATHAN COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
PRESENTS..

CAPTAIN D. BUGGY

```
from SCE import CSE
```

```
from CSE import 3rd-year, 2nd-year
```

```
def debugging_function(CSE-A , CSE-B ):
```

```
    print("Language:  JAVA")
```

```
    print("VENUE : RV Block")
```

```
    print("Date : 14th Nov & 15th Nov")
```

```
debugging_function(CSE-A , CSE-B)
```



Ready Steady Debug



MONEY FOR MIND!

We Never Loose.. We Either Win or Learn



SARANATHAN COLLEGE OF ENGINEERING



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
DEBUGGING CONTEST - CAPTAIN D. BUGGY

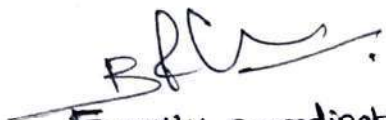
The final year students of the Computer Science and Engineering department of the Saranathan College of Engineering organised a debugging contest (Captain D. Buggy) for the second year and third year students of the Computer Science and Engineering department. It was an intra-departmental contest that was conducted on the 14th and 15th of November 2022. The competition comprised of 3 rounds in all where the difficulty level differed accordingly.

The 1st round of the contest was held on 14th November 2022. It was conducted in KAHOOT platform. It totally comprised of 30 multiple choice questions (MCQs) where each question was allotted one-minute. Around 115 teams which mostly consisted of 2 members each participated, which was around 220 student participants in all. The top 40 teams were selected for the further rounds based on their acquired score from the platform. The cut-off score was set to 14250 based on the scores of all the participants.

The 2nd round and the 3rd round were conducted on 15th November 2022. For the 2nd round the participants were given five java questions which had errors along with the sample inputs and expected output. Students were only allowed to debug the error code and produce the expected output without altering the source code within 45 minutes. Participants were evaluated by the organisers. The criteria for evaluation was mainly based on the number of questions solved. A tie-breaker round was also conducted to pick the top 10 teams off the 40 teams that participated in the second round.

The 3rd round was also similar to the second round where participants were allowed to debug five questions for 45 minutes. Traditional debugging platform was used in both second and third rounds. Participants of the

second and third round were awarded for their enthusiastic performance in each round. Finally, the day was completed by selecting three teams as the winners of the competition based on the number of questions the team had solved along with the time taken to solve the questions.


Faculty coordinator



Saranathan College Of Engineering

Department of Computer Science and Engineering

Debugging Contest-Captain D. Buggy



Winners List

Venue : RV Block-Lab 2

Date:15-11-2022

T.No	Team Name	Year	Sec	Batch No	Participant 1	Batch No	Participant 2
20	Imagine ChildWorks	2	B	241103	Sudarsan S	241095	Shyam Sundar K N
45	The Eight Wonder	3	B	231067	Nathamuni S R	231116	Vivian Joseph
67	GenZ Coders	3	A	231011	Aparna Gayathri.N	231018	Bhavya Srii .A


Event Coordinator


CSE HOD



Saranathan College Of Engineering
Department of Computer Science and Engineering
Debugging Contest-Captain D.Buggy



Venue: Lab 1 - Session 1

Date:14-11-2022

T.No	Team Name	Year	Sec	Batch No	Participant 1	Signature 1	Batch No	Participant 2	Signature 2
------	-----------	------	-----	----------	---------------	-------------	----------	---------------	-------------

ROUND ONE ATTENDANCE SHEET

Lab 1

1	Akash	2	A	241008	Akash	<i>Akash</i>			
2	Dark Knight	2	A	241042	GoppyKrishna M	<i>GoppyKrishna M</i>			
3	Legendary coder	2	A	241045	Hariharan T	<i>T. Hariharan</i>			
4	Alpha Debugger	2	B	241110	Tejeshwar M	<i>M. Tejeshwar</i>			
5	Vignesh	2	B	241119	Vignesh L	<i>L. Vignesh</i>			
6	Coder	3	B	231066	NANDHANA S V	<i>S.V. nandhan</i>			
7	Epic Failure	3	B	231105	Subin Raj	<i>AB</i>			
8	EDITH	3	B	231114	Vigneshwaran N	<i>N. Vignesh</i>			
9	Anonymous debugger	3	B	231098	Shyam S				
10	Overnight Sensations	3	B	231076	NOWSHIN FATHIMA M	<i>M. Nowshin Fathima</i>			
11	LONE, NOT ALONE	3	B	231112	VARSHA G	<i>Varsha G.</i>			
12	Victory	2	B	241097	D. Sivakarhikeyan	<i>D. Sivakarhikeyan</i>			
13	Code prodigies	2	A	231053	B. S. Lekshmi Pprabha	<i>AB</i>	231055	Madinuvanthi. K	<i>AB</i>
14	Try	2	B	241127	Bharath J.B	<i>AB</i>	241128	Kumerasen.R	<i>AB</i>
15	Startup team	2	B	241073	PRIYADHARSHINI M	<i>Priyadharsini M</i>	241091	SHIVANI M J (A)	<i>Shivani M.J</i>
16	Error 404	3	A	231040	Jaswanth R	<i>R. Jaswanth</i>	231060	Manoj bhavvan B	<i>Manoj</i>
17	Javadoc Juveniles	3	A	231007	Alan Jamey M	<i>Alan Jamey</i>	231030	Gladson Rennis S	<i>SR</i>
18	Bug Aches	3	A	231028	FELICIA A	<i>A Felicia</i>	231052	LAVANYA M	<i>H. Lavanya</i>

[Signature]
 Event coordinator

E-magazine



SARANATHAN
COLLEGE OF ENGINEERING
 Affiliated to Anna University -Chennai
 Approved by AICTE -New Delhi



Department of Information Technology

E-MAGAZINE

2022-2023

"Winners Begin with Sara"



EDITORIAL MESSAGE



I felt ecstatic to announce that the Department of Information Technology, Saranthan College of Engineering, Tiruchirappalli is releasing its next edition of magazine for the academic year 2022-2023. Our objective is to produce confident professionals tuned to real time working environment wherein the magazines plays a vital role. This magazine is the reflection of the current events and activities of the IT department.

It is also a display place to show case the qualities of the students and faculty members of the department. This also encourages the students to display their hidden talent and to bring forth their creativity and artistic turn of mind. I am sure that the contents of this magazine will be informative and resourceful. I would like to appreciate of all the members of Editorial board for their noteworthy contribution to the publication of this magazine. I would like to extend my appreciation to all the authors of the articles of this magazine.

Best wishes and blessings to outgoing (Batch 2019 - 2023) students. Wishing this will inspire the students who are yet to make a contribution and hopefully expecting their contributions in near future.

Dr.R.Thillaikarasi

HoD/IT

VISION OF THE INSTITUTION

Impart an inclusive engineering education that beyond being a facilitator for a career and rudimentary skills, equips the students to offer ethically & environmentally conscious solutions to societal issues.

MISSION OF THE INSTITUTION

Develop the Institution into a Model Self Financing College of Engineering and Technology. Professional Training to our students with State of the art Laboratories and converting them into Technocrats of international repute.

1. Create a nurturing, holistic environment of engineering education to facilitate every student realize their full potential
2. Strive to make the students strong in basic concepts armed with appropriate skills to enhance one's ability to apply the knowledge to provide solutions to real time issues.
3. Maintain an ambience that facilitates the students to strengthen their ethical value systems.
4. Actively promote R&D and institute-industry interaction.

VISION OF THE DEPARTMENT:

To provide value based higher education in the field of Information Technology, enhance the potential of students in engineering education, innovations, entrepreneurship and provide resources to groom students as globally acknowledged IT professionals.

MISSION OF THE DEPARTMENT:

- To produce quality engineers by providing state of the art engineering education effectively through highly qualified and competent faculty and best-in-class infrastructure
- To inculcate a high regard for ethical principles and an understanding of human and environmental realities through student centric learning methodologies.
- To encourage continuous learning and to impart personality development skills to succeed and lead in all areas.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO1: To provide students with a strong foundation in the mathematical, scientific and engineering fundamentals necessary to formulate, design, solve and analyze engineering problems.

PEO2: To provide exposure to emerging cutting edge technologies, adequate training & opportunities to work as teams on multidisciplinary projects with effective communication skills and leadership qualities.

PEO3: To prepare the students for a successful career and work with values & social concerns bridging the digital divide and meeting the requirements of the Corporate Industries

PEO4: To promote student awareness on life-long learning and to introduce them to professional ethics and codes of professional practice.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOS)

PSO1: Graduates will be able to design, develop, test and maintain software systems with the latest tools in the fields of IT.

PSO2: Graduates will be able to apply the knowledge of academic learning to solve real life Engineering problems and find solutions for contemporary issues faced by society at large.

CHIEF EDITORS:

Dr.R.Thillaikarasi, M.Tech., Ph.D

EDITORS:

Ms.J.Sangeethapriya, M.Tech.,

STUDENT EDITORS:

Swetha S

Sivanesh S

Arun Kumar J

Joanne Pranita G

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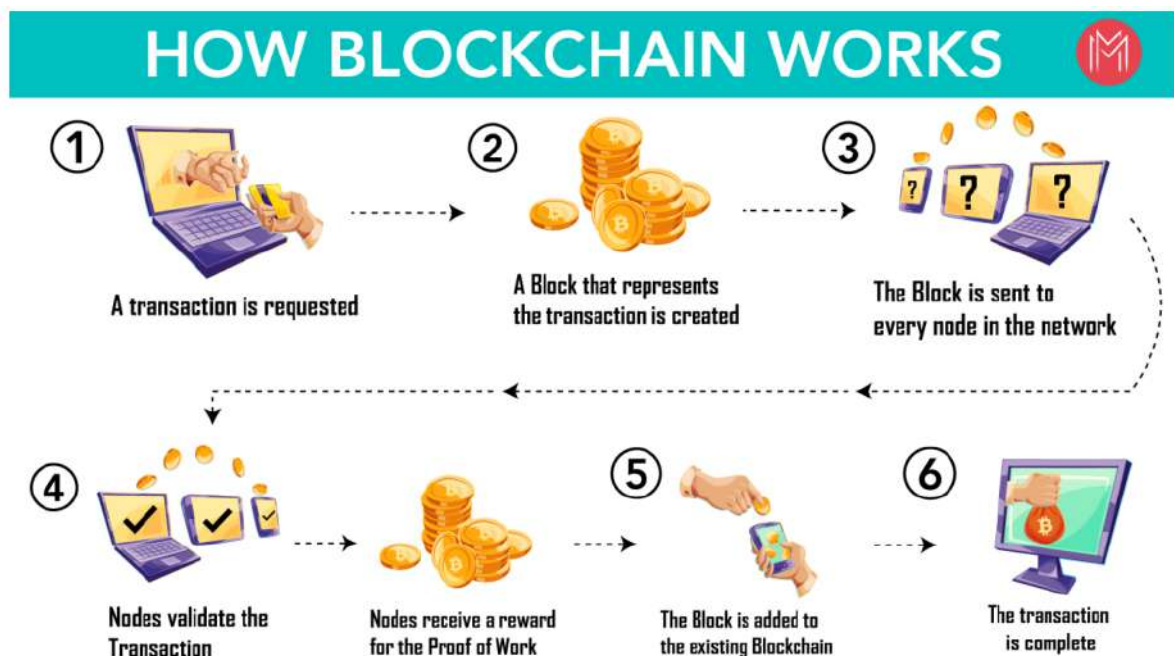
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Blockchain Technology: Revolutionizing Industries

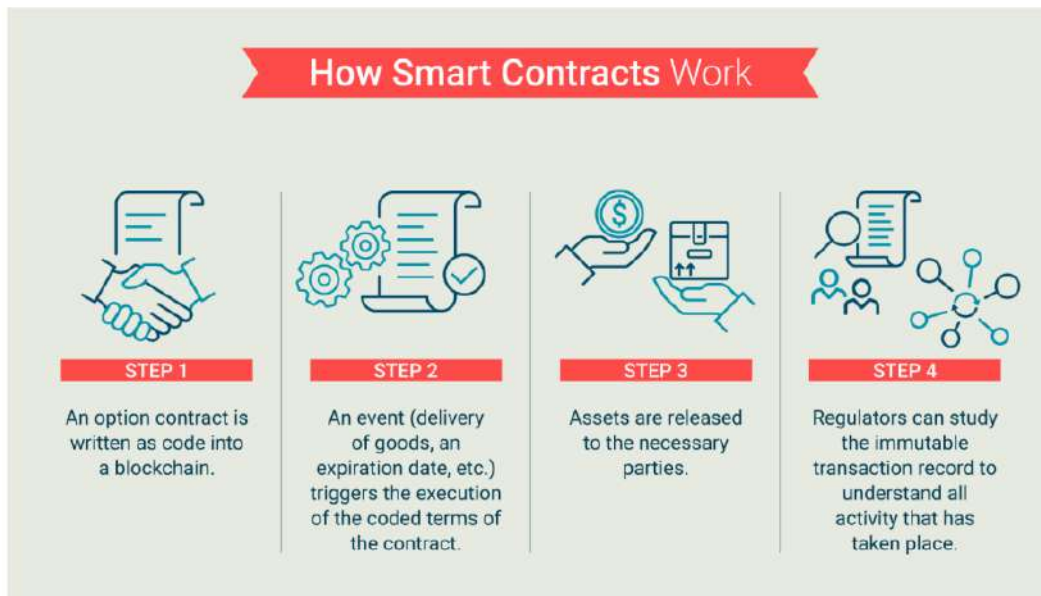
Blockchain technology is a revolutionary invention that has the potential to transform the way we conduct transactions and secure data. It was initially created to support the cryptocurrency Bitcoin, but it has since become much more than that. Blockchain has become a foundational technology with a wide range of applications beyond cryptocurrencies, including supply chain management, voting systems, and smart contracts.

So, what is blockchain technology, and how does it work? In simple terms, a blockchain is a decentralized digital ledger that records transactions on a peer-to-peer network. Each block on the chain contains a set of transactions, and every block is linked to the previous one. The blocks are encrypted, and the network verifies each transaction, making it nearly impossible to tamper with the data.



One of the most significant advantages of blockchain technology is its security.

Blockchain technology has many applications across various industries. One example is supply chain management. Blockchain technology can be used to track products from the manufacturer to the end consumer, ensuring that products are authentic and of high quality.



Smart contracts are another application of blockchain technology. A smart contract is a self-executing contract that automatically enforces the terms and conditions of an agreement. This eliminates the need for intermediaries, reduces costs, and increases efficiency. Smart contracts can be used in various industries. In conclusion, blockchain technology is a revolutionary invention that has the potential to transform various industries. As the technology continues to evolve, we can expect to see more applications of blockchain in various sectors, making our lives more secure, transparent, and efficient.

SUBMITTED BY:

-Harris Samuel D

(2nd Year Information Technology)

FASCINATING FACTS ABOUT CODING

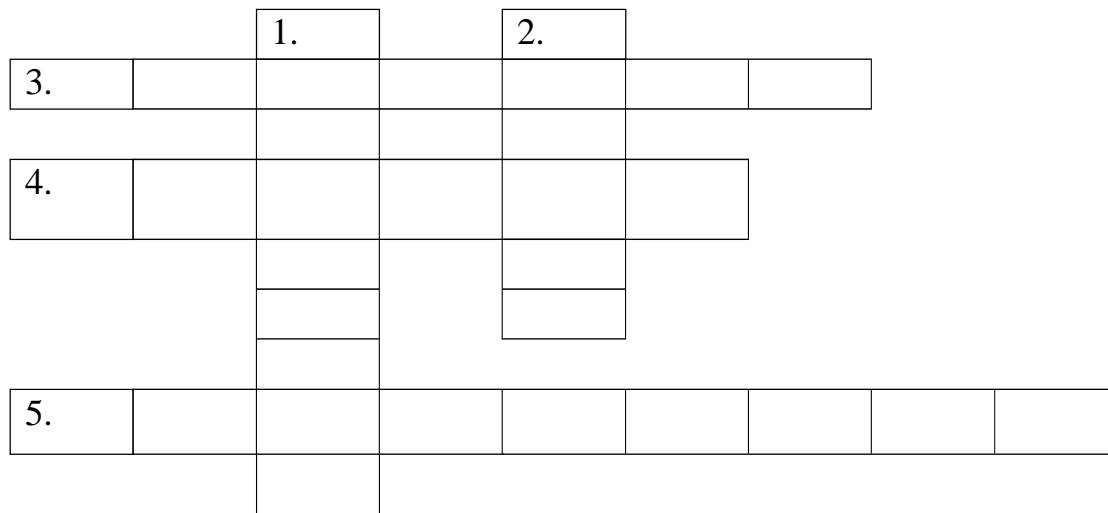
1. Fortran (FORmula TRANslation) was the first coding language created by John Backus and his team at IBM in the 1950s.
2. ADA is a coding language built in 1980 that is used by the International Space Station. In 1995, this programming language was accepted as an international standard programming language.
3. Bill Gates, Co-founder of Microsoft, created his first computer program- an implementation of tic-tac-toe that enabled users to play games against the computer.
4. Go is a programming language that was designed at Google in 2007 to enhance coding productivity in the time of multicore, networked machines and large codebases.
5. Markus Persson, a Swedish software programmer, developed and launched the computer game- Minecraft in 2009. Later the computer game became so popular that Microsoft bought the game for \$2.5 billion.
6. Before creating the “C”, one of the most well-known programming languages, there was a predecessor coding language known as the “B”. This “B” language was written by Ken Thompson, a Turing Award-winning computer scientist. Later, Dennis Ritchie created the “C” language by improving the “B” language.
7. Fred Cohen is known as the inventor of computer virus defense techniques. In 1983, he developed a parasitic application that could ‘infect’ computer systems. He called it a computer virus.
8. You cannot represent infinity as an integer in any coding language. But with python, you can represent using, **float(‘inf’) and float(‘-inf’)**.
9. Very first computer bug in history was discovered in 1945 when engineers found a moth – an actual bug – in a Harvard Mark II computer case. This moth was short-

circuiting contacts, making a computer crash. Since then, computer failures have been called bugs.

10. Knowing how to code is a major requirement for astronomers.
11. Perl, Delphi, and VBA are the most disliked languages due to their complexities.
12. The first computer virus was created by a 15-year-old in 1982. It was designed to affect Apple II computers.
13. The code that sent the man to space was less complex than the code that runs your smartphone.
14. Learning how to code can improve your analytical thinking, problem-solving skill, creative thinking, computational thinking, and leadership-related skills.
15. A teenager, Avi Schiffmann, created one of the world's most popular COVID-19 tracking websites. He programmed ncov2019.live, the lauded coronavirus tracker that is one of the most visited corona trackers in the world.

Submitted by,
Swetha S
3rd year IT.

PUZZLE ON WEB DEVELOPMENT (HTML)



Down

1. What does the `<p></p>` tag create?
2. What does the `<iframe>` tag add to our websites?

Across

3. `<h1>` adds a large what to the website?
4. What does the `` tag add to your website?
5. What do we use to link pages together?

ANSWER:

		1.P		2. V				
3. H	E	A	D	I	N	G		
		R		D				
4. I	M	A	G	E	S			
		G		O				
		R		S				
		A						
5. H	Y	P	E	R	L	I	N	K
		H						

SUBMITTED BY:

SUBHASHINI R -244052

JOANNE PRANITA G – 244021

II IT

CHATBOT

The Rise of Chatbots

The idea of a chatbot was inspired by Alan Turing. The first publicly known chatbot was ELIZA. ELIZA was developed in 1966 at the MIT Artificial Intelligent Laboratory by Joseph Weizenbaum. It stimulates conversation based on hand-craft scripts that mimic a Rogerian psychotherapist. When a user chats with ELIZA, he or she types some statements in natural languages. ELIZA analyzes the input text and looks for the presence of a keyword, and then generates responses according to a rule associated with the keyword.

Traditionally, the chatbots system is not known to people who are not more into the technology.

- Even if there exist a chatbot system, it is not much accurate in providing the answer or solutions.
- This process consumes lot of time as well as money as the customer needed to visit college if its miles away from home.
- Also, this process may lead to communication gap between student and college.

Rule-based

A rule-based chatbot processes information and provides responses based on a set of predefined rules with the use of pattern machine algorithms. Although the pattern matching techniques vary in complexity, the basic idea is the same. The user input is classified as a pattern, and the chatbot selects a predefined answer by matching the pattern with a set of stored responses. The pattern and response matching algorithms are handcrafted. Pattern matching is adopted by many chatbots and is especially popular among the early chatbots like ELIZA, PARRY,

and ALICE. The advantage of the rule-based approach is its speed as it does not require any deep analysis of the input text.

Principles Of Chat

1. Don't pretend to be a human
2. Keep it incredibly simple
3. Respect the chat medium.
4. Optimize for the end user.
5. Use sparingly.

It deals with its human-likeness, which encompasses its appearance, its ability to interpret and provide responses, and its personality. In the context of a chatbot, appearance refers to the graphical representation of the agent, such as its age and clothing.

A chatbot is an exemplary example of human-computer interaction. In recent years, there has been a significant advancement in the development of chatbots, and they have evolved into one of the most powerful and widely adopted applications. Enhancing language comprehension and generation ability is a critical step in future development. Now we have confidence that we can build more powerful human-like chatbots in the near future.

Submitted by,

Selline.E-244046-2nd year.

ThirishaSri.J-244054-2nd year.

DRONE

Introduction:

Companies in certain industries are using, investing in or planning to invest in drones. As the market for drones and drone services grows, boards should understand the implications this technology might have on their company's strategy.

Growing Market for Drones:

After analyzing more than 150 emerging technologies, PwC categorized drones as one of its Essential Eight technologies. Infrastructure, agriculture, security and media and entertainment are key industries for drone-enabled services. Spending is expected to pick up in other industries, including engineering and construction, power and utilities, mining and retail.

Companies investing in drones expect cost savings, revenue growth and better decision-making from the analysis of data that drones collect.

Drones in Action Today:

Maintaining Infrastructure up in the air :

Maintaining infrastructure up in the air – Inspecting and maintaining structures like wind turbines, bridges and even skyscrapers costs money and manpower – and it's dangerous.

Right now, a standard wind turbine inspection costs about \$1,500 per tower.¹ The same inspection using a drone cuts the cost by around 50%.

Analyzing Farmland from the sky :

In the agriculture industry, drones are being used for precision farming.

They monitor crops, do soil and field analysis and even assess crop health.

Providing Security-flying System :

Monitoring security fences, ports, airports, concerts and performances, banks and armored cars typically requires time and manpower.

It can also be costly and even risky. Drones can hover and follow objects or people at a safe distance. And they can cover large areas faster than humans.

Advantages:

- 1.Makes inspections more efficient. 2.Helps greatly with science research.
- 3.Makes delivery easier.
- 4.Helps emergency responders save lives. 5.greater for recording videos.
- 6.Military applications.

Adoption Benefits and Barriers :

As with any new technology, companies and boards need to understand the pros and cons of adoption.

The benefits of using drones include improved efficiencies, increased accuracy, accelerated decision-making with faster and more data, reduction of maintenance costs and lower labor costs.

But there are also challenges that might impact a company's decision to use drones. Privacy issues, bandwidth availability and capacity constraints are just some of the hurdles.

Submitted by,
S.Kaviya-II Year-IT
A.Gayathri-II Year-IT

PUZZLES

WORD LADDER

Convert the word LISP into the word JAVA in 5 steps or less. You must only change one letter of the word on each step. On every step you should have created a word in English dictionary.

L	I	S	P
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
J	A	V	A

SOLUTION:

L	I	S	P
L	I	M	P
L	A	M	P
L	A	M	A
L	A	V	A
J	A	V	A

BIT LADDER

Convert the Binary word 000 into the binary word 100 in 7 steps or less. You must only change one bit of the word on each step. You may only use 1s and 0s.

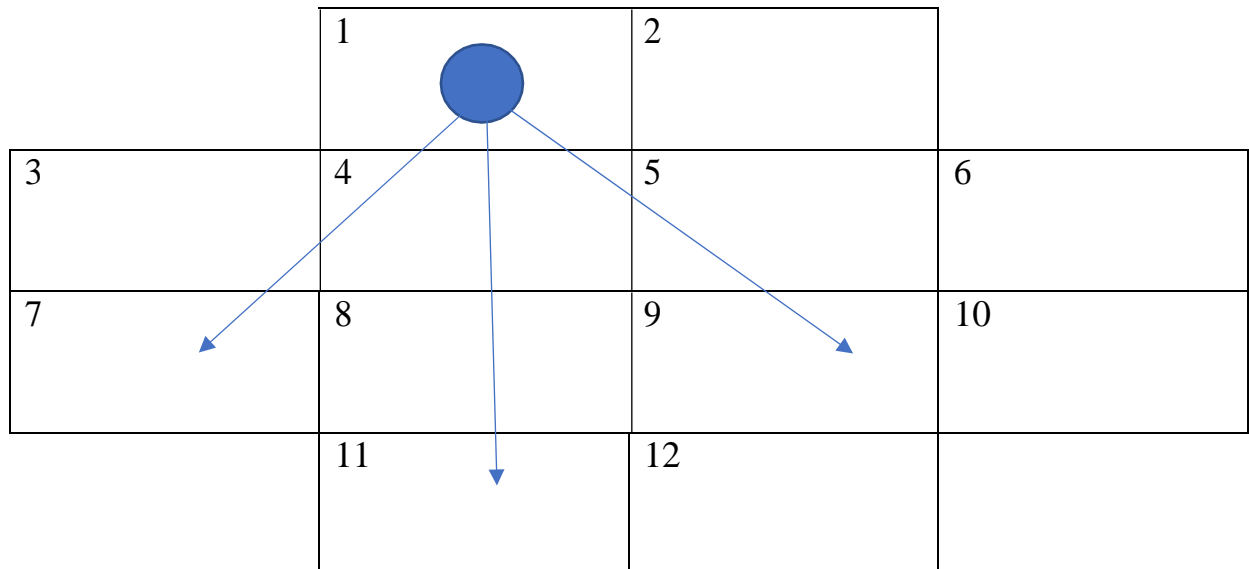
0	0	0
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
1	0	0

SOLUTION:

0	0	0
0	0	1
0	1	1
0	1	0
1	1	0
1	1	1
1	0	1
1	0	0

THE KNIGHT'S TOUR

A single chess Knight is able to move on the small cross shaped board below. A Knight can move two spaces in one direction and then move one square at right angles, or viceversa, as shown. It jumps to the new square without visiting any in between, and must always land on a square on the board. Find a sequence of moves that starts from Square 1, visits every square exactly once by making such knight's moves and finishes where it started.



SOLUTION:

1-9-3-11-5-7-12-4-10-2-8-6-1

Submitted by,
Samuvel A
III Year – IT

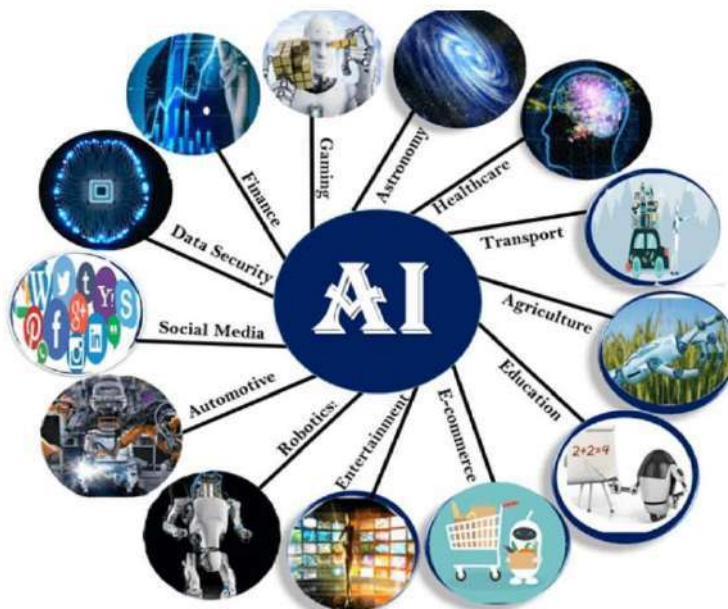
ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

When most people hear the term artificial intelligence, the first thing they usually think of is robots. That is because big-budget films and novels weave stories about human-like machines that wreak havoc on Earth. But nothing could be further from the truth.

APPLICATIONS OF AI

The applications for artificial intelligence are endless. The technology can be applied to many different sectors and industries.



- AI is being tested and used in the healthcare industry for dosing drugs and dosing

out different treatments tailored to specific patients, and for aiding in surgical procedures in the operating room.

- Computers that play chess and self-driving cars Each of these machines must weigh the consequences of any action they take, as each action will impact the result. For self-driving cars, the computer system must account for all external data and compute it to act in a way that prevents a collision.

WAYS OF IMPLEMENTING AIMACHINE LEARNING

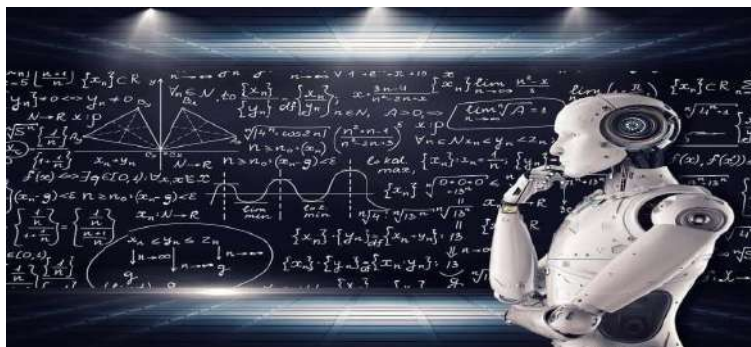
MACHINE LEARNING

It is machine learning that gives AI the ability to learn. This is done by using algorithms to discover patterns and generate insights from the data they are exposed to.

DEEP LEARNING

Deep learning, which is a subcategory of machine learning, provides AI with the ability to mimic a human brain's neural network. It can make sense of patterns, noise, and sources of confusion in the data.

CONCLUSION:



AI holds the key to unlocking a magnificent future where, driven by data and

computers that understand our world, we will all make more informed decisions. Robots play a vital role in digital world. “Computers will overtake humans with AI within next 100 years. When that happens, we need to make sure the computers have goals aligned with ours”

Submitted by,

Priyadharshni K(234028)

Roheeth Kumar RJ(234033)

III – IT.

PUZZLE

C	O	M	P	U	T	E	R	A	B	I	T
D	A	M	E	S	S	E	N	G	E	R	Z
C	R	O	Y	P	U	Z	Z	L	E	L	O
D	B	W	C	H	R	O	M	E	L	O	O
C	L	A	S	S	R	O	O	M	O	O	N
H	A	P	P	L	E	M	P	E	N	U	P
R	A	B	B	I	T	H	E	A	H	L	E
O	W	D	V	I	B	E	R	O	S	E	E
M	O	N	D	A	G	M	A	I	L	S	Y

Find the following in the given puzzle:

- 1.MESSENGER
- 2.CLASSROOM
3. CHROME
- 4.VIBER
- 5.ZOOM
6. OPERA
- 7.GMAIL

ANSWER:

C	O	M	P	U	T	E	R	A	B	I	T
D	A	M	E	S	S	E	N	G	E	R	Z
C	R	O	Y	P	U	Z	Z	L	E	L	O
D	B	W	C	H	R	O	M	E	L	O	O
C	L	A	S	S	R	O	O	M	O	O	N
H	A	P	P	L	E	M	P	E	N	U	P
R	A	B	B	I	T	H	E	A	H	L	E
O	W	D	V	I	B	E	R	O	S	E	E
M	O	N	D	A	G	M	A	I	L	S	Y

SUBMITTED BY:

JOANNE PRANITA G

244021/II IT

IOT - INTERNET OF THINGS

INTRODUCTION:

IoT, short for the Internet of Things, refers to a network of physical objects (also called "things") that are embedded with sensors, software, and other technologies that enable them to connect and exchange data over the internet. These "things" can range from simple devices like sensors and switches to complex systems like vehicles and buildings.

One of the main benefits of IoT is its ability to collect and analyze data from various sources in real-time. This data can be used to improve efficiency, reduce costs, and enhance decision-making in many different industries. For example, IoT sensors can be used to monitor and optimize energy usage in buildings, track inventory and shipments in logistics, and even monitor crop health and yield in agriculture.



IoT also has the potential to revolutionize the way we interact with technology. For example, with voice-activated assistants and smart home devices, we can control our environments with our voices, without needing to touch a screen or

button. Additionally, IoT can enable more personalized experiences, as devices can learn our preferences and adjust accordingly

Overall, IoT has the potential to transform many different industries and aspects of our lives. As the technology continues to develop and become more advanced, we can expect to see even more innovative applications of IoT in the future.

IoT Security:

Emerging technologies often come with a new and changing landscape of risks and threats. The Internet of Things is no different. Because the IoT can enable things like building lighting and HVAC, vehicle diagnostics and even power grids, protecting these critical systems and infrastructure elements is paramount

Common IoT attacks include privilege escalation, which exploits vulnerabilities like bugs or design flaws to get access, and firmware high jacking, which uses fake updates or drivers as a means to download malicious software.

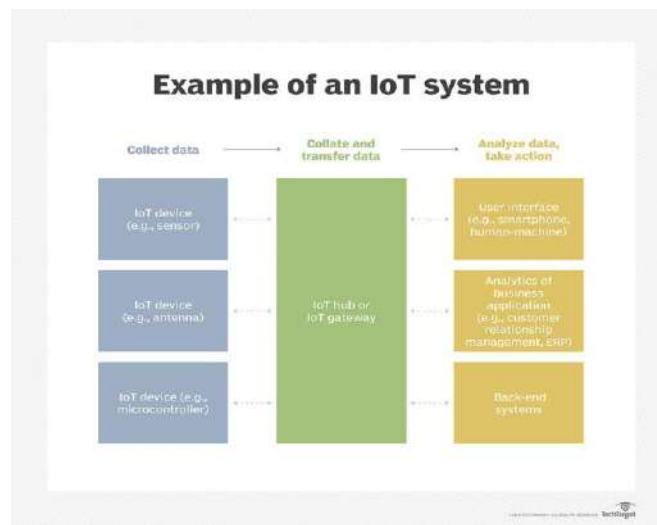
IoT Precautions:

The U.S. Department of Health and Human Services Health Sector Cybersecurity Coordination Center recommends individuals and organizations take a number of precautions to minimize risk. One precaution is to stay away from Universal Plug and Play, which lets devices on the same network automatically discover and communicate with each other.

ADVANTAGES :

- Ability to access information from anywhere at any time on any device.
- Improved communication between connected electronic devices.
- Transferring data packets over a connected network saving time and money.

- Automating tasks helping to improve the quality of a business's services and reducing the need for human intervention.



Applications:

Agriculture: The ever-increasing world population drives up the demand for agricultural products. However, the migration of young people to big cities destabilizes the human resource required for agricultural development. IoT and related technologies can be pivotal in automating farming processes and fulfilling food demand.

Consumer Applications: The Internet of Things makes people's lives easier by monitoring and managing their lifestyles. There is a massive market for intelligent electronics, watches, television systems, health tracking, and virtual reality. In addition, IoT is leading the market with applications such as home security and personal asset tracking.

Submitted by,
G. Glory nikita,
244013, II - IT

QUIZ

Question:

Alok has three daughters. His friend Shyam wants to know the ages of his daughters. Alok gives him first hint.

1) The product of their ages is 72.

Shyam says this is not enough information Alok gives him a second hint.

2) The sum of their ages is equal to my house number.

Shyam goes out and looks at the house number and tells "I still do not have enough information to determine the ages".

Alok admits that Shyam can not guess and gives him the third hint

3) The oldest girl likes strawberry ice cream.

Shyam is able to guess after the third hint. Can you guess what are the ages of the three daughters?

Answer:

1) Product of ages is 72

Below are all possibilities to get 72 from product of three different ages:

$$1 * 1 * 72 = 72$$

$$1 * 2 * 36 = 72$$

$$1 * 3 * 24 = 72$$

$$1 * 4 * 18 = 72.$$

$$1 * 6 * 12 = 72$$

$$1 * 8 * 9 = 72$$

$$2 * 2 * 18 = 72$$

$$2 * 3 * 12 = 72$$

$$2 * 4 * 9 = 72$$

$$2 * 6 * 6 = 72$$

$$3 * 3 * 8 = 72$$

$$3 * 4 * 6 = 72$$

2) Sum of the ages is given

$$1 + 1 + 72 = 74$$

$$1 + 2 + 36 = 39$$

$$1 + 3 + 24 = 28$$

$$1 + 4 + 18 = 23$$

$$1 + 6 + 12 = 19$$

$$1 + 8 + 9 = 18$$

$$2 + 2 + 18 = 22$$

$$2 + 3 + 12 = 17$$

$$2 + 4 + 9 = 15$$

$$2 + 6 + 6 = 14$$

$$3 + 3 + 8 = 14$$

$$3 + 4 + 6 = 13$$

All sums are unique except 14. So the age sum must have been 14, otherwise, Shyam would have guessed the ages from hint 2 only.

So we have two possible combinations to get a sum of 14: $2 + 6 + 6 = 14$

$$3 + 3 + 8 = 14$$

3) Alok has the oldest girl (not two!!). So the ages must be 3, 3 and 8.

5G NETWORK

INTRODUCTION

5G is the 5th generation mobile network. It is a new global wireless standard after 1G, 2G, 3G, and 4G networks. 5G enables a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices.

5G wireless technology is meant to deliver higher multi-Gbps peak data speeds, ultra low latency, more reliability, massive network capacity, increased availability, and a more uniform user experience to more users. Higher performance and improved efficiency empower new user experiences and connects new industries.

5G technology has a theoretical peak speed of 20 Gbps, while the peak speed of 4G is only 1 Gbps. 5G also promises lower latency, which can improve the performance of business applications as well as other digital experiences (such as online gaming, videoconferencing, and self-driving cars).

The 5G network will also simplify mobility, with seamless open roaming capabilities between cellular and Wi-Fi access. Mobile users can stay connected as they move between outdoor wireless connections and wireless networks inside buildings without user intervention or the need for users to reauthenticate.

REAL WORLD IMPACT OF THIS NETWORK?

5G technology will not only usher in a new era of improved network performance and speed but also new connected experiences for users.

In healthcare, 5G technology and Wi-Fi 6 connectivity will enable patients to be monitored via connected devices that constantly deliver data on key health indicators, such as heart rate and blood pressure. In the auto industry, 5G

combined with ML- driven algorithms will provide information on traffic, accidents, and more; vehicles will be able to share information with other vehicles and entities on roadways, such as traffic lights. These are just two industry applications of 5G technology that can enable better, safer experiences for users.

HOW 5G IS BETTER THAN 4G?

There are several reasons that 5G will be better than 4G:

- 5G is significantly faster than 4G.
- 5G has more capacity than 4G.
- 5G has significantly lower latency than 4G.
- 5G is a unified platform that is more capable than 4G.
- 5G uses spectrum better than 4G.

GENERATIONS OF NETWORK

First Generation (1G):First generation mobile networks were reliant upon analogue radio systems which meant that users could only make phone calls, they couldn't send or receive text messages. This network was unreliable and had some security issues.

Second Generation (2G):The 1G network was not perfect, but it remained until remained until 1991 when it was replaced with 2G. This new mobile network ran on digital signal, not analogue, which vastly improved its security but also its capacity. On 2G, users could send SMS and MMS messages (although slowly and often without success) and when GPRS was introduced in 1997, users could receive and send emails on the move.

Third Generation (3G): Third generation mobile networks are still in use today, but normally when the superior 4G signal fails.

In comparison to 2G, 3G was much faster and could transmit greater amounts of data. This means that users could video call, share files, surf the internet, watch TV online and play online games on their mobiles for the first time. Under 3G, cell-phones were no longer just about calling and texting, they were the hub of social connectivity.

Fourth Generation (4G):

The introduction of 4G went one step further than the revolutionary 3G. It's five times faster than the 3G network – and can in theory provide speeds of up to 100Mbps. All mobile models released from 2013 onwards should support this network, which can offer connectivity for tablets and laptops as well as smartphones. Under 4G, users can experience better latency (less buffering), higher voice quality, easy access to instant messaging services and social media, quality streaming and make faster downloads.

Submitted by,

Ramya.B

Vishnu Priya.S

WHY ARTIFICIAL INTELLIGENCE ISN'T A SURE THING TO INCREASE PRODUCTIVITY??

Thinking about the fast-approaching era of artificial intelligence, employers rejoice in the increases to productivity such tools could bring, while workers are more likely to calculate the time left before R2-D2 takes over their jobs. In the future, 50 percent of all tasks currently done by humans could be done by machine learning and artificial intelligence,” Overall, that could translate into a bump in global productivity by 1 percent or more.



But it turns out that long before robots *replace* workers if ever, workers will be *using* AI-based tools to do work, as is already seen with radiologists who employ such tools to interpret X-rays and lawyers who turn to machine learning to dig out pastcases that set a precedent for legal arguments.

“If someone’s past experience has been entirely in the world of older technology, and suddenly a machine learning tool is thrust upon them, they will be less productive”.

Companies such as Microsoft, Infosys, and McKinsey to analyze what makes knowledge workers most productive. A few years ago, he began looking at the United States Patent and Trademark Office (USPTO), which has used innovative practices around employees working remotely.

The reality is that many companies are already adopting AI technology in the hopes that it will improve productivity. Yet “in the vast majority of situations, it will be used by people without computer science experience.”

WHY SHOULD WE INCREASE OUR PRODUCTIVITY?

According to Jacques Bogin, director of the Global Institute McKinsey, half of all cases that today are in the competence of people in the future can be performed using artificial intelligence, which can lead to an increasing in global productivity by 1 percent or more. And many business leaders generally believe that artificial intelligence can completely replace human intelligence due to the fact that in recent years, companies have begun to introduce AI tools to improve the efficiency of business processes.

The belief that AI can replace the human mind is based on the fact that AI has learned to perform even such creative tasks as compose music, write poetry like themes in Shakespeares, draw, photograph and even masterly bluff.

For example, in Goldman Sachs at the beginning of the year, 600 traders were replaced by two employees and automated algorithmic trading programs. However, at the same time, the company management had to hire 200 software developers to maintain the systems. According to this logic, according to the survey, two-thirds of respondents expect new jobs created by AI to compensate or surpass the number of jobs that will disappear as a result of its implementation.

BENEFITS OF AI

Improving the efficiency of the company's performance is becoming an increasingly important condition for success because companies often lack a highly qualified staff who are highly appreciated in the labor market. To improve the efficiency of the company's performance is possible in various ways. From a technological point of view, artificial intelligence and machine learning (a type of AI) allow conducting advanced training programs that help people to quickly adapt to constant changes in the workplace, which generally leads to increased productivity, which, of course, modern employers can not but rejoice.



CONCLUSION

AI, computer-based intelligent devices that can think for themselves, reflect on their actions, and communicate with others, is now a reality. A robot can learn to move in complicated ways through trial and error. Leaders should focus on their people, motivate them, facilitate their development and inspire them, so they stay involved and innovative. A.I. may be a powerful technology, but nothing will get better by simply adding A.I. to anything.

Submitted by,
Samuel A
III – IT

SENTIMENT ANALYSIS

Sentiment analysis, also referred to as opinion mining, is an approach to natural language processing (NLP) that identifies the emotional tone behind a body of text. This is a popular way for organizations to determine and categorize opinions about a product, service or idea. Sentiment analysis involves the use of data mining, machine learning (ML), artificial intelligence and computational linguistics to mine text for sentiment and subjective information such as whether it is expressing positive, negative or neutral feelings.

Why Is Sentiment Analysis Important?

Since humans express their thoughts and feelings more openly than ever before, sentiment analysis is fast becoming an essential tool to monitor and understand sentiment in all types of data. Automatically analyzing customer feedback, such as opinions in survey responses and social media conversations, allows brands to learn what makes customers happy or frustrated, so that they can tailor products and services to meet their customers' needs.

For example, using sentiment analysis to automatically analyze 4,000+ open-ended responses in your customer satisfaction surveys could help you discover why customers are happy or unhappy at each stage of the customer journey. Maybe you want to track brand sentiment so you can detect disgruntled customers immediately and respond as soon as possible. Maybe you want to compare sentiment from one quarter to the next to see if you need to take action. Then you could dig deeper into your qualitative data to see why sentiment is falling or rising.

Submitted by,

Shamabanu (234035)

Shameena Banu S (234036).

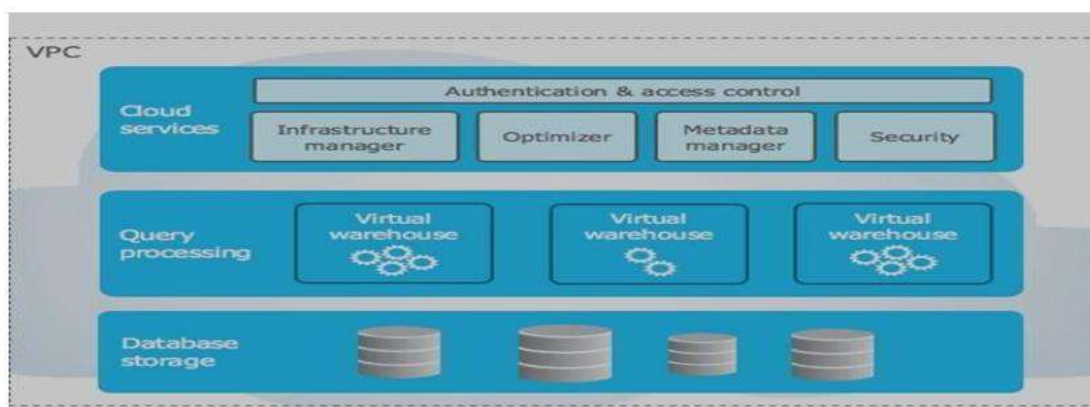
SNOWFLAKE

Snowflake is a cloud-based data warehouse solution that is gaining traction among businesses. It allows you to store and analyze data scalable and cost-effective. Businesses that work with huge data are particularly fond of this technology.

Snowflake is a true self-managed service, meaning: There is no hardware (virtual or physical) to select, install, configure, or manage. There is virtually no software to install, configure, or manage. Ongoing maintenance, management, upgrades, and tuning are handled by Snowflake.

SNOWFLAKE ARCHITECTURE

Snowflake's architecture is a hybrid of traditional shared-disk and shared-nothing database architectures. Similar to shared-disk architectures, Snowflake uses a central data repository for persisted data that is accessible from all compute nodes in the platform. But similar to shared-nothing architectures, Snowflake processes queries using MPP (massively parallel processing) compute clusters where each node in the cluster stores a portion of the entire data set locally. This approach offers the data management simplicity of a shared-disk architecture, but with the performance and scale-out benefits of a shared-nothing architecture.



DATABASE STORAGE

When data is loaded into Snowflake, Snowflake reorganizes that data into its internal optimized, compressed, columnar format. Snowflake stores this optimized data in cloud storage.

Snowflake manages all aspects of how this data is stored — the organization, file size, structure, compression, metadata, statistics, and other aspects of data storage are handled by Snowflake. The data objects stored by Snowflake are not directly visible nor accessible by customers; they are only accessible through SQL query operations run using Snowflake.

QUERY PROCESSING

Query execution is performed in the processing layer. Snowflake processes queries using “virtual warehouses”. Each virtual warehouse is an MPP compute cluster composed of multiple compute nodes allocated by Snowflake from a cloud provider.

Each virtual warehouse is an independent compute cluster that does not share compute resources with other virtual warehouses.

CLOUD SERVICES

The cloud services layer is a collection of services that coordinate activities across Snowflake. These services tie together all of the different components of Snowflake in order to process user requests, from login to query dispatch. The cloud services layer also runs on compute instances provisioned by Snowflake from the cloud provider.

Services managed by this layer include:

- 1) Authentication
- 2) Infrastructure Management

- 3) Metadata Management
- 4) Query Parsing and Optimization
- 5) Access Control

CONNECTING TO SNOWFLAKE

Snowflake supports multiple ways of connecting to the service:

- 1) Web-based user interface from which all aspects of managing and using Snowflake can be accessed.
- 2) Command line clients (e.g. SnowSQL) which can also access all aspects of managing and using Snowflake.
- 3) DBC and JDBC drivers that can be used by other applications (e.g. Tableau) to connect to Snowflake.

Native connectors (e.g. Python, Spark) that can be used to develop applications for connecting to Snowflake.

Submitted by,
Pragadeesh Ram
III-IT.

COMPUTER SCIENCE KNOWLEDGE QUIZ

- 1.State the two items that are stored in the RAM?
2. What type of testing is completed during the implementation stage of programming?
3. What does 'Quad-Core' mean?
- 4.Characteristics that should be considered when comparing storage types.
- 5.State two network topologies.
6. What is a light pen?
- 7.UNIVAC is?
- 8.Father of Computer?
- 9.First computers were programmed using?
- 10.Coded entries which are used to gain access to a computer system is called?

Answers:

- 1.Application software currently in use and operating software
- 2.Iterative Testing
- 3.4 cores, meaning 4 instructions can be passed through the CPU simultaneously.
- 4.Probability, Durability, Reliability, Cost, Speed, Capacity, Physical Size.
- 5.Star and Mesh.
- 6.Optical Input Device
- 7.Universal Automatic Computer
- 8.Charles Babbage
- 9.Machine language
- 10.Passwords.

Submitted by,
JOANNE PRANITA G
244021(II-IT).

AI IN SCIENCE AND ENGINEERING

Artificial Intelligence (AI) has become one of the most rapidly evolving fields of technology, promising to revolutionize the way we live and work. AI is the science and engineering of making intelligent machines that can learn, reason, and act like humans. The development of AI is progressing rapidly, with numerous applications across industries, from healthcare to finance, from education to entertainment.



AI technologies are based on the principles of machine learning, deep learning, and natural language processing. These technologies are used to build algorithms and models that can analyze large volumes of data, identify patterns, and make predictions. AI systems are becoming increasingly sophisticated, capable of performing complex tasks that were previously only possible for humans.

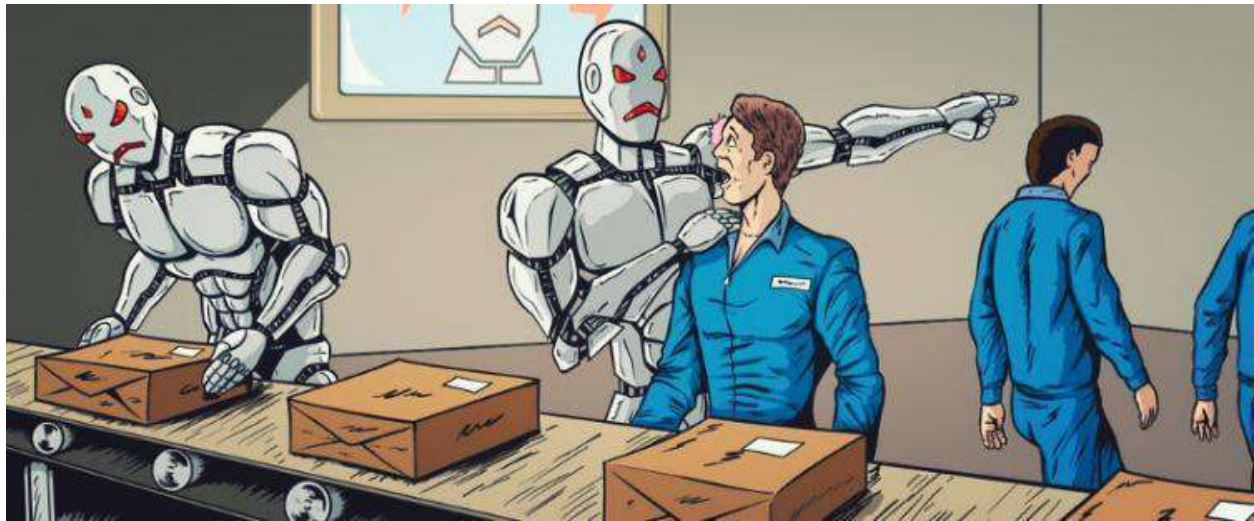
One of the most exciting areas of AI development is the development of autonomous systems. These systems can operate independently and make decisions without human intervention. Examples of autonomous systems include self-driving cars, drones, and robots. These systems are becoming increasingly advanced and are being used in a range of industries, from transportation to manufacturing.



AI is also transforming the healthcare industry. AI systems can analyze large volumes of medical data to identify patterns and predict outcomes. This can lead to earlier diagnosis, more personalized treatment, and improved patient outcomes. AI is also being used to develop new drugs and therapies, with the potential to revolutionize the treatment of many diseases.

In finance, AI is being used to analyze financial data and identify patterns that can be used to make better investment decisions. AI-powered trading systems are becoming increasingly common, with the potential to outperform human traders. AI is also being used to detect fraud and improve risk management in the financial sector.

AI is also being used in education to personalize learning and improve student outcomes. AI-powered learning systems can analyze student data to identify areas where students are struggling and provide personalized feedback and support. This can lead to improved student engagement and academic performance.



Despite the many benefits of AI, there are also concerns about its impact on society. One of the biggest concerns is the potential for AI to automate jobs, leading to widespread job losses. There are also concerns about the use of AI in surveillance and the potential for AI-powered weapons to be used in warfare.

In conclusion, AI is a rapidly evolving field with enormous potential to transform the way we live and work. AI-powered systems are becoming increasingly sophisticated and are being used in a wide range of industries. While there are concerns about the impact of AI on society, it is clear that AI has the potential to bring significant benefits and improve our lives in countless ways. It is important that we continue to explore the potential of AI while also addressing the challenges and risks associated with this technology.

SUBMITTED BY:

- V. Madhumita (244028)

2nd Year-Information Technology

AUTONOMOUS DRIVING USING MACHINE LEARNING

INTRODUCTION:

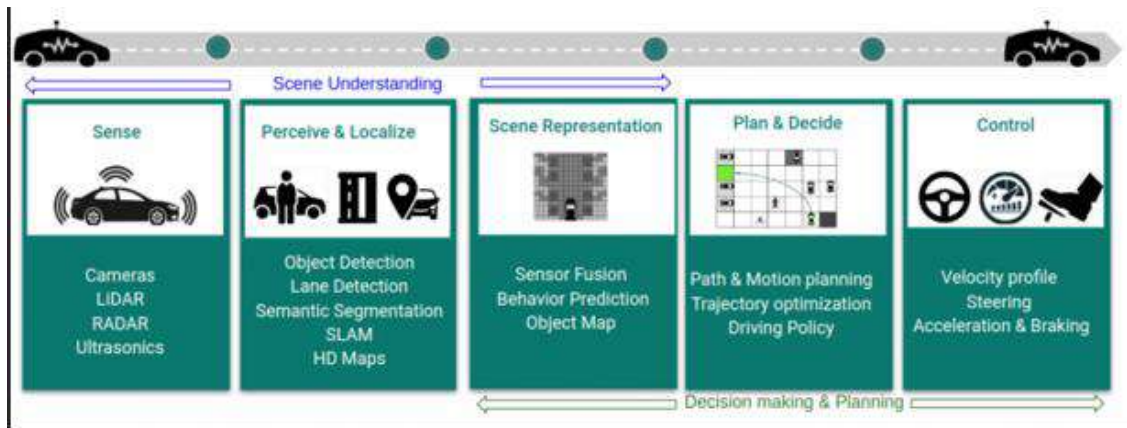
Autonomous vehicles, also known as self-driving cars are type of vehicle that can operate without human intervention. They are equipped with a variety of sensors, including cameras, LiDAR, radar, and GPS, which allow them to navigate and respond to their environment in real-time.

Machine learning plays a critical role in autonomous vehicles, enabling the car to learn and adapt to its environment, making decisions based on sensor data and historical driving data. Machine learning algorithms can identify patterns in data and use them to make predictions about the environment, which is crucial for autonomous vehicles to operate safely.

By the end, you should have a better understanding of how machine learning is used in autonomous vehicles, and the potential benefits and challenges of this technology.

HISTORY

- 1930'S-Self driving cars predicted (for 1960's).
- 2005-Stanford wins DARPA Grand Challenge (#2).
- 2011-Nevada became the first state to legalize autonomous cars.
- 2015-Autonomous cars capable for racing?



GOOGLE'S APPROACH:

“BUILD AN AI, WRAP A CAR AROUND IT”

- High precision
- Google uses a 64-beam LIDAR system to place itself within 10cm on a detailed pre-existing map.
- Build a 360-degree view that tracks predict movement for all nearby vehicle pedestrians and all obstacles.
- Self-driven more than 1.5 million miles.

The self-driving car's sensors

Just like a person has five senses, Google's self-driving car has a variety of gadgets that detect nearby objects so it can avoid them.

- Global Positioning System software** Helps car determine its location.
- Position sensor** Located in the wheel hub, this sensor helps determine car's location from wheel rotations.
- Radar** Measures speed of cars ahead.
- Laser** Provides a 360-degree view around the car and helps determine its location.
- Microphone** Can detect sounds of approaching emergency vehicles.
- Videocams** With one on each of the car's four corners and another on its roof, they help the car recognize objects around it.
- Orientation sensor** Located in car's interior, it acts like the car's inner ear, sensing motion and balance.

HOW GOOGLE DRIVERLESS WORKS

Primarily based on LIDAR.

How the car operates

- Any object the vehicle's sensors spot is interpreted by software to determine if it's a pedestrian, cyclist, vehicle or something else.
- Using what it's learned from previous driving, the software makes predictions about what objects will do next.
- The software analyzes the information to decide whether it is safe to accelerate, turn or hit the brakes.

SOURCE: Google
IMAGES: Future News Service

How the car sees the world

This computerized image is what Google researchers monitoring sensor data see as they ride in the vehicle.

- Other vehicle
- Pedestrian
- Cyclist
- Objects that warrant caution
- A crosswalk, indicating the car needs to stop
- A traffic signal, warning of upcoming railroad tracks
- Path where Google's car intends to go

dallasnews.com/business/headlines/2015/09-2-vision-emerge-for-getting-self-driving-cars-on-road.ice
google.com/selfdrivingcar

10x

TESLAS APPROCH:

“BUILD A CAR, PLUG AN AI INTO IT”

- Good enough precision.
- More than 100 miles on autopilot.



PROS	CONS
<p>Eliminate human error.</p> <p>Economic benefits.</p> <p>Accessibility those who cannot drive.</p>	<p>Technology can go wrong.</p> <p>Extremely expensive.</p> <p>Eliminate numerous jobs.</p>

Environment friendly	Negative impact on the environment
Easier to who those hate driving	Loss of privacy

CONCLUSION:

In conclusion, autonomous vehicles using machine learning is a rapidly evolving technology with significant potential benefits for transportation and mobility. The use of machine learning in autonomous vehicles enables these vehicles to learn from their environment and adapt in real-time to changing road conditions and traffic patterns, which can ultimately lead to safer and more efficient transportation.

However, there are also several challenges and limitations to this technology, including the need for extensive testing and validation, concerns around cybersecurity and data privacy, and the potential impact on employment in the transportation sector. As this technology continues to develop, it will be important to address these challenges and limitations to ensure that autonomous vehicles are safe, reliable, and accessible to all.

Overall, the development of autonomous vehicles using machine learning represents an exciting opportunity to transform the way we think about transportation, and it will be important to continue to monitor and advance this technology in the years to come.

SUBMITTED BY:
D.SARAVANAKKUMAR
2ND YEAR IT

BRAIN COMPUTER INTERFACE



What is BCI

A Brain Computer Interface (BCI) is a computer-based system that collects brain signals with help of certain specialized electrodes, analyze them, and translated them into commands that are imparted into output devices to perform the desired actions.

Types of BCIs :

The three main techniques using which we can measure brain signals :

1. Non-invasive :

In non-invasive method, the detection of brain signals is achieved through electrodes placed on the scalp. There are certain interfacing components such as EEG (electroencephalography), MEG (magnetoencephalography), or MRT (magnetic resonance tomography). Non invasive is identified as the safest and low-cost type of devices. However, these devices can only capture “weaker” human brain signals due to the obstruction of the skull.

2. Semi-Invasive:

In Semi-invasive, devices are inserted into the skull on the top of the human brain. It adapts a device called Electrocorticography, which uses electrodes placed on the exposed surface of the brain to measure electrical activity from the cerebral cortex. When compared non-invasive, semi-invasive can provide a spatial resolution and signal fidelity, resistance to noise with lower clinical risk

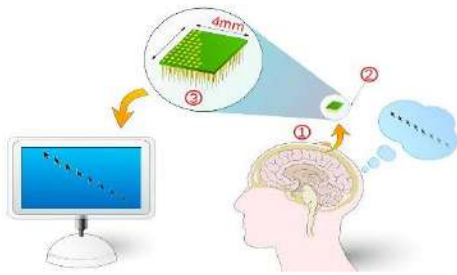
3. Invasive:

In Invasive method, the BCI devices are directly implanted into the brain during the neuro. There are **single unit** BCIs, which detect the signal from a single area of brain cells and **multi-unit** BCIs which detect from multiple areas. The quality of the signal produced can be the highest, but the procedure has several risk factors like forming scar tissues. Because neurosurgery can be a risky and expensive process, the need and vitalness of invasive BCI are mainly towards blind and paralyzed patients.

Components of BCI:

The main role of a BCI is to acquire, process and translate the signal as commands of the user's intentions, in order to accomplish this task BCI system comprises the following four sequential components.

- 1) Signal Acquisition
- 2) Feature Extraction
- 3) Feature Translation
- 4) Device Output



1) Signal Acquisition

Signal Acquisition is the process of measuring brain signal using a particular signal modality. The signals are then allowed to remove electrical noise factors and undesirable signal characteristics. Then the signals are converted from an analog form to digital signals and transmitted to a computer.

2) Feature Extraction

At Feature Extraction, analyzing of digital signals takes place in order to distinguish them from pertinent signal characteristics from extraneous content and then it needs to representing in a compact form, which makes it suitable for translation into output commands. These features should have strong correlations with the user's intent, because much of the relevant brain activity is either transient or oscillatory. Environmental and physiologic artifacts such as electromyographic are removed for ensuring a accurate measure of brain signal features.

3) Feature Translation

In Feature Translation, the resulting signal features are then passed to the feature translation algorithm, which converts the features into the appropriate commands for the output device. The translation algorithm should be dynamic to accommodate and adapt to spontaneous or learned changes in the signal features and to ensure that the user's possible range of feature values covers the full range of device control.

4) Device Output

The commands from the feature translation algorithm operate the external device, providing functions such as letter selection, cursor control, robotic arm operation, and so on.

BCI Applications:

The most vital and interesting areas of BCI research are , building devices that can be controlled by thoughts. BCI technology can be adapted in devices which would assist disabled people in getting work done independently

A major task is interpreting brain signals of persons who couldn't perform movements on their own. In such cases, the subject must be made to watch certain action performed, so the implanted electrodes can collect the signals thus produced on every particular action and also software will also be trained to such signals and will be able to differentiate for accomplishing the users action. At the one point of time, if the user wishes to close his hand, the corresponding signals are received, interpreted and the robotic limbs may close the hand.

A similar method can be adopted to manipulate a computer cursor, with the subject thinking about forward, left, right and back movements of the cursor.

With sufficient practice, users can also control over a cursor to draw a circle, access computer programs and control a TV. It could theoretically be expanded to allow users to "type" with their thoughts.

Conclusion

The BCI systems use different brain signals, recording methods, and signal-processing algorithms and can operate on many different devices ranging from cursors on computer screens to wheelchairs to robotic arms. A few people with severe disabilities are already using a BCI for basic communication and control in their daily lives. With better signal-acquisition hardware, clear clinical validation, viable dissemination models, and, probably most important, increased reliability, BCIs may become a major new communication and control technology for people with disabilities.

SUBMITTED BY,
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NAVEENKUMAR.S

Third Year - IT

C# CODE SNIPPETS

Predict the output of the following snippets:

1. using System:

```
public class Program
{
    public static void Main()
    {
        int[] arr = { 1, 2, 3 };
        int i = 1;
        arr[i++] = arr[i] + 10;
        Console.WriteLine(String.Join(",", arr));
    }
}
```

- a) 1,13,3
- b) 1,2,3
- c) 11,12,13
- d) 10,20,30

Ans: Option – a

2. using System:

```
class Program
{
```

```

public static void Main()
{
    string str1 = "\U0010FADE";
    string str2 = "\U0000FADE";
    Console.WriteLine(str1.Length);
    Console.WriteLine(str2.Length);
}
}

```

a) 9

9

b) 10

10

c) 2

1

d) 1

0

Ans: Option – c

3. using System:

```

public class Program
{
    public static void Main(string[] args)
    {
        Console.WriteLine("H" + 'T');
        Console.WriteLine('h' + 'i');
    }
}

```

```
    }
}
```

a) HI

hi

b) 145

209

c) HI

209

d) 145

hi

Ans: Option – c

4. using System:

```
public class Program
{
    public static void Main(string[] args)
    {
        int[] i = new int[0];
        Console.WriteLine(i[0]);
    }
}
```

a) 0

b) IndexOutOfRangeException

c) Nothing is printed as array is empty

d) 1

Ans: Option – b

5. using System;

```
public class Program
```

```
{
```

```
    public static void Main(string[] args)
```

```
    {
```

```
        int num1 = 20;
```

```
        int num2 = 30;
```

```
        num1 ^= num2 ^= num1 ^= num2;
```

```
        Console.WriteLine(num1 + "," + num2);
```

```
    }
```

```
}
```

a) 20,30

b) 10,50

c) 20,10

d) 0,20

Ans: Option – d

6. using System:

```
public class Program
```

```
{
```

```
    public static void Main(string[] args)
```

```

    {
        bool a = true;
        bool b = false;
        a ^= b;
        Console.WriteLine(a);
        Console.ReadLine();
    }
}

```

- a) True
- b) False
- c) Null
- d) Error

Ans: Option – a

7. using System:

```

public class Program
{
    public static void Main(string[] args)
    {
        Program p = new Program();
        p.print(2, 3, 8);
        int[] arr = { 2, 11, 15, 20 };
        p.print(arr);
        Console.ReadLine();
    }
}

```

```

public void print(params int[] b)
{
    foreach (int i in b)
    {
        Console.WriteLine(i);
    }
}

```

a) 2 3 8

2 11 15 20

b) 2 3 8 11 15 20

c) 2 11 15 20

d) Error

Ans: Option – a

8. using System:

```

public class Program
{
    public static void Main(string[] args)
    {
        int val = (byte)+(char)-(int)+(long)-2;
        Console.WriteLine(val);
    }
}

```

a) Error

b) -2

c) 2

d) 0

Ans: Option – c

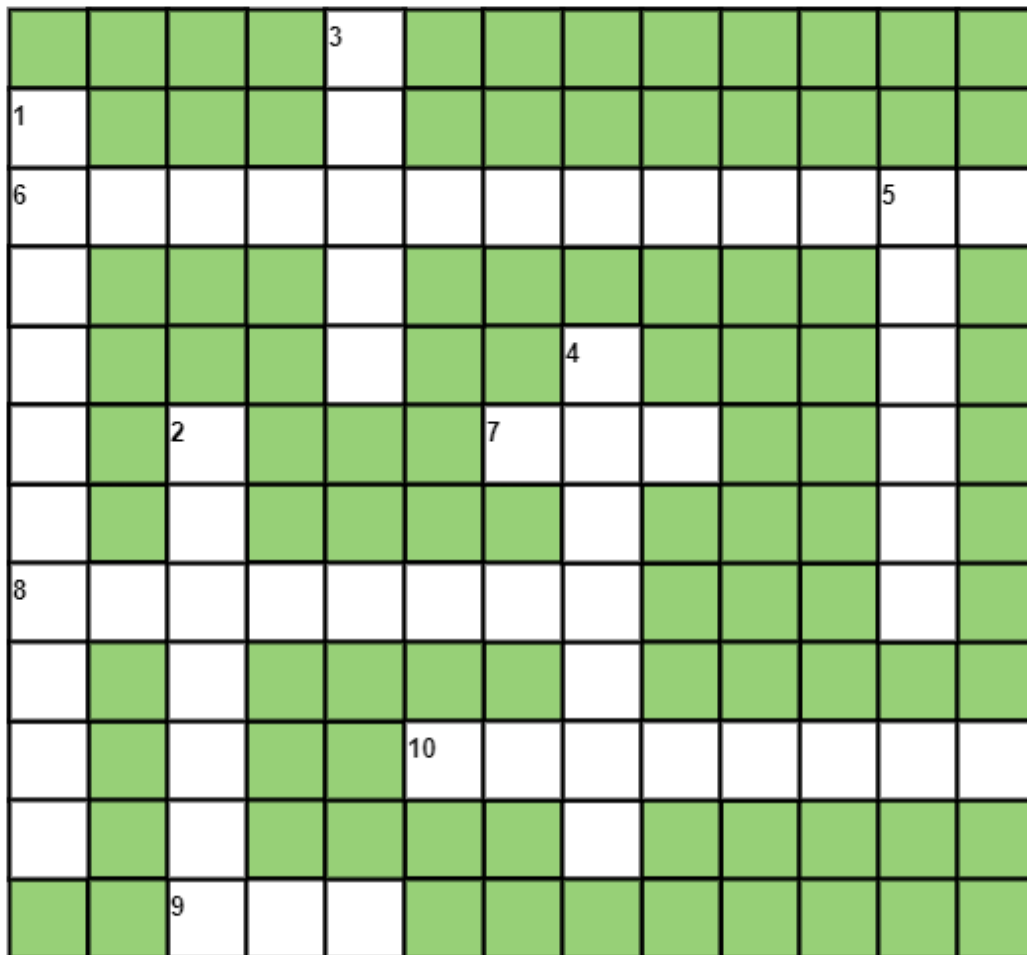
SUBMITTED,

SHAMABANU

234035 – III IT

CROSSWORD #1 : OPERATING SYSTEM

Crossword Puzzle #5



HINTS:

DOWN:

1. Part of the operating system which is responsible for file management.
2. A _____ is a running program that serves as the foundation for all computation.
3. The _____ time is the total time that a process requires for its overall execution.
4. The executable file which gets created.
5. Within a program, a _____ is a separate execution path

ACROSS:

6. what refers to the ability of users to interact with a computer system.
7. _____ algorithm is a Greedy algorithm where the page to be replaced is least recently used
8. _____ works like a typical request queue where data, instructions and processes from multiple sources are accumulated for execution later on.
9. In _____ scheduling, the process with the lowest burst time, among the list of available processes in the ready queue, is going to be scheduled next.
10. _____ is a process of swapping a process temporarily to a secondary memory from the main memory which is fast than compared to secondary memory.

ANSWER:

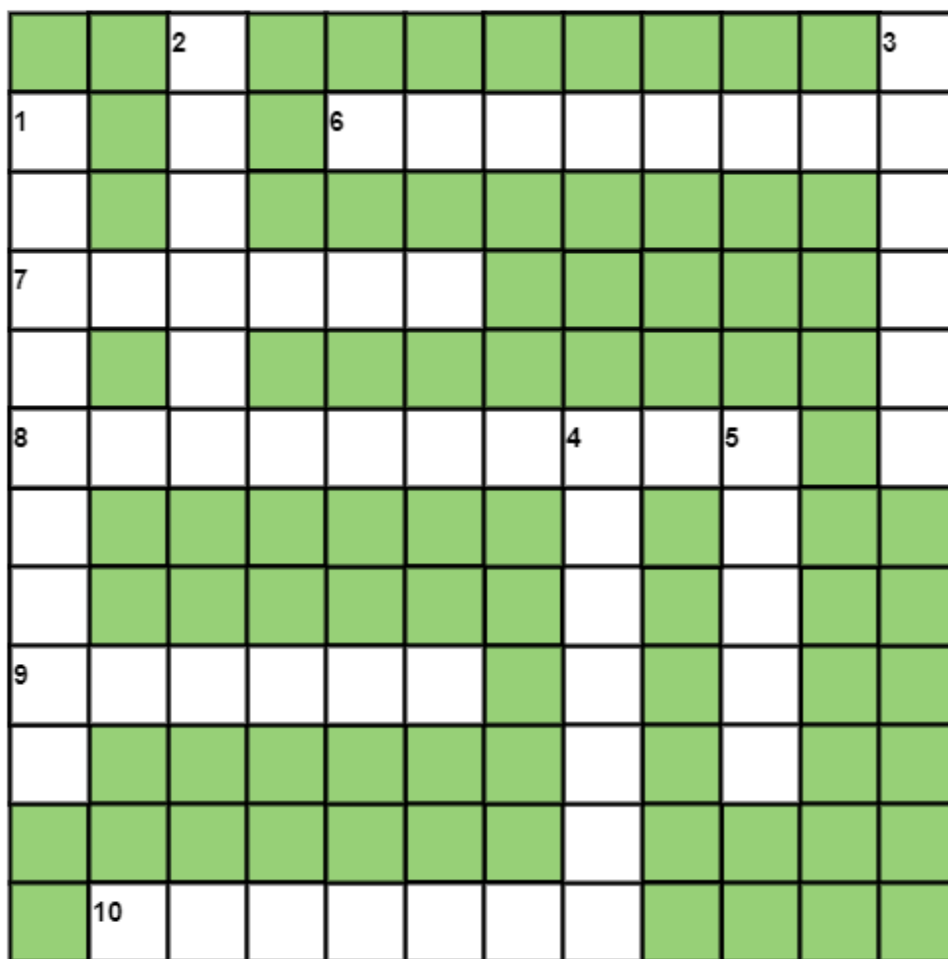
Crossword Puzzle #5

				B									
F				U									
I	N	T	E	R	A	C	T	I	V	I	T	Y	
L				S							H		
E				T			P				R		
S		P				L	R	U			E		
Y		R					O				A		
S	P	O	O	L	I	N	G				D		
T		C					R						
E		E			S	W	A	P	P	I	N	G	
M		S					M						
		S	J	F									



CROSSWORD #2 : Database and Queries

Crossword Puzzle #3



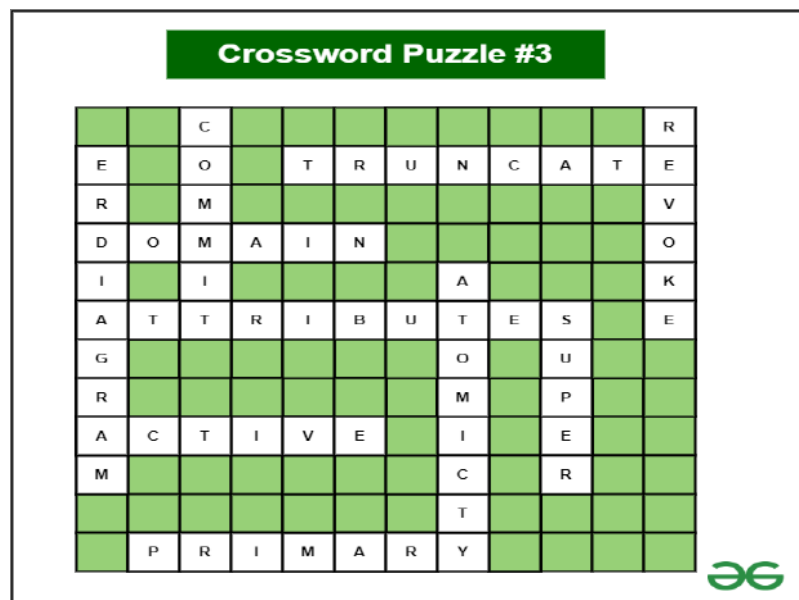
HINTS:

DOWN:

1. _____ gives a logical structure of the database graphically?
2. _____ is the SQL command that is used for storing changes performed by a transaction.
3. _____ withdraw users' access privileges given by using the GRANT command?
4. _____ means that multiple operations can be grouped into a single logical entity.
5. _____ key identifies each tuple uniquely in the given relation.

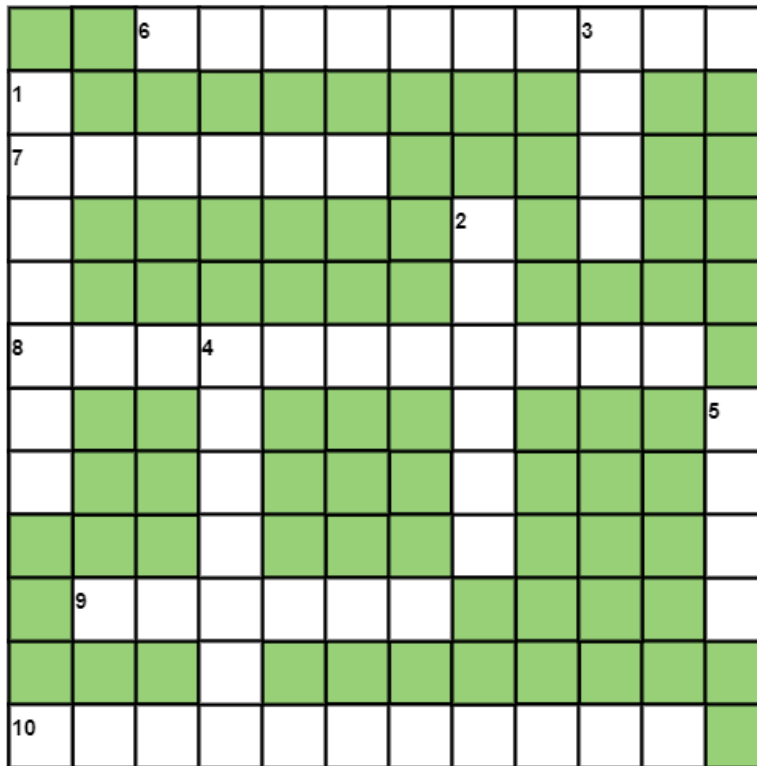
ACROSS:

6. _____ removes all records from a table, including all spaces allocated for the records are removed.
7. _____ are data types definitions that resolves to a primitive data type.
8. _____ are changeable property or characteristics of some component of a program that can be set to different values.
9. _____ state is first state in the life cycle of a transaction.
10. A _____ Key is basically a Column or Columns.



CROSSWORD #3 : Object Oriented Programming

Crossword Puzzle #4



HINTS:

DOWN

1. The class members declared as _____ can be accessed only by the member functions inside the class
2. A _____ is a collection of statements that perform some specific task and return the result to the caller.

3. The _____ pointer is passed as a hidden argument to all non-static member function calls and is available as a local variable within the body of all non-static functions.
4. In _____ polymorphism, the compiler resolves the object at run time, and then it decides which function call should be associated with that object.
5. The class _____ is surrounded by braces, { }.

ACROSS

6. _____ is an instance member function which is invoked automatically whenever an object is going to be destroyed
7. The _____ statement returns the flow of the execution to the function from where it is called.
8. An _____ is a collection, or the gathering of things together.
9. _____ function can be granted special access to private and protected members of a class in C++.
10. The capability of a class to derive properties and characteristics from another class is called _____ .

ANSWER:

Crossword Puzzle #4

		D	E	S	T	R	U	C	T	O	R
P									H		
R	E	T	U	R	N				I		
I							M		S		
V							E				
A	G	G	R	E	G	A	T	I	O	N	
T			U				H				B
E			N				O				O
			T				D				D
	F	R	I	E	N	D					Y
			M								
I	N	H	E	R	I	T	A	N	C	E	



SUMBITTED

ASWIN B 244004 IT

2ND YEAR

CYBER SECURITY (AN INTRODUCTION)

Cyber Security Introduction - Cyber Security Basics:

Cyber security is the most concerned matter as cyber threats and attacks are overgrowing. Attackers are now using more sophisticated techniques to target the systems. Individuals, small-scale businesses or large organization, are all being impacted. So, all these firms whether IT or non-IT firms have understood the importance of Cyber Security and focusing on adopting all possible measures to deal with cyber threats.

Each cybersecurity design makes key assumptions:

1. What is fully trusted, partially trusted, and what is not trusted
2. Who has access to what valued assets

The model enables governance frameworks to serve as more effective and applicable guidance for protecting the computing environment. These are implemented as

Security Policy → Security Model → People, Process, Technology.

Why do we need cybersecurity?

Components of information security:

- Computer Security
- Data Security
- Governance

Cybersecurity Governance :

- The typical driver for cybersecurity governance remains the prevention of fraud and abuse.
- Prevention of abuse and fraud have led to increased regulations, standards, and guidelines.
- Organizations now pay greater attention to governance, which has changed the dynamics of information security management.

Cyber security Fundamentals – Confidentiality:

Confidentiality is about preventing the disclosure of data to unauthorized parties.

Standard measures to establish confidentiality include:

- ☐ Data encryption
- ☐ Two-factor authentication
- ☐ Biometric verification
- ☐ Security tokens

Integrity

Integrity refers to protecting information from being modified by unauthorized parties.

Standard measures to guarantee integrity include:

- ☐ Cryptographic checksums
- ☐ Using file permissions
- ☐ Uninterrupted power supplies

Availability:

Availability is making sure that authorized parties are able to access the information when needed.

Standard measures to guarantee availability include:

- ☐ Backing up data to external drives
- ☐ Implementing firewalls
- ☐ Having backup power supplies
- ☐ Data redundancy

Key Concepts of Information security concepts :

- Access – A subject of objects ability to use, manipulate, modify, or affect another subject or object.
- Asset – The resources that are being protected - workstation, servers, and network devices.
- Attack – A intentional or unintentional act that can damage or compromise information systems.
- Control, Safeguard, or Countermeasure – The security mechanisms, policies, or procedures that

Three dimensions of the Cybersecurity Cube are :

Manage Protection

- Domains

- Internet
- Network

Information states include Transmission, storage, and processing. Critical Information Characteristics include confidentiality, integrity, and availability.

Security Measures include technology, policies and practice, and the education, training, and awareness of people.

Types of Cyber Attacks:

Cyber-attacks can be classified into the following categories:

- 1) Web-based attacks
- 2) System-based attacks

Web-based attacks:

These are the attacks which occur on a website or web applications.

System-based attacks / Software attacks:

These are the attacks which are intended to compromise a computer or a computer network.

Motive of Attackers:

1. Political motivations: examples include destroying, disrupting, or taking control of targets; espionage; and making political statements, protests, or retaliatory actions.

2. Economic motivations: examples include theft of intellectual property or other economically valuable assets (e.g., funds, credit card information); fraud; industrial espionage and sabotage; and blackmail.

3. Socio-cultural motivations: examples include attacks with philosophical, theological, political, and even humanitarian goals. Socio-cultural motivations also include fun, curiosity, and a desire for publicity or ego gratification.

Conclusion :

The only system which is truly secure is one which is switched off and unplugged.
So only way to be safe is pay attention and act smart .

SUBMITTED BY :

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2nd year

DIGITAL MARKETING

In today's fast-paced digital age, traditional marketing methods alone are no longer enough to meet the ever-changing needs of businesses. To remain competitive and relevant, businesses need to embrace digital marketing strategies that help them reach and engage with their target audiences online.

Digital marketing refers to the use of digital channels such as social media, email, search engines, and websites to promote products, services, and brands. It is an ever-evolving field that is driven by technology, creativity, and data-driven insights.



Digital marketing offers several advantages over traditional marketing methods. Firstly, it allows businesses to target specific audiences with precision, making it more cost-effective than traditional marketing methods. Secondly, it provides businesses with real-time insights into their campaigns' performance, enabling them to make data-driven decisions and optimize their strategies for better results.

Here are some key digital marketing strategies that businesses can adopt to achieve their marketing goals:

1. **Search Engine Optimization (SEO):** SEO involves optimizing your website and content to rank higher in search engine results pages (SERPs). By ranking higher in SERPs, businesses can increase their visibility and attract more traffic to their website.
2. **Pay-per-click (PPC) Advertising:** PPC advertising involves placing ads on search engines, social media, and other digital platforms. Advertisers only pay when users click on their ads, making it a cost-effective way to reach their target audience.
3. **Social Media Marketing:** Social media platforms like Facebook, Instagram, and Twitter provide businesses with an opportunity to engage with their target audience, build brand awareness, and drive traffic to their website.

4. Email Marketing: Email marketing involves sending promotional emails to subscribers who have opted-in to receive them. Email marketing is a powerful tool for building customer relationships and driving sales.

5. Content Marketing: Content marketing involves creating and sharing valuable, relevant, and engaging content that attracts and retains a clearly defined audience. This strategy can help businesses build brand awareness, generate leads, and drive sales.

6. Influencer Marketing: Influencer marketing involves partnering with social media influencers to promote products, services, or brands. This strategy can help businesses reach new audiences and build trust with their target audience.



In conclusion, digital marketing is a must-have for businesses looking to thrive in today's digital age. By adopting digital marketing strategies, businesses can reach and engage with their target audience, build brand awareness, and drive sales.

Whether you are a small business owner or a marketing professional, it's essential to stay up-to-date with the latest digital marketing trends and best practices to succeed in today's competitive business landscape.

SUBMITTED BY:

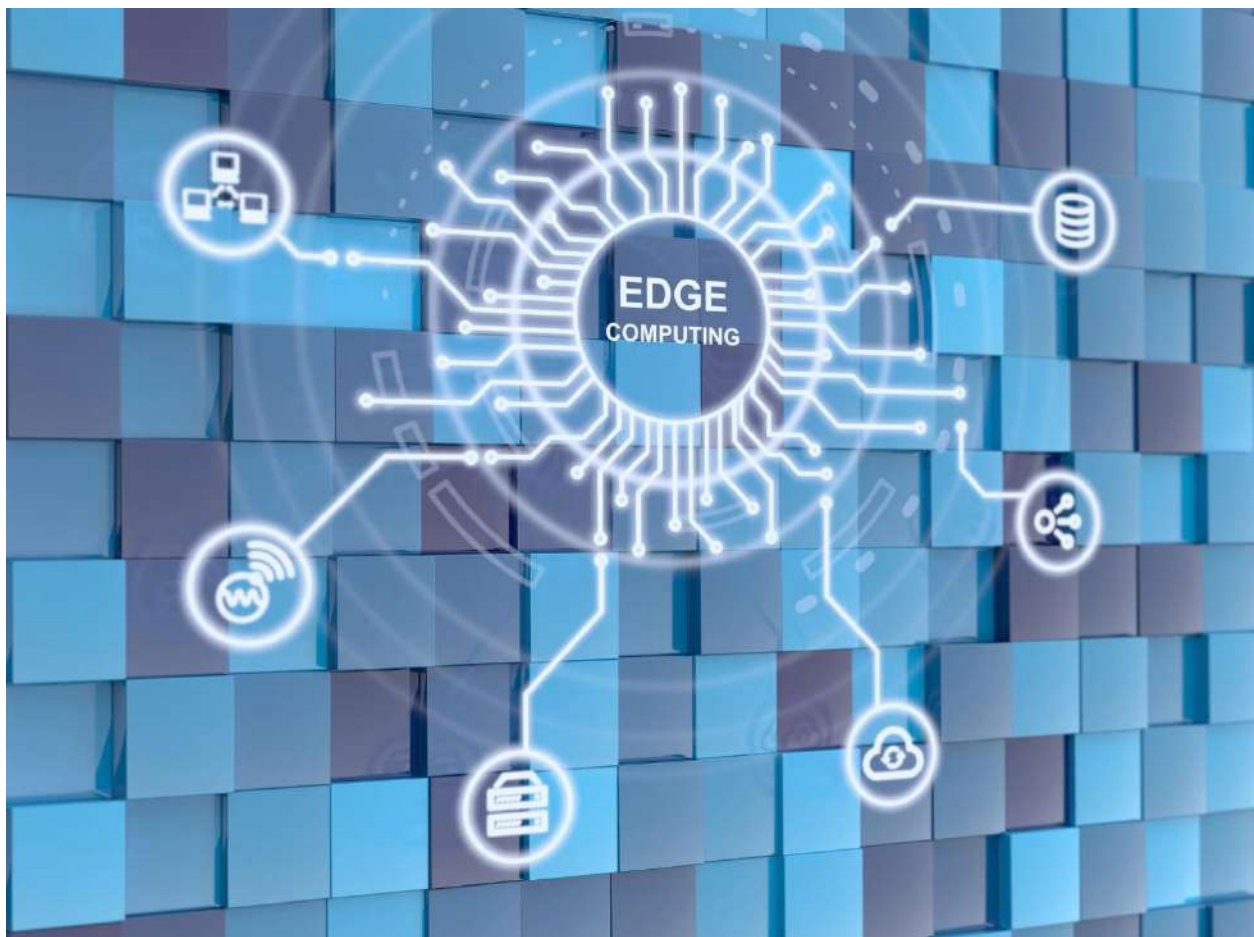
- C. Dharshana(244009)

IT 2nd Year

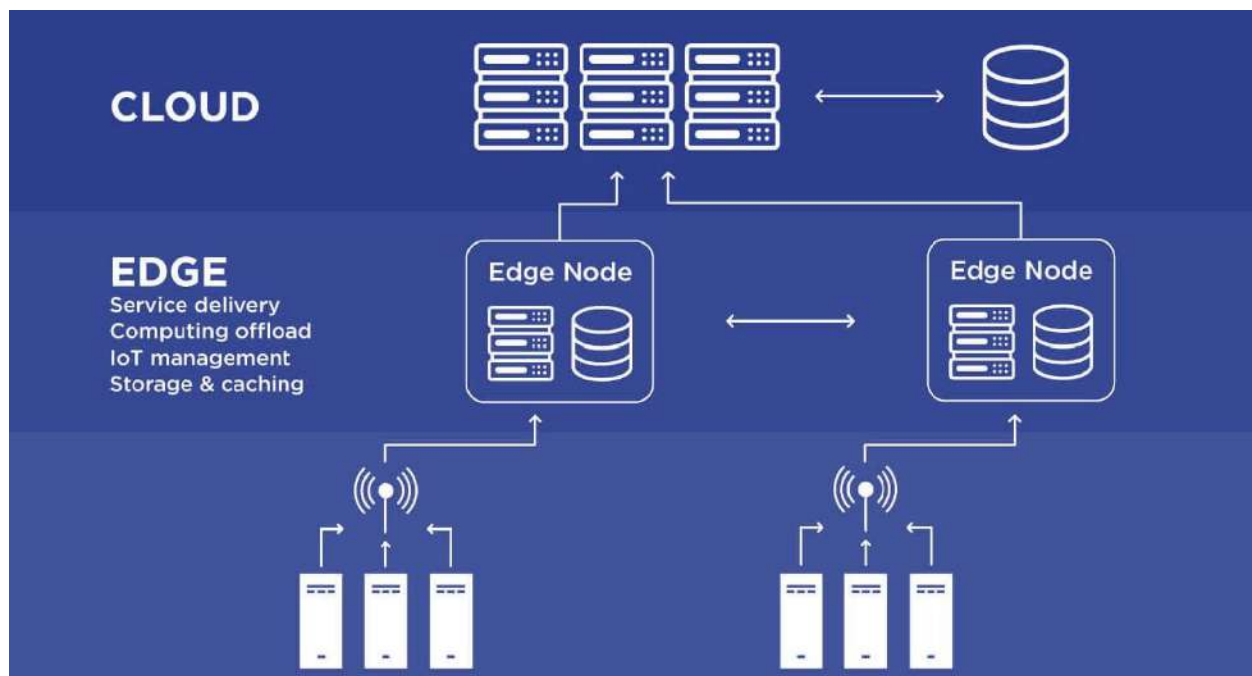
EDGE COMPUTING

Edge computing is a paradigm that brings computation and data storage closer to the location where it is needed. This approach reduces latency, improves response time, and enhances security by keeping sensitive data within a local network.

In recent years, edge computing has gained significant attention from researchers, practitioners, and businesses alike. The rise of IoT devices, autonomous vehicles, and smart cities has created a demand for real-time processing and analysis of large volumes of data at the edge of the network.



The world's data is expected to grow 61% to 175 zettabytes by 2025. According to research firm Gartner, around 10% of enterprise-generated data is created and processed outside a traditional centralized data center or cloud. By 2025, the firm predicts that this figure will reach 75%. The increase of IoT devices at the edge of the network is producing a massive amount of data - storing and using all that data in cloud data centers pushes network bandwidth requirements to the limit. Despite the improvements of network technology, data centers cannot guarantee acceptable transfer rates and response times, which, however, often is a critical requirement for many applications. Furthermore, devices at the edge constantly consume data coming from the cloud, forcing companies to decentralize data storage and service provisioning, leveraging physical proximity to the end user.

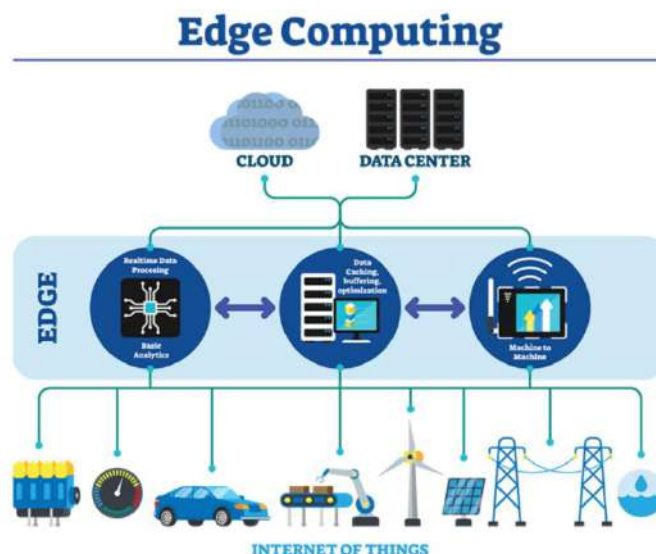


In a similar way, the aim of edge computing is to move the computation away from data centers towards the edge of the network, exploiting smart objects, mobile phones, or network gateways to perform tasks and provide services on behalf of the cloud. By moving services to the edge, it is possible to provide content caching, service delivery, persistent data storage, and IoT management resulting in better response times and transfer rates. At the same time, distributing the logic to different network nodes introduces new issues and challenges.

The distributed nature of this paradigm introduces a shift in security schemes used in cloud computing. In edge computing, data may travel between different distributed nodes connected through the internet and thus requires special encryption mechanisms independent of the cloud. Edge nodes may also be resource-constrained devices, limiting the choice in terms of security methods. Moreover, a shift from centralized top-down infrastructure to a decentralized trust model is required. On the other hand, by keeping and processing data at the edge, it is possible to increase privacy by minimizing the transmission of sensitive information to the cloud. Furthermore, the ownership of collected data shifts from service providers to end-users.

Scalability in a distributed network must face different issues. First, it must take into account the heterogeneity of the devices, having different performance and energy constraints, the highly dynamic condition, and the reliability of the connections compared to more robust infrastructure of cloud data centers. Moreover, security requirements may introduce further latency in the communication between nodes, which may slow down the scaling process.

The state-of-the-art scheduling technique can increase the effective utilization of edge resources and scales the edge server by assigning minimum edge resources to each offloaded task.



Edge computing brings analytical computational resources close to the end users and therefore can increase the responsiveness and throughput of applications. A well-designed edge platform would significantly outperform a traditional cloud-based system. Some applications rely on short response times, making edge computing a significantly more feasible option than cloud computing. Examples range from IoT to autonomous driving anything health or human / public safety relevant or involving human perception such as facial recognition, which typically takes a human between 370-620 ms to perform. Edge computing is more likely to be able to mimic the same perception speed as humans, which is useful in

applications such as augmented reality where the headset should preferably recognize who a person is at the same time as the wearer does.

SUBMITTED BY,

B.S.RAHUL

III YEAR IT,

FACTS ABOUT TECHNOLOGY

Human beings have done wonders with the progress of technology in the last century. Technology has put spectacular tools and resources in our hands to make our lives ever so convenient. New findings in the technical field are so frequent that it has become hard for many to catch up with the pace of inventions.

As fascinating as these technical wonders seem today, the stories behind them are even more interesting. Here are ten such amazing little-known facts about the technology we all use almost every day.

1. Amazon.com is not the original name of the website

Jeff Bezos tried several different names for his business before he finalized on Amazon. The very first name he registered was Cadabra Inc. After some feedback about the name being too obscure, the entrepreneur decided to change the name to something different.

Bezos registered his website with many other names before arriving at the current version — amazon.com — recognized worldwide.

Some of the earlier domain names were aard.com, awake.com, browse.com, bookmall.com, and relentless.com. Among all these names, he still owns the name *relentless.com*. The site relentless.com however, redirects to amazon.com today.

2. Apple once was into the clothing business

Today Apple has made its distinguished name in everything they do. Take it the Mac OS, Macbook, iPod, or iPhone. The company always wants to create an

isolated echo system and has successfully maintained it that way. However, do you know Apple also had a clothing line in 1986? The collection was called ‘The Apple Collection’. It is unimaginable today that Apple was once into the apparel business. The company launched its catalog one year after Steve Jobs had left the company.

3. You can visit the world’s first webpage even today

Tim Berners-Lee, a British scientist working at CERN, invented the World Wide Web in 1989. It took another two years for the world’s first website to make its appearance. The first webpage went live in 1991 and was hosted on a NeXT system at CERN.

The amazing fact is that the first website is still available for you to visit. It serves as a historical archive for everything available online about the World Wide Web. Goto <http://info.cern.ch/hypertext/WWW/TheProject.html> to check it out.

4. Wikipedia is maintained by thousands of bots

Most of today’s internet users are aware of what Wikipedia is. It is a vast collection of crowd-sourced information available online. It is common knowledge that the online encyclopedia is created and edited by volunteers.

But do you know that thousands of bots (*automated programs*) currently maintain the Wikipedia pages? Today, there are 2468 bot tasks approved to carry out maintenance jobs on more than 52 million English Wikipedia pages.

Wikipedia bots perform operations such as new page creation, spelling correction, style correction, etc. Bots can also revert the pages to the original version when edits are made due to vandalism.

Anyone with programming knowledge can easily create bots for Wikipedia. However, these programs need to be approved by the Bot Approval Group before they can maintain Wikipedia pages.

5. QWERTY keyboard was designed to slow down the typing speed

People boast about their writing speed on a typewriter or keyboard. It is even a competitive advantage for some jobs to have faster and more accurate typing skills. But do you know the current layout of the QWERTY keyboards is the outcome of a solution designed to slow down the typing speed?

To avoid the problem and have a better typing experience, Christopher Latham Sholes made many design alterations to the keyboard layout. The current layout of the QWERTY keyboards was finally designed by E. Remington and Sons, which solved the problem of jammed type bars.

6. Water Integrator — a computer that ran on water

Vladimir Sergeevich Lukyanov built the world's first computer in 1936 that solved differential equations in partial derivatives. The amazing fact is that the machine was driven by water.

The construction company that Lukyanov worked with was unable to find a solution for the cracks that used to happen in concretes during winter's sub-zero temperature. To understand the thermal process better, Lukyanov researched the temperature conditions in concrete masonry.

Finally, he built the water integrator machine that could plot graphs and help visualize the thermal process.

Manufacturing plants, research organizations, and educational institutes used water computers well into the 1970s. The use of these hydraulic integrators diminished once the digital computers became more powerful and convenient to use.

7. Google was up for sale in 1999 at 1000 times cheaper

Larry Page wanted to sell Google to Excite in 1999. The deal was stuck around \$750,000 and 1% of Excite. But then the deal fell apart. Today Google's Market cap is over \$700 billion.

There are two versions of the story around why Excite did not buy Google at that time. As per the then Excite CEO George Bell, he rejected the deal because Larry Page insisted that Excite replace all its search technology with Google's search technology.

However, as per the details given by Steven Levy in his book 'In The Plex' George Bell was not very happy with Google's search algorithm's excellent performance. Bell thought Google's relevant search results might take the users away to other websites, making it harder to retain the users on their own Excite webpages.

8. Smoking can void your Apple product warranties

Do you know your Apple product can lose its warranty if you smoke near them? Apple has a policy to safeguard its technicians from any toxic work environment.

Tobacco tars settled on the systems are considered harmful. Hence, Apple can deny servicing your product even if they are in warranty if they believe that it has come into contact with tobacco smoke.

There is no warranty void clause written in the product documents. But there are numerous instances where the company has refused to honor the warranty on a product that has been exposed to smoke.

People have detailed their experiences with not being able to claim warranty repair on their Apple products due to findings of tobacco tars settled on the parts. If you want to stay safe and have a valid warranty on your Apple products, don't let people smoke near any of them.

SUBMITTED BY:

S.VIBILAN

HARRIS SAMUEL

KISHORE KUMAR

EVOLUTION OF INFORMATION SECURITY AND ETHICAL HACKING

Information Security:

There is no such thing as perfect security: This means that no matter how much effort you put into securing your system or network, there will always be potential vulnerabilities that hackers can exploit. This is a well-known fact in the information security community. Even with the best technology and software, if employees are not trained in security awareness and good practices, they may unwittingly expose sensitive information to unauthorized parties.



It's important to invest in security education and training for all employees to minimize the risk of human error. Security is not just about technology: While technology is critical in securing your network, policies and procedures are also important components of a comprehensive security strategy. The impact of a security breach goes beyond financial losses Security is a global issue: Cyber threats and attacks can come from anywhere in the world, and organizations must be prepared to defend against them.

Ethical Hacking:

Ethical hacking involves an authorized attempt to gain unauthorized access to a computer system, application, or data. Carrying out an ethical hack involves duplicating strategies and actions of malicious attackers

Types of attacks:

- 1.SQL Injection
- 2.Eavesdropping
- 3.Session Hijacking
- 4.DNS Spoofing
- 5.Cryptojacking

A \$Trillion dollar industry:

The global cybersecurity industry has become a trillion-dollar industry due to the increasing frequency and sophistication of cyber attacks. With the growth of digital transformation and the internet of things (IoT), the demand for cybersecurity services and products has skyrocketed. Companies and governments worldwide are investing heavily in cybersecurity to protect their sensitive data and infrastructure. The continuous evolution of cyber threats means that the cybersecurity industry is poised for further growth in the coming years.

Impacts on recent developed technologies:

- 1.Internet of Things (IoT): Many IoT devices have weak security measures or default passwords that are easy to guess, making them vulnerable to cyber attacks.

2. Cloud Computing: Storing data in the cloud has become more common, but this also presents security challenges.

3. AI & ML: Hackers can manipulate the input data used by these technologies, leading to incorrect or manipulated outputs.

4. 5G Networks: The adoption of 5G networks brings faster speeds and more connectivity, but it also introduces new security challenges.

5. Biometric Authentication: Biometric authentication methods, such as fingerprint or facial recognition, are becoming more vulnerable.

Conclusion:

Cybersecurity is a critical aspect of our modern digital world. It involves protecting computer systems, networks, and data from unauthorized access, theft, and damage. So, it's our responsibility to stay safe.

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2ND YEAR IT

EMERGING TECHNOLOGIES - 5G

TECHNOLOGY

EMERGING TECHNOLOGY :

Emerging technologies are technologies whose development, practical applications, or both are still largely unrealized. These technologies are generally new but also include older technologies finding new applications.

Emerging technologies include a variety of technologies such as educational technology, information technology, nanotechnology, biotechnology, robotics, and artificial intelligence.

5G TECHNOLOGY:

5G technology is a 5th generation technology in telecommunications, that's intended to improve on 4G. 5G promises significantly faster data rates, higher connection density, much lower latency.

The 5G network will also simplify mobility, with seamless open roaming capabilities between cellular and Wi-Fi access. Mobile users can stay connected as they move between outdoor wireless connections and wireless networks inside buildings without user intervention or the need for users to reauthenticate.

5G technology should improve connectivity in underserved rural areas and in cities where demand can outstrip today's capacity with 4G technology. New 5G networks will also have a dense, distributed-access architecture and move data processing closer to the edge and the users to enable faster data processing.

SIGNIFICANCES OF 5G:

1. faster data rates.
2. higher connection density.
3. much lower latency.

PLANS FOR 5G:

1. device-to-device communications.
2. better battery consumption.
3. improved overall wireless coverage.

EVOLUTION OF 5G:

1.1979 - 1G - ANALOG TELECOMMUNICATION:

The analog communication is communication from the sender to the receiver in the form of an analog signal. The analog signal is a continuous time varying signal. The example of analog signal is sound waves. The signals that continuously vary with time are the examples of an analog signal, such as audio and video signals.

2.1991 - 2G - TEXT MESSAGING:

Text messaging, or texting, is the act of composing and sending electronic messages, typically consisting of alphabetic and numeric characters, between two or more users of mobile devices, desktops/laptops, or another type of compatible computer. Text messages may be sent over a cellular network, or may also be sent via an Internet connection.

The term originally referred to messages sent using the Short Message Service (SMS). It has grown beyond alphanumeric text to include multimedia messages using the Multimedia Messaging Service (MMS) containing digital images, videos, and sound content, as well as ideograms known as emoji (happy faces, sad faces, and other icons), and instant messenger applications (usually the term is used when on mobile devices).

Text messages are used for personal, family, business and social purposes.

3. 1998 - 3G - MOBILE AND WIRELESS INTERNET CONNECTIONS:

A mobile phone is a portable telephone that can make and receive calls over a radio frequency link while the user is moving within a telephone service area. The radio frequency link establishes a connection to the switching systems of a mobile phone operator, which provides access to the public switched telephone network (PSTN).

Modern mobile telephone services use a cellular network architecture and, therefore, mobile telephones are called cellular telephones or cell phones.

Wireless Internet is typically provided by wireless Internet service providers (WISP) that broadcast wireless Internet signals in a specific geographical location. Typically, wireless Internet is delivered through radio waves or satellite signals.

4. 2008 - 4G - Cloud, IP and Truly mobile broad band:

Cloud:

The cloud" refers to servers that are accessed over the Internet, and the software and databases that run on those servers. Cloud servers are located in data centers

all over the world. By using cloud computing, users and companies do not have to manage physical servers themselves or run software applications on their own machines.

IP:

IP stands for "Internet Protocol," which is the set of rules governing the format of data sent via the internet or local network. In essence, IP addresses are the identifier that allows information to be sent between devices on a network: they contain location information and make devices accessible for communication.

Mobile Broad Band:

Mobile broadband is the marketing term for wireless Internet access via mobile networks. Access to the network can be made through a portable modem, wireless modem, or a tablet/smartphone (possibly tethered) or other mobile device. The first wireless Internet access became available in 1991 as part of the second generation (2G) of mobile phone technology. Higher speeds became available in 2001 and 2006 as part of the third (3G) and fourth (4G) generations. In 2011, 90% of the world's population lived in areas with 2G coverage, while 45% lived in areas with 2G and 3G coverage. Mobile broadband uses the spectrum of 225 MHz to 3700 MHz's

5. 2019 - 5G - Unlimited data capacity:

Unlimited data capacity means as much data as you can handle 24/7 that depends on the speed you have.

Stand-alone 5G:

Standalone 5G does not depend on an LTE EPC to operate. Rather, it pairs 5G

radios with a cloud-native 5G core network. The 5G core itself is designed as a Service Based Architecture (SBA) which virtualizes network functions altogether, providing the full range of 5G features enterprise needs for factory automation, autonomous vehicle operation, and more.

Or as Ericsson says, “Industry digitalization is what is going to pave the way for new revenue streams for service providers. And 5G use cases requiring ultra-low latency and much higher capacity will only be feasible with the SA 5G NR and the 3GPP core network architecture for 5G Core (5GC).”

Non-Standalone 5G:

The initial rollouts of 5G networks provide customers with higher data transfer speeds by pairing a 5G Radio Access Network (RAN) with the LTE Evolved Packet Core (EPC). Because the 5G RAN remains reliant on the 4G core network to manage control and signaling information and the 4G RAN continues to operate, this is called a Non-Standalone Architecture.

By leveraging the existing infrastructure of a 4G network, carriers are able to provide faster and more reliable Enhanced Mobile Broadband (eMBB) without completely reworking their core network technology and pushing customers to new devices. Non-Standalone 5G provides a transitional platform for carriers and customers alike.

In a Nutshell, What Is 5G?

5G is the latest evolution of cellular wireless connectivity and offers improved capacity, coverage, and lower latency. 5G offers many improvements compared to 4G but relies on the similar fundamentals to communicate with end user devices.

What makes 5G so different is the new levels of performance it offers. Similar to how 4G helped usher in the smart phone era, 5G will power new technologies across the enterprise, within smart cities, for autonomous vehicles, and ubiquitous Internet of Things (IoT) installations.

Under the hood, 5G offers significant improvements:

- Wired like reliability
- Ultra-low latency <20ms
- Gbps data rate

Closing the performance gap between 4G and 5G will allow 5G powered technology in the future to take shape and create new opportunities for both businesses and consumers.

Behind the scenes, 5G frequency bands help users receive the best possible performance given the distance between the source and the device

How is 5G different from 4G?

5G networks are designed to be open and virtualized, allowing individual services with different performance requirements to share the same infrastructure. The virtualization of functions effectively separates software from hardware implementations. This allows each function to be scaled independently and distributed optimally, with respect to available bandwidth capacity and latency requirements. Distributed architectural design, enabled through control/user plane separation, allows operators to position functions and services where they can best service the end user.

Why is 5G needed?

4G is starting to show its limits under current usage growth, precisely at a time when new technologies are about to place huge new demands on networks. In fact, the success of new technologies such as Internet of Things (IoT) devices, web-based artificial intelligence (AI) applications, and autonomous vehicles and machines rests on the availability of a robust, high-performing 5G network and its increased speeds, lower latency, and greater capacity.

The technologies that will provide the next generation of cloud services and connected experiences—such as augmented and virtual reality—will need 5G's performance and flexible architecture to reach their full potential.

When will 5G be available?

While mobile carriers are anxious to lead their markets in launching 5G, the journey to ubiquitous 5G availability should be viewed as a marathon, not a sprint. Availability requires new physical infrastructure, and time for developers and device makers to adjust to 5G's new architectures.

Achieving 5G availability depends on a complex mix of factors, in addition to new infrastructure. For example, one method 5G uses for load balancing is carrier aggregation; one carrier's 5G phones might not benefit from performance improvements until other carriers finish their infrastructure upgrades. Enterprises are keen to implement 5G for their own digital transformation. Private 5G network services are viewed as the fastest and possibly best way for businesses to use the new technology to benefit their business and customer experiences.

Advantages of 5G Technology:

1. **High Speed** - One of the major pros of 5G technology is its ability to work

faster on cellular and other devices. Unlike its predecessors—2G, 3G, 4G, and 4G LTE, where downloading movies, videos, and music and streaming services would have taken hours, with 5G technology these tasks become much easier with downloading taking only a few seconds. Moreover, one sector where the 5G technology will add value is the global booming gaming industry, according to experts. An average user can use up to 20Gbps of the internet with this technology.

2. **Latency** - Compared to its predecessors, 5G technology has low latency which makes it easier to support other new-edge technologies such as artificial intelligence, IoT, and virtual reality, which is another major advantage of 5G technology. Furthermore, owing to its low latency it makes browsing easier, thus improving customer experience.

3. **Bandwidth** - With increased bandwidth, 5G technology provides seamless transfer of data, thus improving the connectivity amongst devices and the overall user experience. Moreover, the technology provides users with a seamless transition of services between cellular devices and wireless Wi-Fi, thus improving performance. This is another advantage of 5G technology. Furthermore, a smaller number of 5G towers would also provide users with improved bandwidth.

Disadvantages of 5G Technology:

1. **Limited Coverage:** While 5G technology is touted to have the fastest speed, its presence in only select cities globally that have 5G towers is one of the limitations of this technology. Despite global companies and governments working for maximum cities to have the coverage of 5G, it would take years for the

introduction and implementation, as the testing, trial, and set-up of 5G towers is an expensive process.

CONCLUSION:

5G will be able to sustainably satisfy the requirement of the 1000-time traffic growth. 5G will provide users with fiber-like access data rate and “zero” latency user experience. 5G will be capable of connecting 100 billion devices. 5G will be able to deliver a consistent experience across a variety of scenarios including the cases of ultra-high traffic volume density, ultra-high connection density, and ultra-high mobility. 5G will also be able to provide intelligent optimization based on services and users’ awareness and will improve energy and cost efficiency by over a hundred of times, enabling us all to realize the vision of 5G, “information a finger away, everything in touch.”

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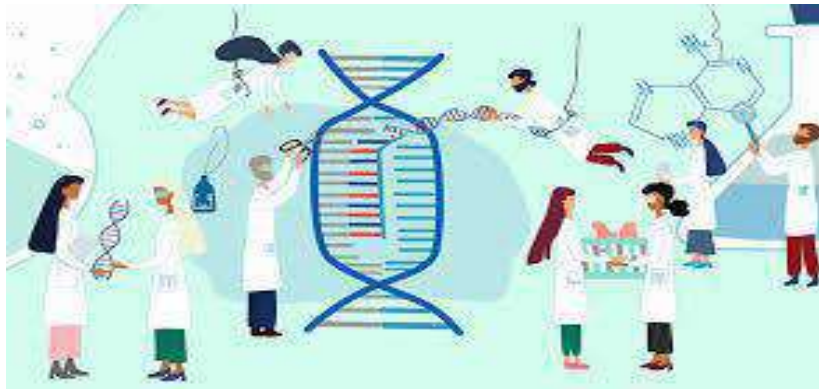
GENETIC ENGINEERING

Genetic engineering is the process of altering an organism's genetic makeup by introducing new DNA into its genome. It has the potential to transform the fields of medicine, agriculture, and environmental science. While genetic engineering has the potential to bring many benefits, it is also a controversial topic due to ethical and safety concerns.



The process of genetic engineering involves manipulating the DNA of an organism in a laboratory. Scientists can isolate genes that encode for specific traits and insert them into the genome of another organism. This can be used to improve the characteristics of crops or animals, to create new medicines, or to cure genetic diseases.

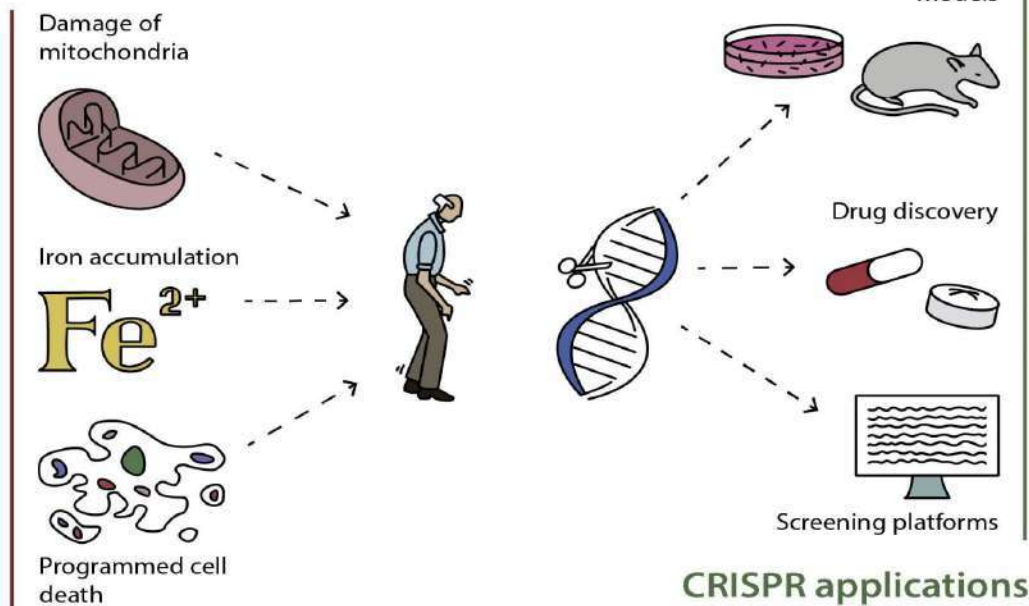
One of the most significant benefits of genetic engineering is the potential to produce more efficient crops. By modifying the genes responsible for traits such as drought tolerance, pest resistance, and yield, crops can be grown with less water and pesticides while producing higher yields. This could have significant implications for agriculture, particularly in regions where water and resources are scarce.



Genetic engineering also has the potential to revolutionize the field of medicine. By altering the genetic code of a patient's cells, it may be possible to cure or prevent genetic diseases. For example, gene therapy is a technique that involves replacing a defective gene with a healthy one. This has been used to treat disorders such as sickle cell anemia and certain types of blindness.

Despite the potential benefits, genetic engineering is also a controversial topic. One concern is that genetic engineering may have unintended consequences, such as creating new diseases or altering ecosystems. Another concern is the ethical implications of genetic engineering, particularly in the field of human genetic engineering. The idea of altering the genetic makeup of future generations raises complex ethical questions about the nature of humanity and our responsibilities to future generations.

Mechanisms



Another concern with genetic engineering is the potential for unequal distribution of benefits. If genetic engineering becomes widespread, it may exacerbate existing inequalities in access to healthcare, food, and resources. However, it also raises complex ethical and safety concerns. As we continue to explore the possibilities of genetic engineering, it is important to weigh the potential benefits against the potential risks and to consider the broader societal implications of this technology.

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IT 2ND YEAR

LSRW SKILLS

Language is never learnt. It is acquired. If one wants to acquire language, he/she should follow natural way of learning things. See how we learnt our Mother Language. As a child, we 'Listened' language spoken around us for 3 years. At the second stage, we 'spoke' in broken words and sentences for couple of years. At the third stage, we 'read' some picture books. Even alphabets were remembered as pictures. It is only in the last and fourth stage that we learn to 'write'. Thus, to say, L-S-R-W is natural way of acquiring language.

L stands for Listening

S stands for speaking

R stands for Reading

W stands for writing

Listening Skills

To listen is to give attention to sound or action. When listening, one is hearing what others are saying, and trying to understand what it means. The act of listening involves complex affective, cognitive and behavioural processes.

Listening is the ability to accurately receive and interpret messages in the communication process. Listening is Not the Same as Hearing. It requires focus and concentrated effort to understand the messages. listening to a language 45 percent of acquiring knowledge is completed. While listening to a language we are hearing many new vocabularies in that language Listening. is the ability to receive and interpret the messages in the communication.

The 7 types of the listening skills are,

- | | |
|----------------------------|---------------------------|
| 1. Informational listening | 5.Comprehensive listening |
|----------------------------|---------------------------|

- | | |
|-----------------------------|--|
| 2. Discriminative listening | 6. Empathetic or therapeutic listening |
| 3. Biased listening | 7. Critical listening |
| 4. Sympathetic listening | |

These seven types of listening help to become a great listener. By using the seven qualities we can understand a language very easily. Through the listening to audio books, podcasts, we can understand the language. While listening to the audio books, podcasts we have to listen by using the informational listening

SPEAKING SKILLS

Speaking is an act of conveying one's thoughts, emotions to others in spoken language. Speaking skills contribute 30 percentage in learning a language. In case of students the speaking skills help them to clear their doubts in the language. Speaking in common language among people can boost our confidence in that particular language. Speaking skills also help assure that one won't be misunderstood by those who are listening.

The Four elements of speaking skills are,

1. Vocabulary
2. Grammar
3. **Pronunciation**
4. **Fluency**

Informal speaking skills are important for conversations with friends and family, helping us to form emotional connections. Formal speech, on the other hand, is

necessary for workplaces, in presentations or for conversations with people you don't know. Formal language is important as it helps us to make a good impression on people and communicate politely.

Mistakes in conversation occur when participants in the conversation are operating with different implicit rules and expectations for the SPEAKING model. Mistakes often results from disagreements about inclusion of participants, mismatched ends, unexpected act sequences, keys or instrumentalities. In general mistakes and conflicts arise when there is a deviation in the conversation from the norm. In some genres, such as gossip, rapid turn-taking and interrupting is not only accepted, but expected. If one participant is not active in this type of speech they may come across as ambivalent to the conversation; this would be an example of a mistake.

The common problems faced by new language speaker are lack of grammar, lack of confidence, shyness, fear of making mistakes, lack of motivation, nervous in speaking. These problems can be easily get rid by practicing and by self-motivating them.

Practice makes perfect when it comes to developing English speaking skills.

Listening to English, understanding grammar and reading can all help slightly, but they're never going to improve English speaking skills to the extent it is possible.

Your class need to actually speak.

READING SKILLS

Reading is the third phase in the LSRW skills. Reading contributes 16 percent of learning a language. Reading is the process of looking at a series of written

symbols and getting meaning from them. Reading skills helps to understands the language as we see the letters and the words of the language.

Reading is typically an individual activity, done silently, although on occasion a person reads out loud for other listeners; or reads aloud for one's own use, for better comprehension. Before the reintroduction of separated text (spaces between words) in the late Middle Ages, the ability to read silently was considered rather remarkable.

Major predictors of an individual's ability to read both alphabetic and non-alphabetic scripts are oral language skills, phonological awareness, rapid automatized naming and verbal IQ.

As a leisure activity, children and adults read because it is pleasant and interesting. In the US, about half of all adults read one or more books for pleasure each year. About 5% read more than 50 books per year. Americans read more if they: have more education, read fluently and easily, are female, live in cities, and have higher socioeconomic status. Children become better readers when they know more about the world in general, and when they perceive reading as fun rather than another chore to be performed.

The four types of Reading skills are,

1. Skimming Reading
2. Scanning Reading
3. Intensive Reading
4. Extensive Reading

The common problems faced by the language readers are,

1. **Issues with decoding**
2. **Poor comprehension**

3. Speed

To get rid of these problems, help students activate their prior knowledge of a topic and take guesses about what they are about to read by analysing pictures and titles or skimming a text to assess the main idea. You can also create mind-maps as a pre-reading activity or put a few questions on the board and have the students start by discussing them in order to prepare for the reading. Next we will be seeing the last phase in 4 pillar skills.

WRITING SKILLS

The last phase in learning a language is writing. Writing skill contributes 9 percent in learning a language. If a person completed the other three phases properly, he/she can easily write in that language. As they already know the how the words in that language are pronounced and they will be knowing many vocabularies from the reading phase. by combining their vocabulary knowledge and creativity one can easily write in any language. Writing is a medium of human communication that involves the representation of a language through a system of physically inscribed, mechanically transferred, or digitally represented symbols. Writing systems are not themselves human languages (with the debatable exception of computer languages); they are means of rendering a language into a form that can be reconstructed by other humans separated by time and/or space. While not all languages use a writing system, those with systems of inscriptions can complement and extend capacities of spoken language by enabling the creation of durable forms of speech that can be transmitted across space and stored over time. It has also been observed that the activity of writing itself can have knowledge-transforming effects, since it allows humans to externalize their

thinking in forms that are easier to reflect on, elaborate, reconsider, and revise.^{[4][5]} Writing relies on many of the same semantic structures as the speech it represents, such as lexicon and syntax, with the added dependency of a system of symbols to represent morphology. The result of the activity of writing is called a text, and the interpreter or activator of this text is called a reader.

The common problems faced by the people are,

Spelling mistakes, Grammatical errors, lacking in ordering the information while writing.

By practicing the pronunciation of words, the spelling mistakes can be avoided. The problems in sequential writing can be solved by drawing a flowchart which explains the process of the content. With that flowchart we can easily write an explanation for the process. With reading and listening skills we can overcome the issues in grammatical errors How to improve. Write Everyday. Read What You Want to Write About. Convey Your Message easily. Writing is something others can refer back to at any point—as opposed to verbal communication, which might have to be repeated and requires both parties to be available at the same time. Strong writing skills help you to communicate with others without having to schedule a meeting or phone call.

CONCLUSION

These four skills will help a person in learning a language. These four skills are interlinked and can't be taught independently. The primary step is listening and speaking for the other two reading and writing skill. Language can't be learnt with only the lectures and cramming the rules, we have to do a lot of practice. We will

be facing many problems in all the four phases we should not quit in any of the phase. After this anyone can learn any language with these four steps.

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2ND YEAR

TECHNOLOGIES USED IN CRICKET

Cricket is a sport that has always been steeped in tradition and history, but in recent years, it has also embraced the use of technology to enhance the game. From instant replays to player tracking systems, there are now a wide range of technologies used in cricket that have changed the way the game is played and viewed.



One of the most significant technological advancements in cricket has been the use of the Decision Review System (DRS). This system allows teams to challenge umpiring decisions using technology such as slow-motion replays, ball-tracking software, and thermal imaging. The DRS has greatly improved the accuracy of umpiring decisions and has led to more fair outcomes in matches.

Another technology that has become increasingly important in cricket is player tracking systems. These systems use cameras and sensors to track the movements

of players on the field, providing data on everything from a player's speed and acceleration to their heart rate and breathing. This information can be used to improve player performance, identify areas for improvement, and prevent injuries.

Ball-tracking software is another technology that has revolutionized cricket in recent years. This software uses a combination of cameras and algorithms to track the trajectory of the ball and predict where it will go. This information can be used to help umpires make decisions on LBW (leg before wicket) appeals and to provide fans with a better understanding of the game.



Cricket has also embraced the use of wearable technology, such as GPS tracking devices, to monitor player performance and fitness levels. These devices can provide coaches with real-time data on a player's movements and workload,

helping them to make informed decisions about team selection and player management.

Social media has also had a significant impact on cricket, with players and fans now able to connect with each other and share their thoughts on the game in real-time. Platforms such as Twitter and Instagram have become key communication channels for players and teams, allowing them to interact with fans and build their personal brands.

In addition to these technologies, cricket has also embraced innovations such as day-night Test matches and pink balls. These innovations have been designed to make the game more exciting for fans and to attract new audiences to the sport.

Overall, the use of technology in cricket has had a significant impact on the game, from improving umpiring decisions to enhancing player performance and fan engagement. As technology continues to evolve, it is likely that we will see even more innovations in cricket in the years to come.

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Dinesh (244011)

IT 2nd year

THE DARK SIDE OF CHATGPT

By now, you've probably heard of all the potential uses of [ChatGPT](#), the AI-powered chatbot that burst into the public consciousness back in November. With just a few words of text prompting, ChatGPT can write entire essays, compose poems, and even write computer code.

Well, the new era of ChatGPT is going to make that experience look like a quaint little science experiment. That's because ChatGPT is capable of generating much more pernicious content at near-zero cost. Moreover, this content will be so authentically "human" that you could never tell it was written by a [machine](#).

But while this new tool has a lot of potential, it's not without its limitations. In this article, we'll take a closer look at some of the cons of Chat GPT.

1. **Lack of Empathy:** Chat GPT is an AI model and does not have emotions. This means that it can be difficult for it to understand the context and emotional nuances of a conversation, leading to awkward or insensitive responses. For example, when asked about a sensitive topic like mental health, Chat GPT may provide a clinical response that is not in line with the tone of the conversation.
2. **Bias:** As with any AI model, Chat GPT is only as unbiased as the data it was trained on. If the data used to train Chat GPT contains biases, then the AI model will also be biased.

3. **Limited Understanding:** While Chat GPT has a vast database of information, it doesn't always understand the context of a question. This can lead to incorrect or irrelevant responses. For example, if you ask Chat GPT about a specific type of cuisine, it might provide information about the history of the cuisine, but it might not be able to give you specific restaurant recommendations in your area.
4. **No Room for Improvement:** Chat GPT is an AI model that is trained on a large dataset and its responses are generated based on that data. This means that it cannot learn from its interactions and improve over time like a human can. This limits its potential for growth and improvement and makes it less flexible in adapting to new situations.
5. **Disinformation:** Artificial intelligence is good at creating all kinds of content, so sometimes people won't be able to detect at a glance when a news item is fake. The scale at which ChatGPT can produce text, along with the ability to make even incorrect information sound convincingly correct, certainly makes information on the Internet even more questionable. As you can imagine, this could become a real danger depending on the extent of the fake news

In conclusion, Chat GPT is a fascinating new tool with a lot of potential, but it's not without its limitations. While it's great for providing information and having a chat, it's important to understand that it's not perfect and that it has limitations.

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IT 3rd YEAR

TOP 50 OOPS INTERVIEW QUESTIONS AND ANSWERS

Here are OOPS interview questions and answers for the freshers as well as experienced candidates to get their dream job .

1) What is OOPS?

OOPS is abbreviated as Object Oriented Programming system in which programs are considered as collection of objects. Each object is nothing but an instance of a class.

2) Write Basic Concepts of OOPS?

Following Are The Concepts of OOPS :

1. Abstraction
2. Encapsulation
3. Inheritance
4. Polymorphism

3) What is a Class?

A class is simply a representation of a type of object. It is the blueprint / plan / template that describes the details of an object.

4) What is an Object?

An object is an instance of a class. It has its own state, behaviour and identity.

5) What is Encapsulation?

Encapsulation is an attribute of an object, and it contains all data which is hidden.

That hidden class is restricted to the members of that class.

Levels are Public , Protected , Private , Internal and Protected Interval.

6) What is Polymorphism?

Polymorphism is nothing but assigning behaviour or value in a subclass to something that was declared in the main class. Simply, Polymorphism takes more than one form.

7) What is Inheritance?

Inheritance is a concept where one class shares the structure and behaviour defined in another class. If inheritance applied to one class is called single heritance and if it depends on multiple classes, then it is called multiple inheritance.

8) What are Manipulators?

Manipulators are the functions which can be used in conjunction with the insertion (<<) and extraction (>>) operators on an object. examples are endl and etw.

9) Explain the term Constructor :

A constructor is a method used to initialize the state of an object and its gets invoked at the time of object creation. rules for construction are :

(i) Constructor name should be the same as a class name.

(ii) A constructor must have no return type.

10) Define destructor

A destructor is a method which is automatically called when the object is made of scope or destroyed. destructor name is also as same as class name but with the tilde symbol before name .

11) What is an Inline function?

An Inline function is a technique used by the compilers and instructs to insert complete body of the function wherever that function is used in the program source code.

12) What is a Virtual Function?

A Virtual function is a member function of a class, and its functionality can be overridden in its derived class. this function can be implemented by using a keyword called virtual, and it can be given during functional declaration.

13) What is Friend Function?

A friend function is a friend of a class that is allowed to access to public, private, or protected data in that same class. if the function is defined outside the class cannot access such information.

14) What is Function Overloading?

Function overloading is a regular function, but it is assigned with multiple parameters. it allows the creation of several methods with the same name which differ from each other by the type of input and output of the function.

example:

```
void add(int&a, int&b);
```

```
void add(double&a, double&b);
```

```
void add(struct bob&a, struct bob&b);
```

15) What is Operator Overloading?

Operator overloading is a function where different operators are applied and depends on the arguments. operators, -, *, can be used to pass through the function, and it has own precedence to execute.

16) What is an Abstract Class?

An abstract class is a class which cannot be instantiated. creation of an object is not possible with an abstract class, but it can be inherited. an abstract class can contain only an abstract method. java allows only abstract method in an abstract class while other languages allow non-abstract method as well.

17) What is a Ternary Operator?

The ternary operator is said to be an operator which takes three arguments. arguments and results are of different data types, and it depends on the function. the ternary operator is also called a conditional operator.

18) What is the use of Finalize Method?

Finalize method helps to perform clean up perform operations on the resources which are not currently used. finalize method is protected and it is accessible only through this class or by derived class.

19) What are the different types of Arguments?

A parameter is a variable used during the declaration of the function or subroutine, and arguments are passed to the function body, and it should match with the parameter defined. there are two types of arguments,

- i. Call by value - value passes will get modified only inside the function, and it returns the same value whatever it is passed into the function.
- ii. Call by reference - value passed will get modified in both inside and outside the functions and it returns the same or different value.

20) What is the Super Keyword?

The super keyword is used to invoke the overridden method, which overrides one of its superclass methods. This keyword allows to access the overridden methods and also to access the hidden members of the superclass. It also forwards a call from a constructor, to a constructor in the superclass.

21) What is Method Overriding?

Method overriding is a feature that allows a subclass to provide the implementation of a method that overrides in the main class. It will override the implementation in the superclass by providing the same method name, same parameter and the same return type.

22) What is an Interface?

An interface is a collection of an abstract method. If the class implements an interface, it thereby inherits all the abstract methods of an interface. Java uses interface to implement multiple inheritances.

23) What is Exception Handling?

An exception is an event that occurs during the execution of a program. Exceptions can be of any type - runtime exception and error exceptions. Those exceptions are adequately handled through exception handling mechanisms like try, catch, and throw keywords.

24) What are Tokens?

A compiler recognizes a token, and it cannot be broken down into component elements. Each punctuation character is considered as a token. Keywords, identifiers, constants, string literals and operators are examples of tokens.

25) What is the main difference between Overloading and Overriding?

Overloading is static binding, whereas Overriding is dynamic binding.

Overloading is nothing but the same method with different arguments, and it may or may not return the equal value in the same class itself.

Overriding is the same method names with the same arguments and return types associated with the class and its child class.

26) What is the main difference between a Class and an Object?

An object is a class. An object holds multiple information, but classes don't have any information. Definition of properties and functions can be done in a class and can be used by the object.

A class can have sub-classes, while an object doesn't have sub-objects.

27) What is an Abstraction?

Abstraction is a useful feature of OOPS, and it shows only the necessary details to the client of an object. Meaning, it shows only required details for an object, not the inner constructors, of an object. Example - when you want to switch on the television, it is not necessary to know the circuitry/mechanism needed to switch on the TV. Whatever is required to switch on TV will be shown by using an abstract class.

28) What are the Access Modifiers?

Access modifiers determine the scope of the method or variable that can be accessed from other various objects or classes. there are five types of access modifiers and they are as follows:

- i. Private
- ii. Protected
- iii. Public
- iv. Friend
- v. Protected friend.

29) What are Sealed Modifiers?

Sealed modifiers are the access modifiers where the methods can inherit it. Sealed modifiers can also be applied to properties , events, and methods. this modifier cannot be used to static members.

30) How can we call the base method without creating a instance?

Yes, it is possible to call the base method without creating an instance. and that method should be "static method". doing inheritance from that class - use base keyword from a derived class.

31) What is the difference between the new and override?

The new modifier instructs the compiler to use the implementation instead of the base class function. whereas, override modifier helps us to override the base class function.

32) What are the various types of constructors?

There are three types of constructors:

- i. Default constructor - with no parameters.
- ii. Parametric constructor - with parameters. create a new instance of a class and also passing arguments simultaneously.
- iii. Copy constructor - which creates a new object as a copy of an existing object.

33) What is early and late binding ?

Early binding refers to the assignment of the values to the variables during design time, whereas late binding refers to the assignment of values to the variables during run time.

34) What Is 'this' Pointer?

THIS pointer refers to the current object of a class. THIS keyword is used as a pointer which differentiates between the current object with the global object. It refers to the current object.

35) What is the difference between the structure and the class?

The default access type of a Structure is public, but class access type is private. A Structure is used for grouping data, whereas a class can be used for grouping data and methods. Structures are exclusively used for data and it doesn't required strict validation, but classes are used to report to encapsulate and inherent data, which requires strict validation.

36) What is the default access modifier in the class?

The default access modifier of a class is internal and the default access modifier of a class member is private.

37) What is a pure virtual function?

A pure virtual function is a function which can be overridden in the derived class but cannot be defined. A virtual function can be declared as pure by using the operator =0.

example:

Virtual void function2()=0 //pure virtual

38) What are the operators that can be overloaded ?

Following are the operators that can be overloaded -

- i. Scope resolution (::)
- ii. Member selection (.)
- iii. Member selection through a pointer to the function (.*)

39) What is dynamic or runtime polymorphism?

Dynamic or runtime polymorphism is also known as the method overriding in which call to an overridden function is resolved during run time, not at all the compile time it means having two or more methods with the same name, same signature but with different implementation.

40) Do we require a parameter for constructors?

No, we do not require a parameter for constructors.

41) What is a copy constructor?

This is a special constructor for creating a new object as a copy of an existing object. there will always be only one copy constructor that can be either defined by the user or the system .

42) What does the keyword virtual represented in the method definition ?

It means we can override the method.

43) Whether the static members can use the non static members?

False.

44) What are base class, sub class and super class ?

The base class is the most generalized class and it is said to be a root class. The sub class is a class that inherits from one or more base classes. The superclass is the parent class from which the class inherits.

45) What Is Static And Dynamic Binding?

Binding is nothing but the association of a name with the class. static binding is binding in which the name can be associated with the class during compilation time and it is also called as early binding.

Dynamic binding is a binding in which the name can be associated with the class during execution time, and it is also called as late binding.

46) How Many Instances Can Be Create For an Abstract Class?

Zero instances will be created for an abstract class. In other words, you cannot create an instance of an abstract class.

47) Which Keyword Can Be Used For Overloading?

Operator keyword is used for Overloading.

48) What Is The Default Access Specifier In The Class Definition?

Private access specifier is used in class definition.

49) How to achieve data abstraction ?

Data abstraction can be always achieved using two ways :

- i. Abstract class.
- ii. Abstract method.

50) What is Garbage collection (GC)?

Programming languages like C# and java include garbage collection (GC) as a memory mechanism. A programming language that supports garbage collection (GC) contains one or more GC engines that automatically release memory space that has been reserved for the things the application is no longer using.

SUBMITTED BY:

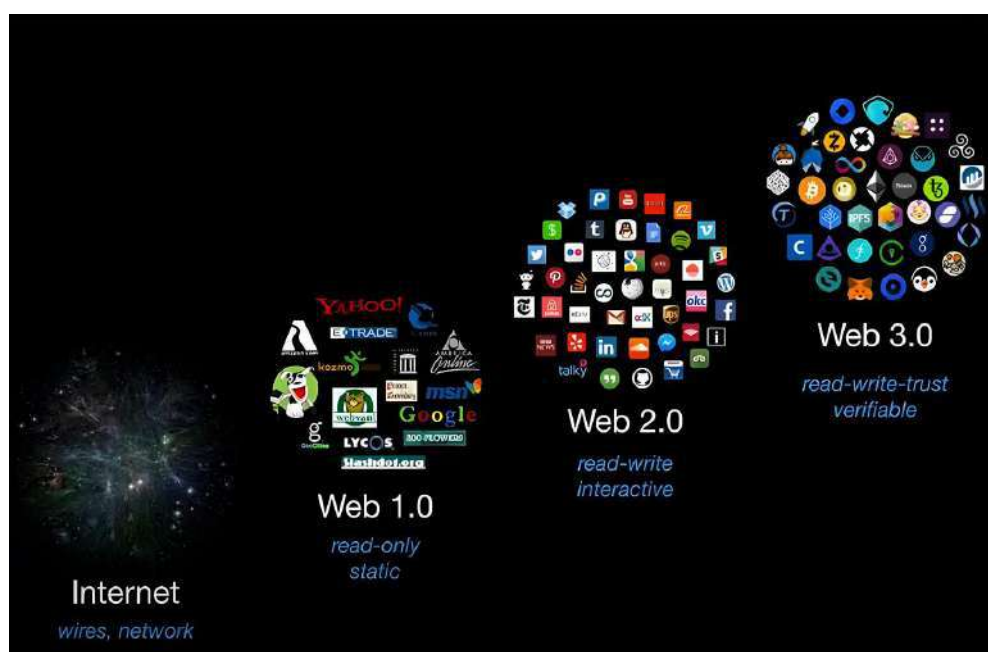
S.Vengadashan (244056)

B.tech IT 2nd year

WEB3

Welcome to the future of the internet, where the World Wide Web meets Web3.0, a decentralized and trustless internet that is built on blockchain technology. This new shift is set to transform the way we interact with each other, conduct transactions and even shape our society. So, sit back, relax and let's dive into the wonderful world of Web3.

First things first, let's address - what is Web3? Think of it as the next evolutionary stage of the internet. It's like going from a Nokia phone to an iPhone with all the latest features. Web3 is all about decentralization, meaning no single entity has control over the network, and trustlessness, which ensures that transactions are secure and transparent without the need for intermediaries.



Now, you may be wondering, how can something so revolutionary be fun? Well, imagine a world where you can own your own data and monetize it on your terms. No more shady data deals or intrusive ads. Web3 offers a new way to create and exchange value online, and that's exciting stuff!

One of the most significant use cases for Web3 is the creation of decentralized finance (DeFi) platforms. These platforms allow users to access financial services without relying on traditional banks or financial institutions. It's like having a bank in your pocket without any middlemen taking a cut.

Another exciting aspect of Web3 is the rise of non-fungible tokens (NFTs). These unique digital assets are changing the game when it comes to art, music, and even sports. Imagine owning a piece of art that is one of a kind and cannot be replicated. That's the beauty of NFTs. Plus, they have opened up new opportunities for artists to monetize their work directly to their fans.

But, with all this excitement comes responsibility. Web3 is still in its infancy, and we need to make sure that we build it in a way that is inclusive, secure, and accessible to all. That's why it's essential to educate ourselves on this technology and its potential implications. It's not just about the cool factor, but also the impact it can have on our society.



In conclusion, Web3 is a game-changer that has the potential to reshape our online world. So, let's embrace the future and all the possibilities that come with it!

- -SUBMITTED BY
KUMARAKABILAN P
2ND YEAR IT.

What is cryptocurrency and how does it work?

Cryptocurrency – meaning and definition

Cryptocurrency, sometimes called crypto-currency or crypto, is any form of currency that exists digitally or virtually and uses cryptography to secure transactions. Cryptocurrencies don't have a central issuing or regulating authority, instead using a decentralized system to record transactions and issue new units.

What is cryptocurrency?



Cryptocurrency is a digital payment system that doesn't rely on banks to verify transactions. It's a peer-to-peer system that can enable anyone anywhere to send and receive payments. Instead of being physical money carried around and exchanged in the real world, cryptocurrency payments exist purely as digital entries to an online database describing specific transactions. When you transfer cryptocurrency funds, the transactions are recorded in a public ledger.

Cryptocurrency is stored in digital wallets.

Cryptocurrency received its name because it uses encryption to verify transactions. This means advanced coding is involved in storing and transmitting cryptocurrency data between wallets and to public ledgers. The aim of encryption is to provide security and safety.

The first cryptocurrency was Bitcoin, which was founded in 2009 and remains the best known today. Much of the interest in cryptocurrencies is to trade for profit, with speculators at times driving prices skyward.

How does cryptocurrency work?

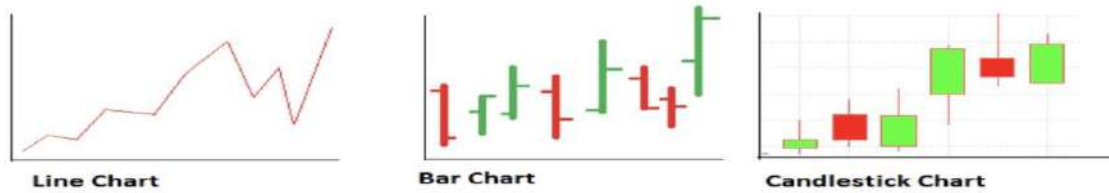
Cryptocurrencies run on a distributed public ledger called blockchain, a record of all transactions updated and held by currency holders.

Units of cryptocurrency are created through a process called mining, which involves using computer power to solve complicated mathematical problems that generate coins. Users can also buy the currencies from brokers, then store and spend them using cryptographic wallets.

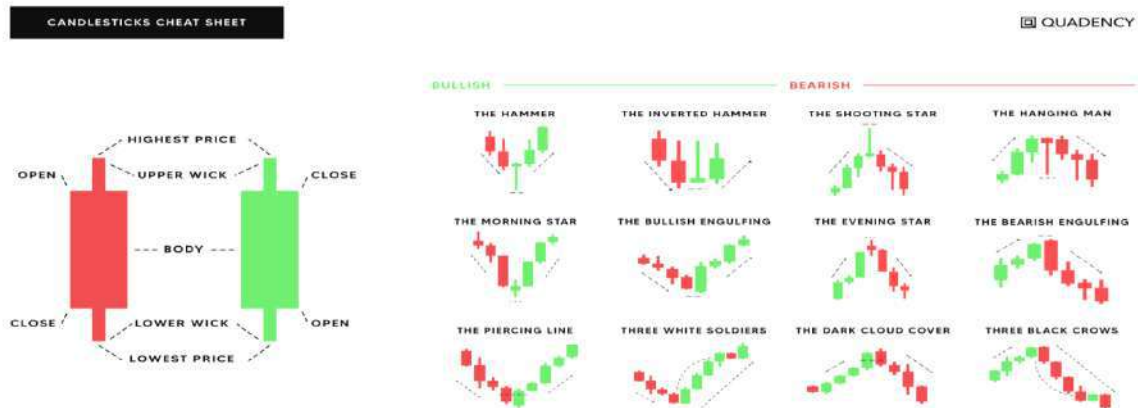
If you own cryptocurrency, you don't own anything tangible. What you own is a key that allows you to move a record or a unit of measure from one person to another without a trusted third party.

Although Bitcoin has been around since 2009, cryptocurrencies and applications of blockchain technology are still emerging in financial terms, and more uses are expected in the future. Transactions including bonds, stocks, and other financial assets could eventually be traded using the technology.

DIFFERENT TYPES OF CHART ANALYSIS IN CRYPTOCURRENCY



CANDLESTICK CHART ANALYSIS



Cryptocurrency examples

There are thousands of cryptocurrencies. Some of the best known include:

Bitcoin:

Founded in 2009, Bitcoin was the first cryptocurrency and is still the most commonly traded. The currency was developed by Satoshi Nakamoto – widely

believed to be a pseudonym for an individual or group of people whose precise identity remains unknown.

Ethereum:

Developed in 2015, Ethereum is a blockchain platform with its own cryptocurrency, called Ether (ETH) or Ethereum. It is the most popular cryptocurrency after Bitcoin.

Litecoin:

This currency is most similar to bitcoin but has moved more quickly to develop new innovations, including faster payments and processes to allow more transactions.



SUBMITTED BY

SARAN R

2ND YEAR IT



E-magazine from the department of

ELECTRONICS

AND COMMUNICATION ENGINEERING

Proudly presents

WIZARDZZ

Volume:22

An half yearly e-magazine by students of ECE

FROM THE HoD'S DESK

I am very delighted to see the department e-magazine getting released for this even semester (2022-2023). It's been customary for our department to release an e-magazine once every semester. This initiative is an excellent way to prove and exhibit the skills of the staff and the students in technology and artistic capabilities. I really hope this would kindle a spark in the minds of the students who are yet to contribute towards the progress of the initiative in the upcoming years.



I extended my sincere thanks to the people who have contributed to this publication to enhance its perfection and beauty through this articles, drawing and photography. I congratulate the entire editorial team for their hard work and dedication that has resulted in this publication of our e-magazine "WIZARDZZ. V. 21.0".

BEST OF LUCK STUDENTS!!!



Our Vision

**To become a leading
department of
Higher Learning and
a Research Center of
Excellence in
Research in
Electronics and
Communication
Engineering**

Our Mission

M1: To enable budding engineers to obtain technical exposure in various areas of Electronics and Communication Engineering.

M2: To nurture career improvement.

M3: To initiate and sustain research activities in the department in cutting edge areas of Electronics and Communication Engineering.

M4: To develop professional and ethical attitude in the students.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

Graduates of Electronics and Communication Engineering will

- **PEO1: have a strong foundation in the required sciences in order to pursue studies in Electronics and Communication Engineering.**

- **PEO2: have a broad exposure to the students in various topics**

related to Electronics and Communication Engineering fields, to enable them to excel in their professional career / higher studies.

- **PEO3: possess innovative skills in order to solve the technical problems which will arise in their professional life.**

- **PEO4: have professional and ethical attitude and an ability to visualize the engineering issues in a broader social context**



PROGRAM OUTCOMES (POS)

Engineering Graduates will be able to:

- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.





- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The Engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.





- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **Individual and team work :** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.





- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change





- **Individual and team work :** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
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PROGRAM SPECIFIC OUTCOMES (PSOS)

Graduates of Electronics and Communication Engineering will be able to:

PSO1:

Comprehend and demonstrate the principles and concepts of Semiconductor theory, Signal Processing & Embedded systems in the fields of Consumer Electronics, Medical Electronics and Defense Electronics.

PSO2:

Apply emerging Information and Communication Engineering Techniques to solve real time problems.







- **As a united front of learning, S.D. Balaji (II ECE-A), T. Kiran (II ECE-A), Clarence Nirmal (II ECE-A), S. Guru Venkatesh (II ECE-A) engaged enthusiastically in the INTEL FPGA WORKSHOP hosted at NIT, Trichy.**
- **In an enlightening experience, P. Jayasuriya(II ECE-A), Clarence Nirmal (II ECE-A), and S. Guru Venkatesh (II ECE-A) participated in a workshop focused on the mechanics and operations of drones, held at PSG TECH-Coimbatore.**
- **S.R. Gnanasambandan (II ECE-A) showcased his talents at the ADZAP event, a highlight of the symposium at Care College.**





- **With charisma and flair, R. Grubakar (II ECE-A) took the stage at Care College's ADZAP symposium.**
- **A Anith Adithya (II ECE-A) and S Guru Venkatesh (II ECE-A) showcased their expertise by presenting a groundbreaking paper on the innovative topic of E-Skin at Alagappa College of Engineering-Karaikudi.**
- **Immersing herself in the world of optical fiber technology, Manoj mani (II ECE-B) enriched her knowledge at the workshop held at SSN University.**
- **Embarking on a pioneering endeavor, Muthu .T (II ECE-B) dedicated his skills to a biomedical drone project at SSN University.**





- **Seamlessly blending innovation and execution, Muthu (II ECE-B) and Ragavi (II ECE-B) clinched the coveted first prize at Alagappa University.**
- **Manoj.S (II ECE-B) and Sudharsan (II ECE-B) participated in the enlightening MOC Interview event at SSN University.**
- **Masters of problem-solving, M. Soma Devaa (II ECE-B) and Mohammad Akhil (II ECE-B) triumphed in the Symposium at Alagappa University, claiming the first prize with their innovative solution.**





- **Nivetha.T (III ECE-A) received a Certificate of Appreciation for her exceptional paper presentation at the national conference, delving into the innovative realm of the "Smart Safety Jacket."**
- **Nivetha.T (III ECE-A) achieved an Award of Recognition at the Sara Hackathon 2023, making her mark with her exceptional work on the topic of "Smart Safety Jacket."**
- **In a remarkable feat, M. Karthika(III ECE-A) presented a paper titled "Multispectral Image Dehazing using Convolutional Neural Network" at the 2nd International Conference on Integration of Advanced Technologies for Industry 4.0 (ICIATI), hosted at KCG College of Technology, Chennai.**





- **M. Karthika (III ECE-A) successfully concluded an enriching internship focused on Python at Pantech Prolabs India Pvt Ltd, gaining valuable practical experience in the field.**
- **Caroline Blessy Yovan (III ECE-A) and Nisha M (III ECE-A) showcased their brilliance at the CKC Climate Hackathon organized by IIT Kanpur, clinching the 2nd prize with their innovative approach to "Smart Waste Segregation."**
- **Loganathan A (III ECE-A) successfully wrapped up a comprehensive internship focused on Telecommunication Technologies at the BSNL office in Trichy.**





- **Sriram Prasath. T (III ECE-B) successfully completed the Hindi 8 exam, excelling both in written and spoken components, culminating in a well-deserved convocation.**
- **R. Vignesh (III ECE-B) achieved a remarkable accomplishment by securing the first prize in the "Code Sense" competition at Electrolex, conducted by the Government College of Engineering in Srirangam, Trichy.**
- **Viswash (III ECE-B) successfully completed a comprehensive three-week summer internship focused on "Image Super-Resolution Using Deep Learning Techniques" at NIT Trichy.**
- **Yahitha (III ECE-B) actively participated in a workshop on cloud computing held at Deyo Info Tech in Trichy.**





- **Vishwamaharaja.P (III ECE-B)** attended the distinguished symposium named "Prayyudha 2k23" organized by Anna University, Trichy. Notably, he secured the 1st position in both the categories of debugging and treasure hunt, showcasing his exceptional skills and determination.
- **Shahin (III ECE-B), Sadam (III ECE-B), Sudharshan (III ECE-B), and Prakash (III ECE-B)** collectively achieved a remarkable feat by securing the 1st prize for their AI-driven artificial military car project at Ramakrishna College of Engineering, Trichy.
- **Suthika. K (III ECE-B)** has engaged in the study of "Programming in Python" through an educational program offered by NPTEL.





- **Mr. Tamilselvan(III ECE-B) has been certified by ToCumulus Technology Solutions LLP, Chennai, for the period from 29th August 2022 to 2nd September 2022. The certification covers training in the domains of Cyber Security, Router Management, and Server Firewall during this tenure.**
- **. An inplant training at Akashvani, Trichy, was attended by R. Srinithi (III ECE-B), G. Rathiaishwarya(III ECE-B), A. Shifana Rifath(III ECE-B), S. Vaanmarai(III ECE-B), S. Shamitha(III ECE-B), S. Shruthika(III ECE-B), S.S. Sri Ishwarya(III ECE-B), V.S. Subashree(III ECE-B), V. Swetha(III ECE-B), J. Teena Mascelin(III ECE-B), and S. Subiksha(III ECE-B), signifying their commitment to enhancing their skills and knowledge.**



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- **G. Kishore Balaji (III ECE-A) emerged as the runner-up in the zonals of the Hockey tournament, a prestigious event hosted at Anna University, Tiruchirapalli.**
- **G. Kishore Balaji (III ECE-A) actively participated in a paper presentation event hosted at K. Ramakrishna College of Engineering, Tiruchirapalli.**







- ❖ M.Santhi, B. Divya, "[Automatic Detection and Classification of Insects Using Hybrid FF-GWO-CNN Algorithm](#)", A Intelligent Automation and Soft Computing, Tech Science Press,, pp. 1881-1896, Vol. vol.36,, Issue. no.2, Jan 2023, DOI: 10.32604/iasc.2023.031573
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- ❖ S. A. Arunmozhi, "Image Recognition Using Deep Learning Techniques" in the proceedings of "9th International Mardin Artuklu Scientific Researches Conference" Organized by Turkey, Mardin on 20-Jan-2023.





- ❖ S. A. Arunmozhi, S. BharathHari, S. Hari Ganesh, K. Kaviya, M. P. Kaviya, "An Efficient VLSI Design of Pipelined Half Precision Floating Point ALU Design", International Journal of Advanced Research in Science, Communication and Technology, pp. 390-394, Vol. 3, Issue. 7, MAY 2023,
- ❖ S.A.Arunmozhi, NandhinisJ, Rengalaxmi S, Ritheswetha R, Thrisha K, "Transmittance multispectral imaging for reheated coconut oil detection" in the proceedings of "International Research Conference on Engineering Management Science And Technology" Organized by J.J. College of Engineering and Technology, J.J. College of Engineering and Technology on 12-May-2023.





- ❖ Dr. S.Rajeswari,Nivedha.R,Puja Sri.K, Ragavi.S,Sivetha.S, "[Vehicle Detection In Hairpin Bend Curve Using Deep Learning](#)", Gradiva Review Journal, pp. 212-219, Vol. 9, Issue. 5, MAY 2023.
- ❖ Dr.Rajeswari S,Jeffrey Alan A, Johan Kingsly M, Anthon A.S.K, Aadil Muhamed M.S,, "Sound Bite Hearing System Embed With OCR Techniques For Blind And Deaf People", International Journal of Research and analytical reviews, pp. 1-11, Vol. 10, Issue. 2, May 2023.





- ❖ K. Malaisamy, Mohd. Wasim, P. Sivagamasundhari, G. Sivakannu, And V. Dinesh, "[Array Antenna Design And Development For X-Band Applications](#)", Springer Lecture Notes , Titled As , "Computer Aided Constellation Management And Communication Satellites", Pp. 77-84, Vol. 987, Issue. 1, Mar 2023
- ❖ EINDHUMATHY.J, AI-Visual Examination On Manufacturing Industry: To Avoid Accidental Death Workplace, International Journal Of Creative Research Thoughts - IJCRT, pp. D189-D197, Vol. 11, Issue. 5, MAY 2023





- ❖ Anthuvan Lydia M, "A Survey On Image Processing Techniques using Deep Learning For Neurological Disorder Diagnosis" In The Proceedings Of "11th International Conference On Contemporary Engineering And Technology 2023• (Iccet 2023)" Organized By Organization Of Science And Innovative Engineering & Technology (Osiet). Chennai, India., Prince Shri Venkateshwara Padmavathy Engineering College Prince Dr. K. Vasudevan College Of Engineer On 01-May-2023& 02-May-2023.





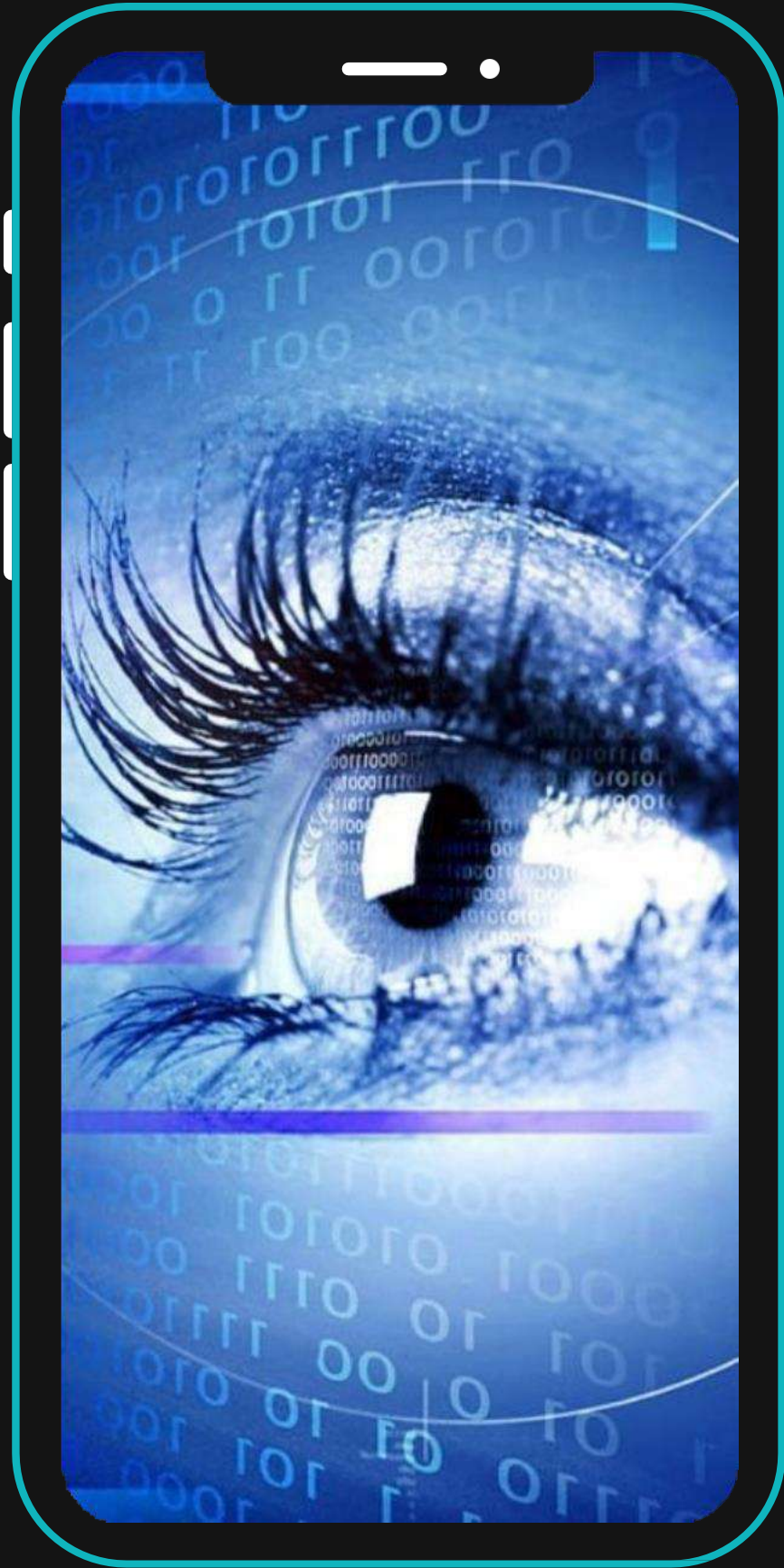
- ❖ Anthuvan Lydia, "Brain tumour detection in MRI using deep learning" in the proceedings of "International Research conference on Engineering Management Science and Technology (IRCEMST 23)" Organized by Department of CSE, J.J college of Engineering and Technology on 12-May-2023.
- ❖ S Kiruthiga, S Mythili, M Vijay, R Mukesh, "[Prediction of TEC and Range Error using Low-latitude GPS Data during January to April 2022 Solar Flare Events](#)", Geomagnetism and Aeronomy, pp. 17-29, Vol. 63, Issue. 1, FEB 2023





ARTICLE

TOPIC: *BLUE EYE TECHNOLOGY*



What is blue eye

technology?

The blue eyes technology works on Artificial Intelligence. It aims to give human abilities to a computer. A research team of IBM has come up with this technology to make a computer understand and sense human feelings and behavior.



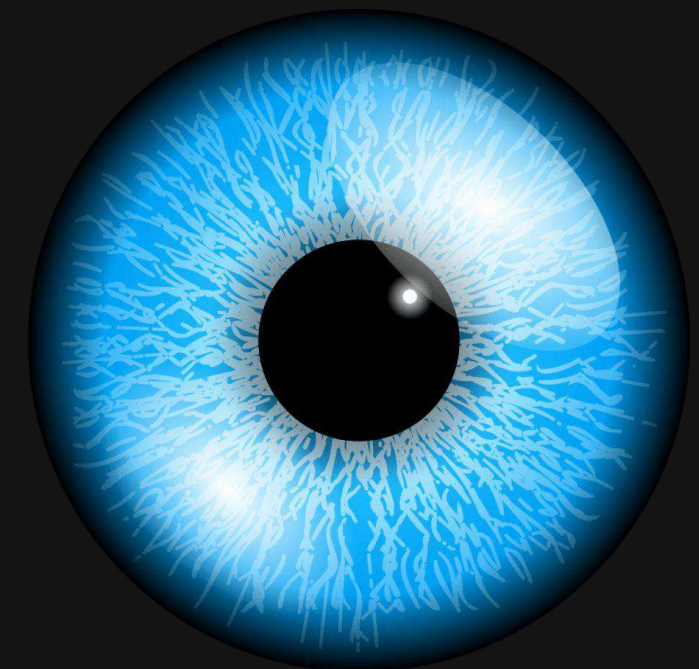
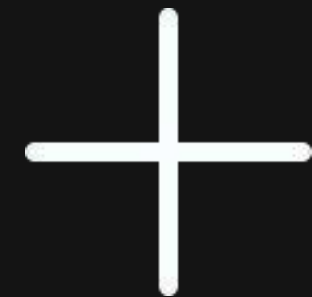
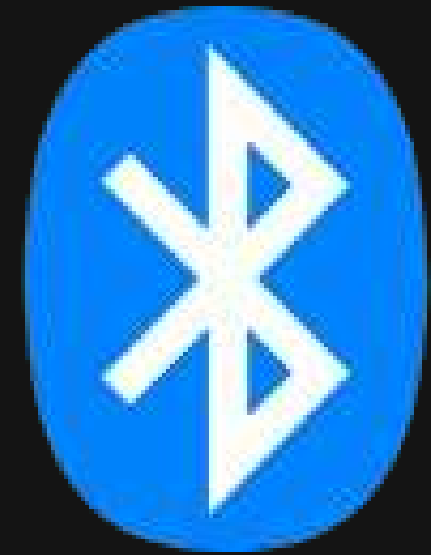
Why Blue Eye?

The Blue Eyes technology aims at creating computational machines that have perceptual and sensory ability like those of human beings

- ☆ To avoid and reduce human limitation such as
 - ~Tiredness
 - ~Oversight
 - ~Mental illness
- ☆ verify your identity, feel your presence and interact with you

What is blue eye ?

The word **blue** in the **blue eye technology** stands for **Bluetooth** which facilitates **wireless communication** and **eye** stands for the **eye movement** which allows us to obtain a lot of interesting and necessary information. The basic thought behind this technology is to give the **computer the**

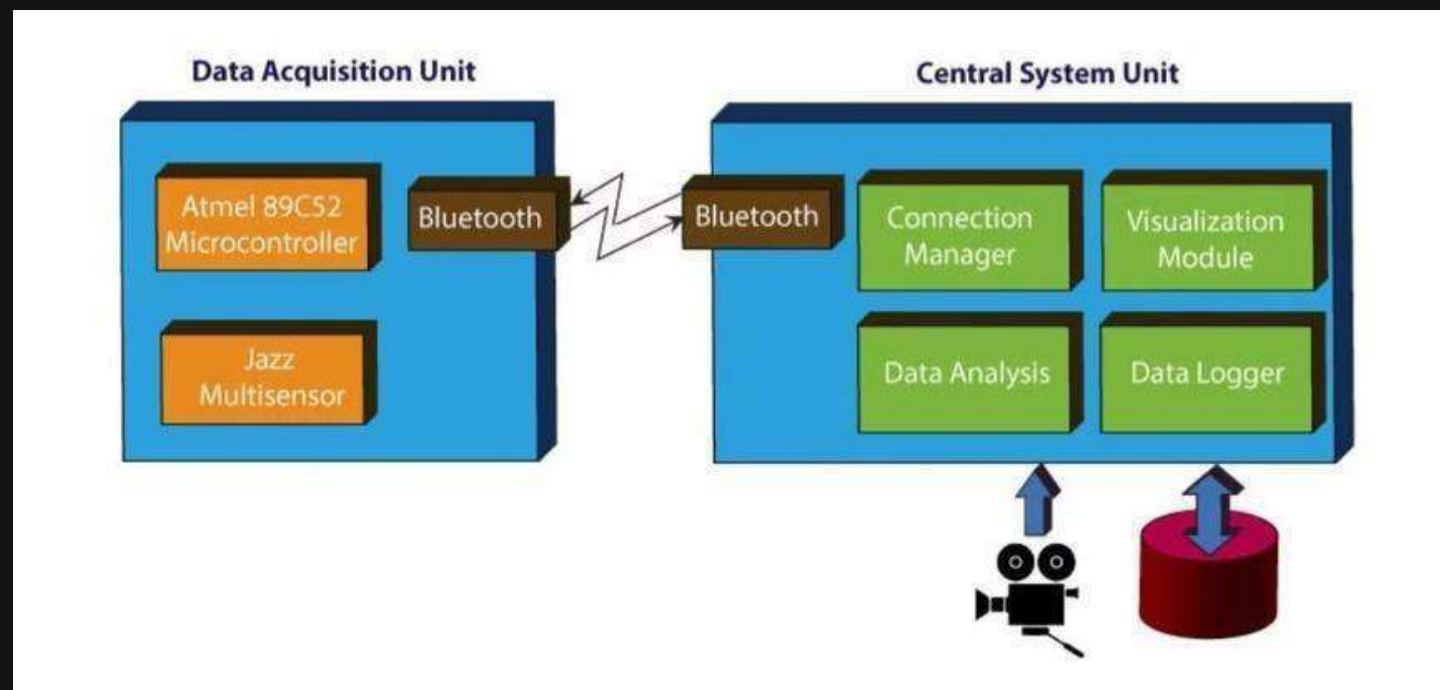


Hardware used

The Blue Eyes technology has two main hardware components - Data Acquisition Unit (DAU) and Central System Unit (CSU).

Data Acquisition Unit's main objective is to acquire data with the aid of numerous sensors such as beepers, LCD screens, LED indicators, etc., and to transfer all that data to CSU with the help of Bluetooth. It uses Atmel 89C52 as its principal component.

The Central System Unit's task is to analyze and process the data sent by DAU. It also performs access verification and system maintenance.

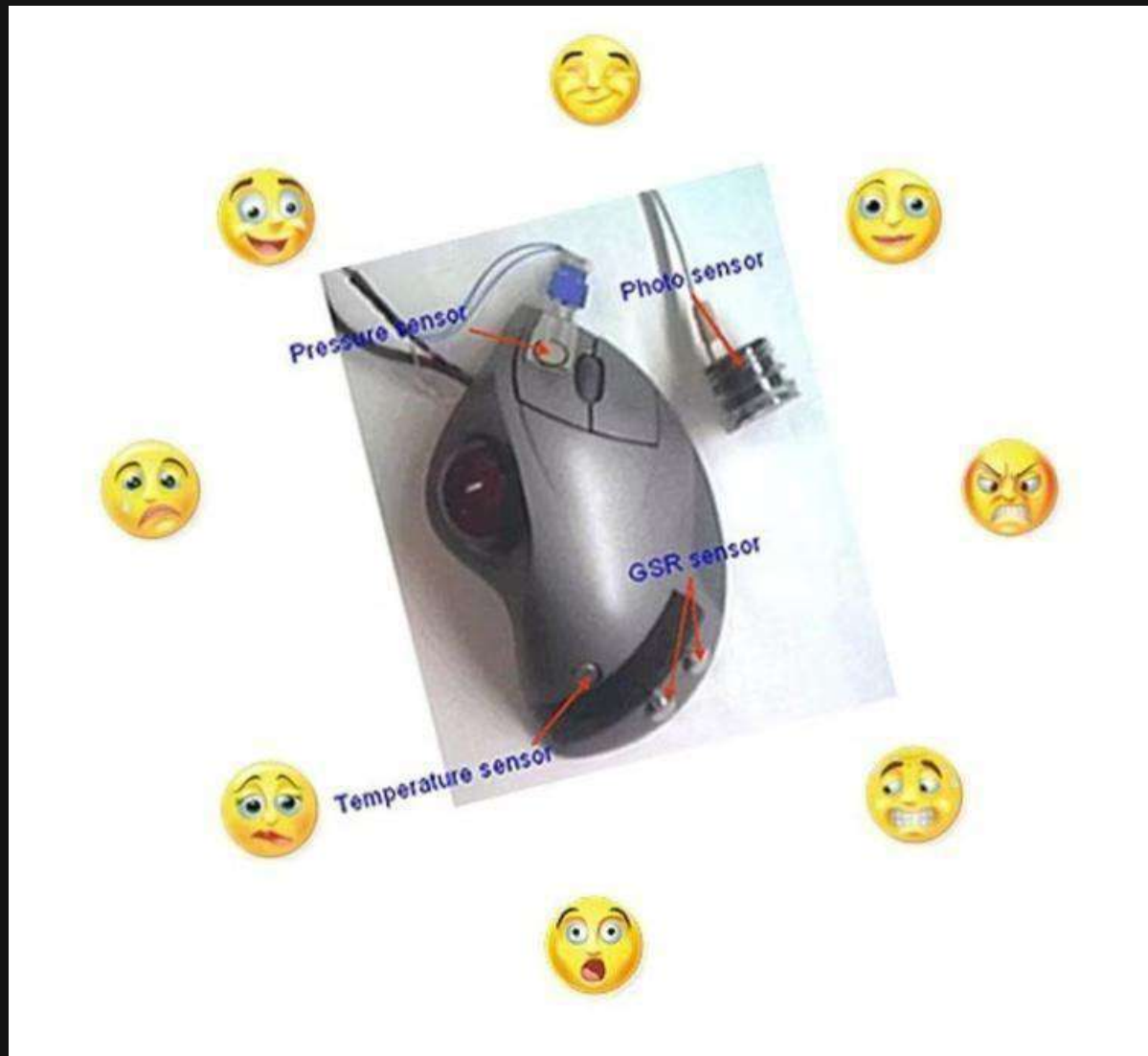


Types of Emotion sensors used

For Hand		For Eye		For Face		For Voice	
Emotional mouse		Expression Glass		Facial recognition system		Voice recognition	

Emotion mouse

Emotion mouse is an input device that looks like a conventional mouse but it serves the purpose of evaluating the emotions of the user. It has pressure, photo, temperature, and GSR sensors that can classify a user's emotions into different categories like – fear, surprise, anger, sadness, happiness, disgust, etc. while the user is interacting with the computer.



Expression Glass

Expression glasses are wearable devices that help in determining what the user is interested in at a particular time by analyzing the interaction between user and computer. These glasses remember what the user is watching and also catch the facial expressions of the user at that time. Combining that visualization with the emotion of the user gives the level of interest a user has for that thing.



Enabled device

There are some devices in which the blue eyes technology are enabled uh the first blue eye enabled mass production device was a pod it is the car manufactured by Toyota. It could keep the driver alert and active it could tell the driver to go slow if he is driving too fast.

The next device installed with blue eyes technology is pong a robot. The IBM has released a robot called a PONG which is equipped with the eye blue technology. Pong is capable of perceiving the person standing in front of it.

APPLICATIONS



- ☆ To control weapons by voice control.
- ☆ Pilot give commands to computer by speaking into microphones.
- ☆ In video games they used for realistic gaming purpose.
- ☆ Power stations

- The Blue eyes technology ensures a convenient way of simplifying the life by providing more delicate and user–friendly facilities in computing devices.
- In the forthcoming future, the idea of machines understanding emotions might be extended to machines having emotions.
- The blue eyes technology meant to be a stress reliever, driven by the advanced technology of studying the facial expressions for judgment of the intensity of stress handled.

THE WIRELESS EARPHONES



INTRODUCTION

- AirPods are wireless earbuds developed by Apple.
- Key feature is their wireless design.
- The sound quality of AirPods is optimized for rich and immersive audio experience.
- Marvelous user experience.

HISTORY

- Air Pods are a line of wireless Bluetooth earbuds created by Apple Inc., a technology company based in Cupertino, California.
- The first-generation AirPods were introduced on September 7, 2016, during Apple's annual iPhone event.
- The concept of AirPods originated from Apple's decision to remove the headphone jack from the iPhone 7.
- In March 2019, Apple released the second-generation AirPods. The updated version included the new H1 chip, which offered faster and more stable wireless connectivity and improved battery life.

COMPONENTS OF AIRPODS

Speakers

Bluetooth

PCB

SoC

Audio codec

Accelerometers

MEMS microphones

Noise cancellation

Li-ion battery

WORKING

- All components mentioned above are connected in a high precise manner to achieve the tiny and efficient device.
- Speakers are the main picture of the AirPods.
- Audio codec is the important part which converts analog signals into digital signals(ADC) and similarly digital signals to analog signals(DAC).
- Accelerometers are used in speech detection and they help to filter the external noise.
- Noise Cancellation is a process in AirPods which reduces unwanted noise and focus on desired signals only.

-
- Bluetooth which helps in wireless connection of the AirPods with the main device.
 - PCB is the Printed Circuit Board where the insane complex circuitry is constructed as thin and tiny package. It is considered as the heart of the AirPods.
 - Li – ion battery is used to store the charge for longer periods.
 - MEMS microphone(Micro Electro Mechanical Systems) is a tiny mic which captures the sound in user environment.
 - SoC (System On Chip) is an important component which helps in security purpose of the device.

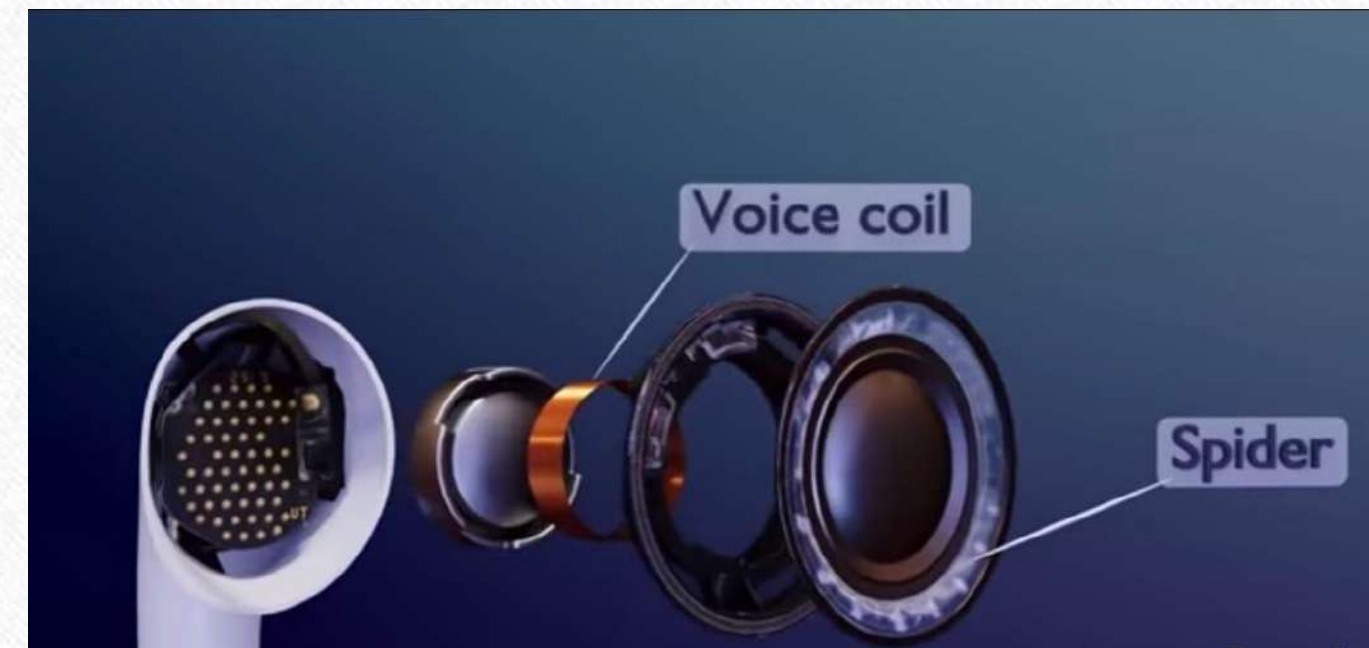
WORKING

- Detailed structure view
- The outer most layer is the tusk mesh cover and below that there is rubber protective shell and optical sensor.
- Behind this there is the speaker.
- The speaker is a tiny structure which has Diagram, Spider, Voice coil and Magnet.



WORKING

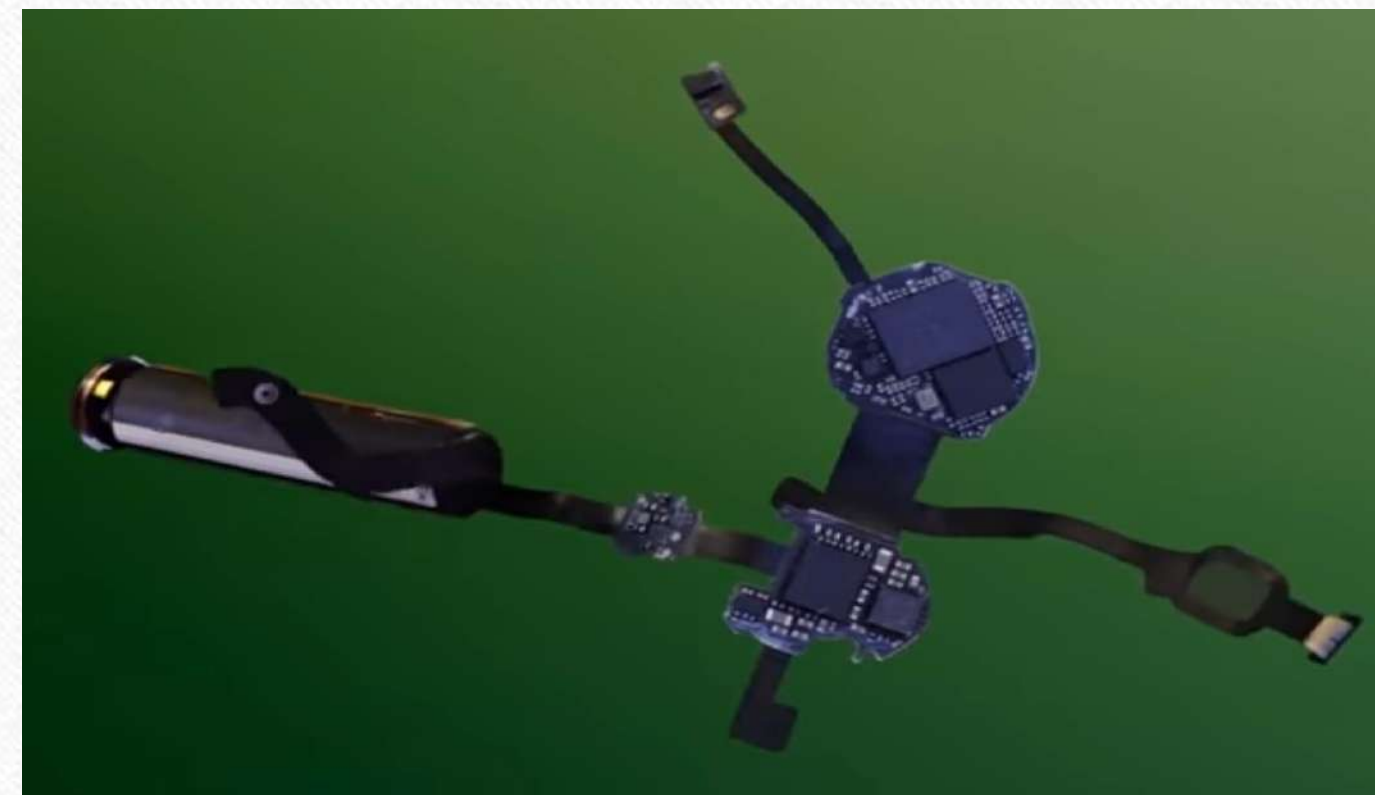
- The vibration of diagram results as the sound in the AirPods, which are supported by the spider which acts as the suspension.
- The voice coil and the magnet acts as the core to produce the vibration in the diagram.
- Following this there is an complex Circuitry made as tiny package.



WORKING

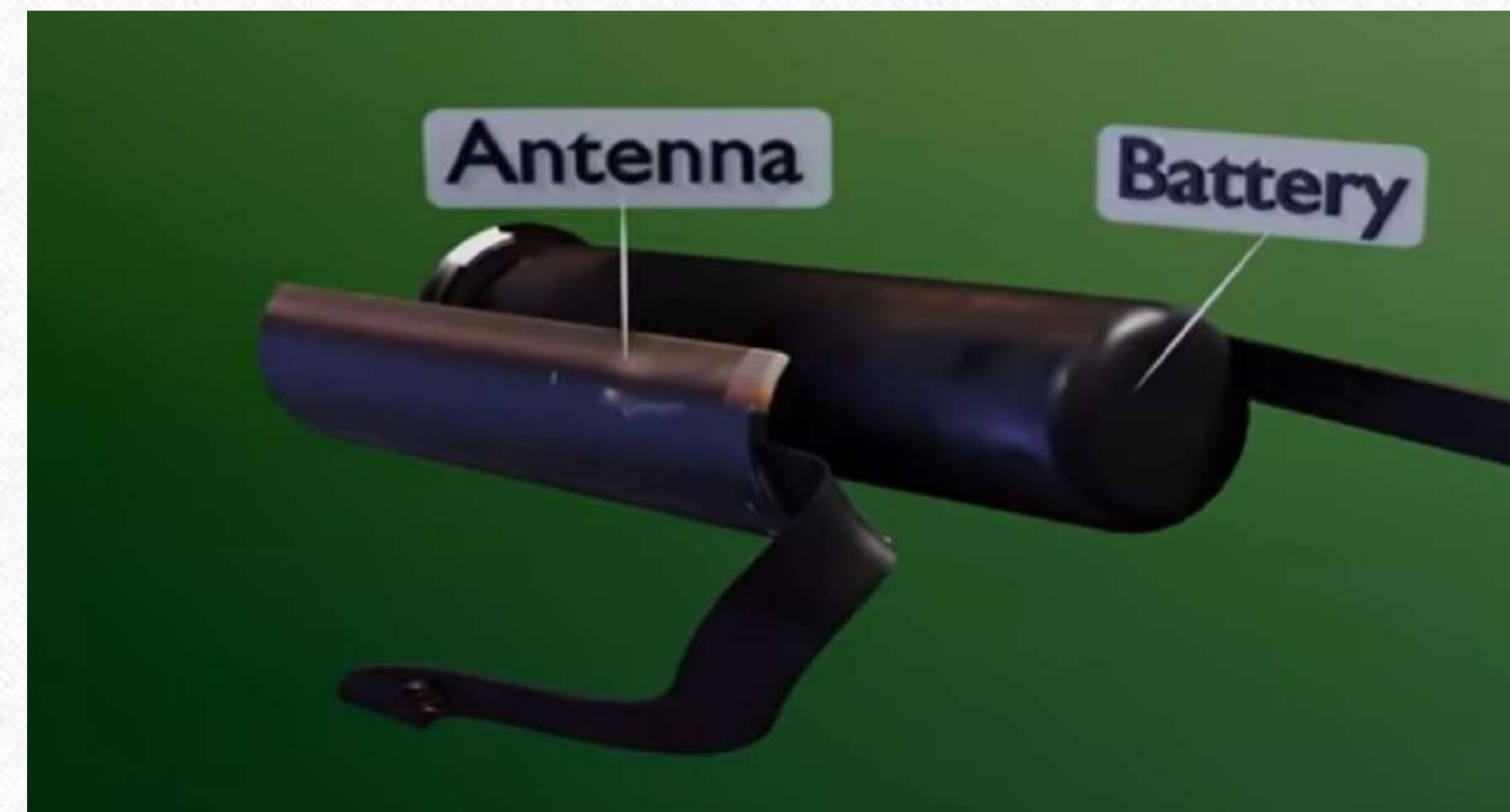
- The circuitry is made up of three PCB boards connected with flexible wires.
- The top board, Codec board and support board.
- The top board has two points where the speakers are connected.

They are also connected with Accelerometers, Bluetooth, Soc, audio codec and support board.

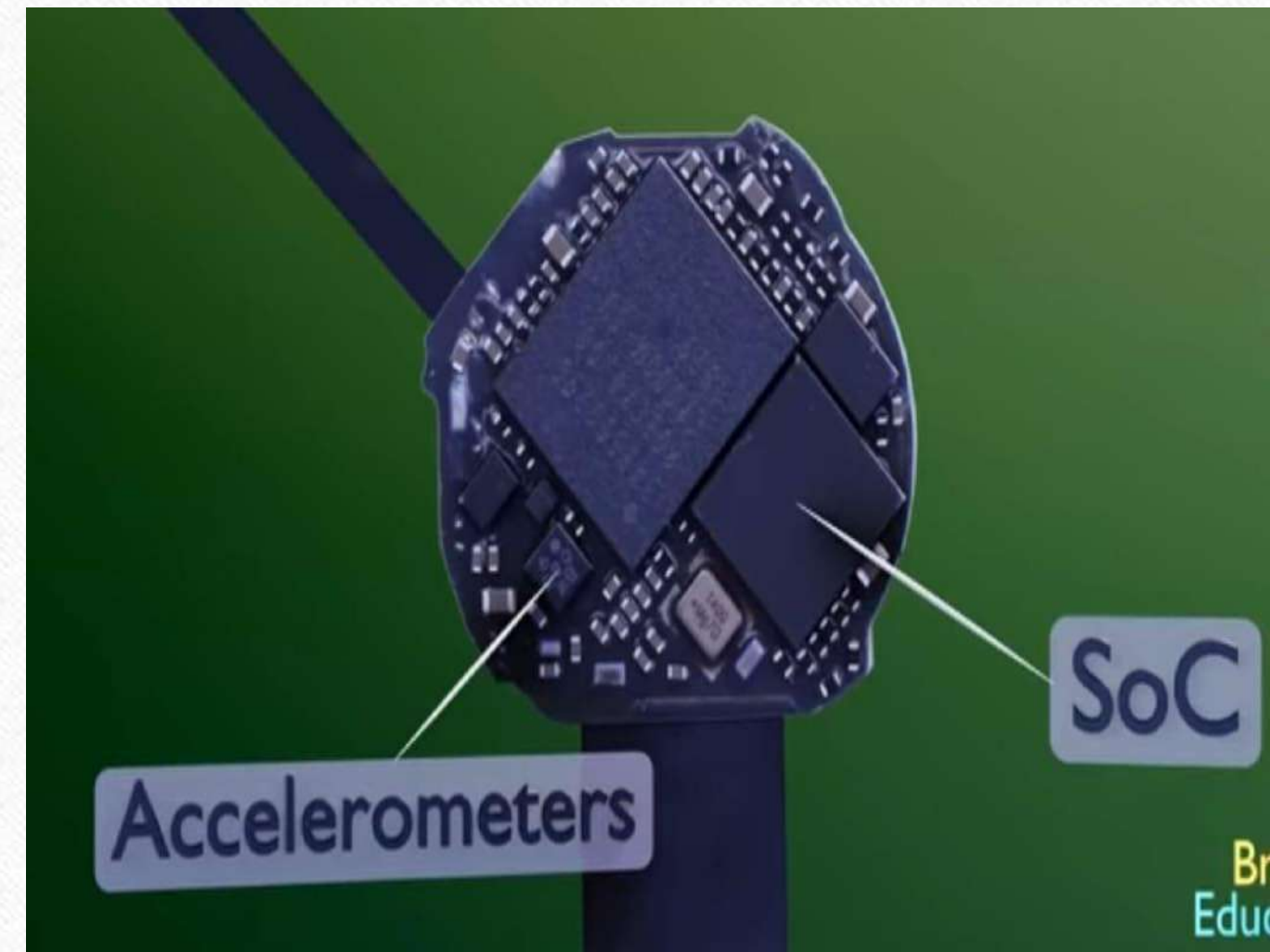
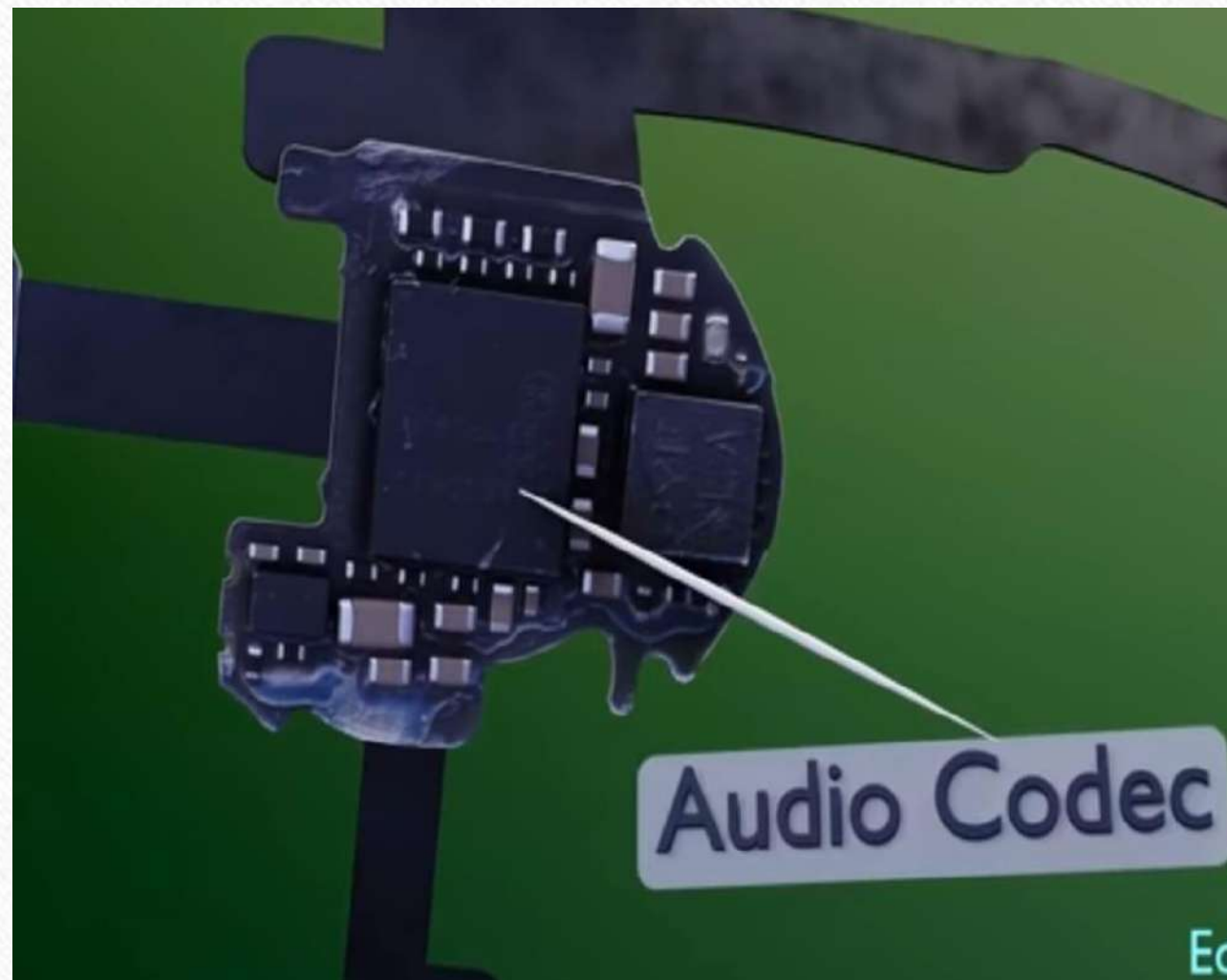


WORKING

- The MEMS microphone is connected to the support board with the charging pins.



WORKING

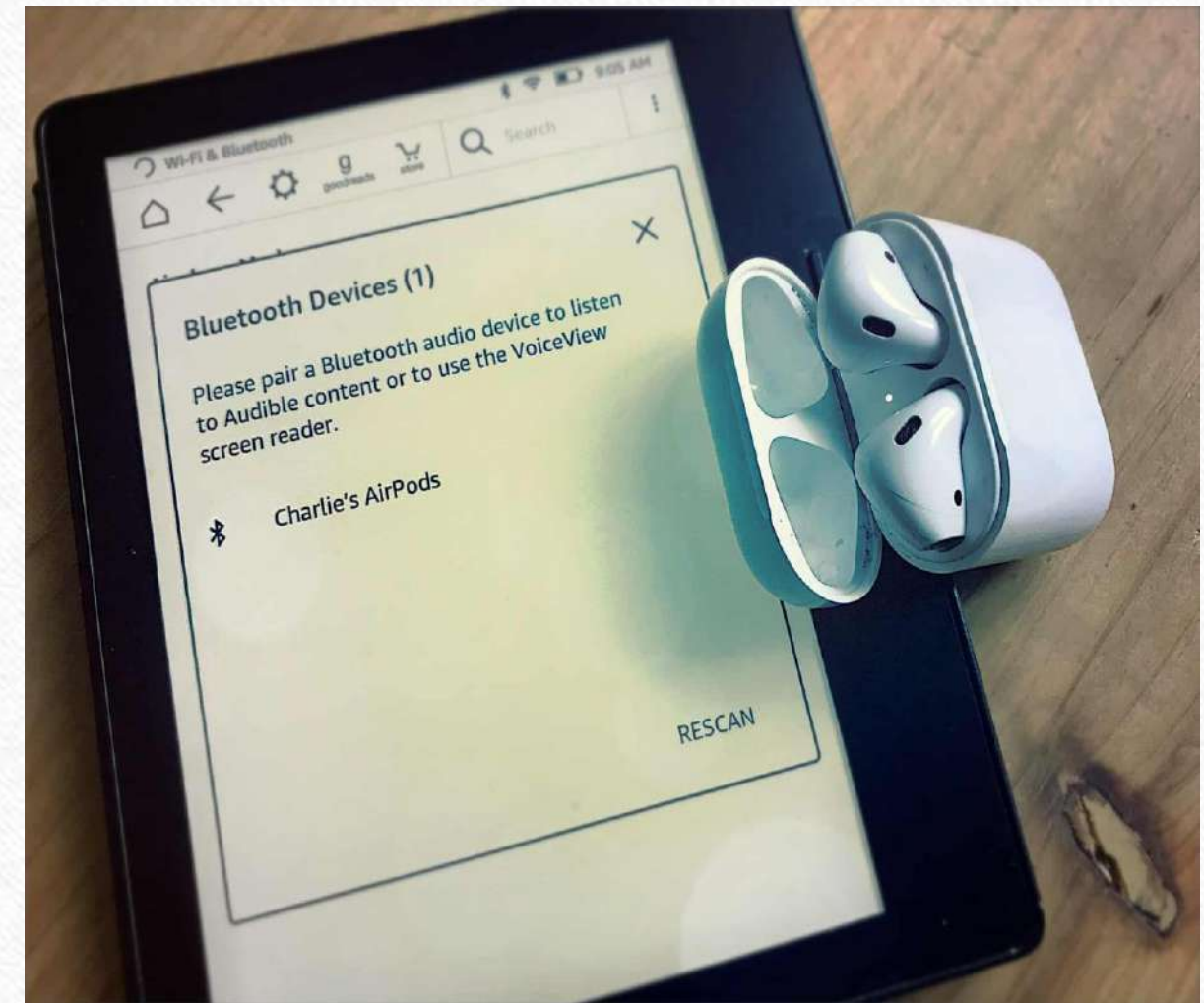


WORKING

- The mobile or any other devices can be connected to the AirPods using the Bluetooth connectivity.
- The analog data will be converted into digital form and transferred from the device to the AirPods by bluetooth and then the digital signal is converted into analog signal by using Audio Codec.
- The process of converting these analog values into digital ones is known as Digitization process.

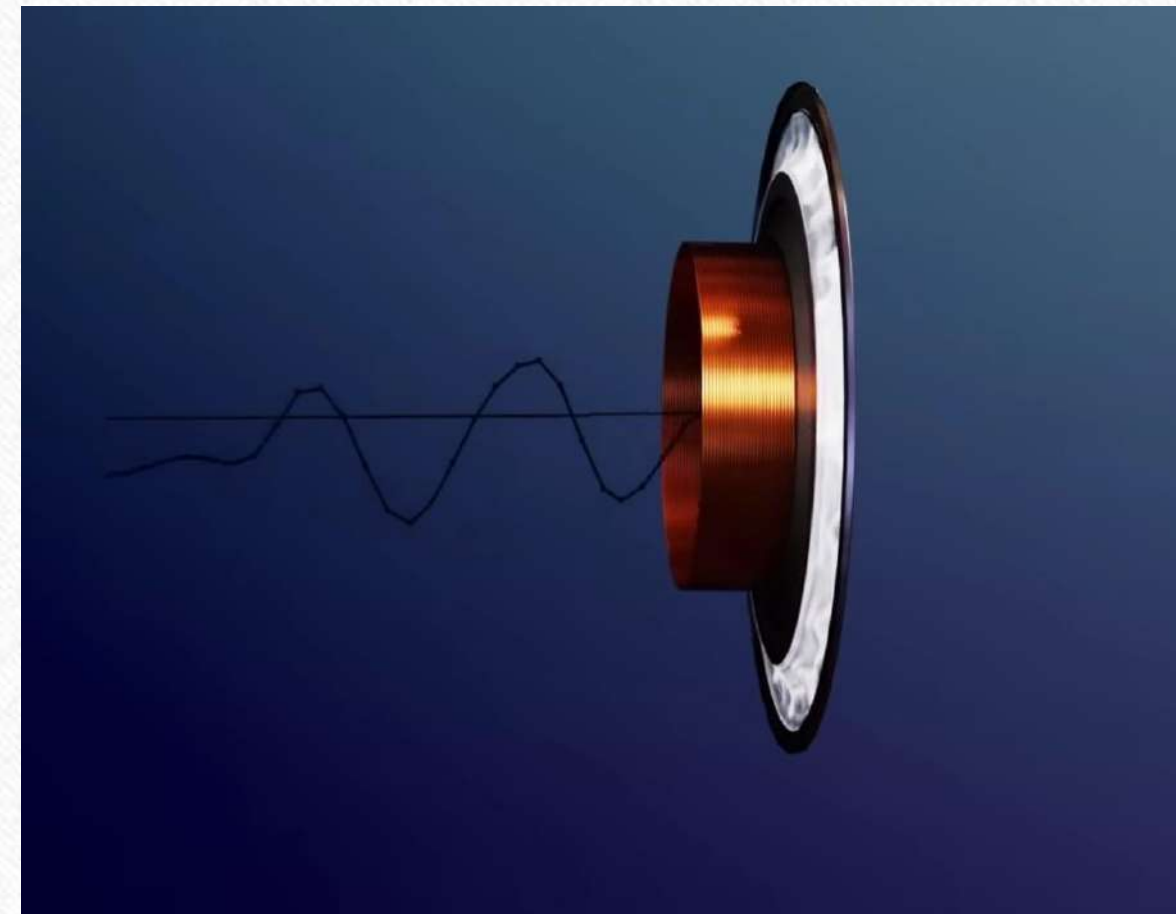
WORKING

- The compressed audio is stored in the mobile and they are stored as numbers. The numbers will be transmitted as packets according to Bluetooth's specifications. These packets are sent as electromagnetic waves and photons.



WORKING

- The received data are decompressed at the top board and then sent to the Audio codec to derive the actual analog signal.
- The signal from codec moves the voice coil.
- This vibrates the diaphragm as a result pressure waves are created, which are sensed as sound by the brain.



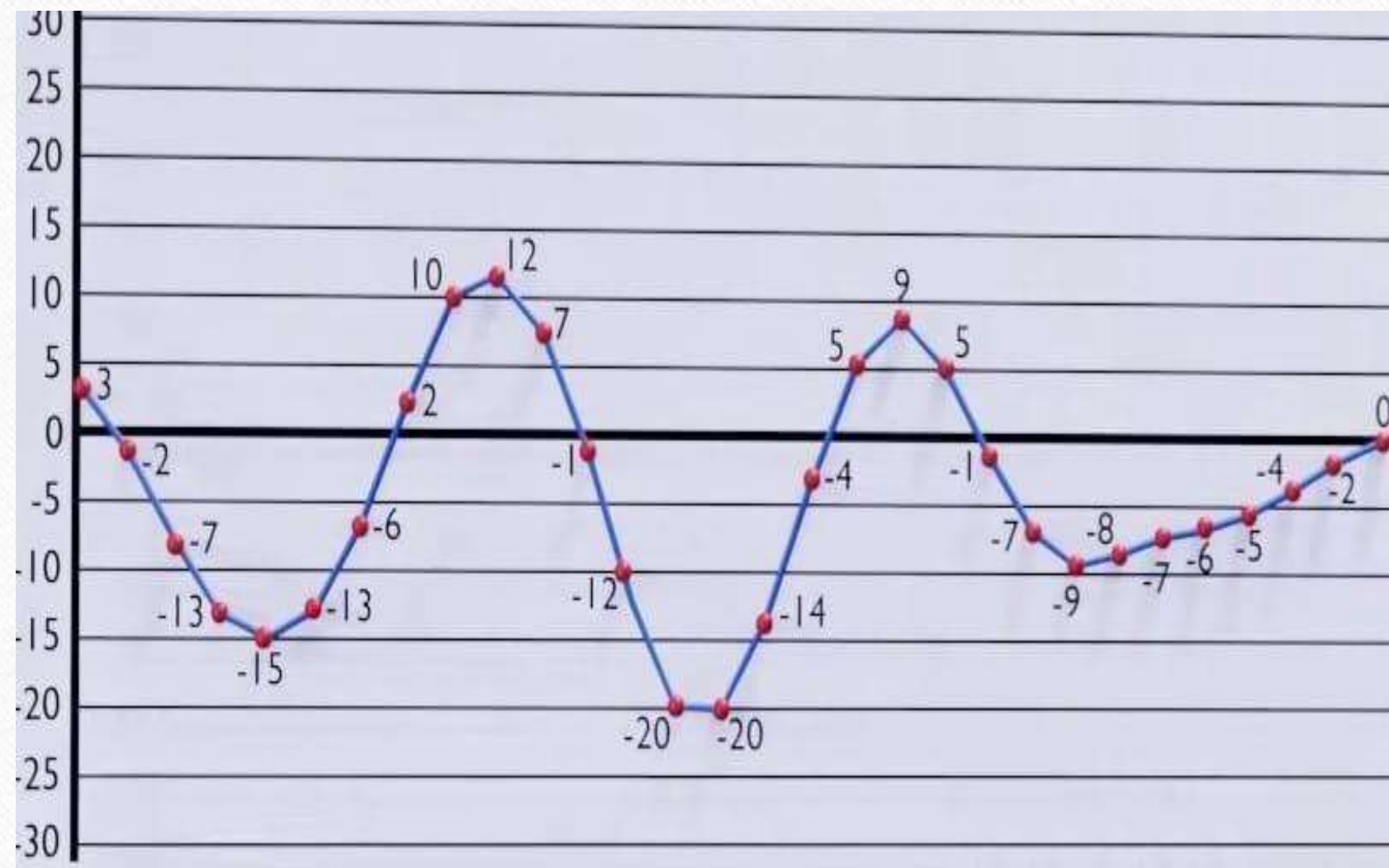
WORKING OF CODEC

- Every file in the modern day is compressed at transmitter end and decompressed at the receiver end.
- This process is carried out by Codec(Coding and Decoding).
- There are different types of codec available depending on the data present.
- In the Airpods the Audio Codec is used for DAC and ADC conversion.

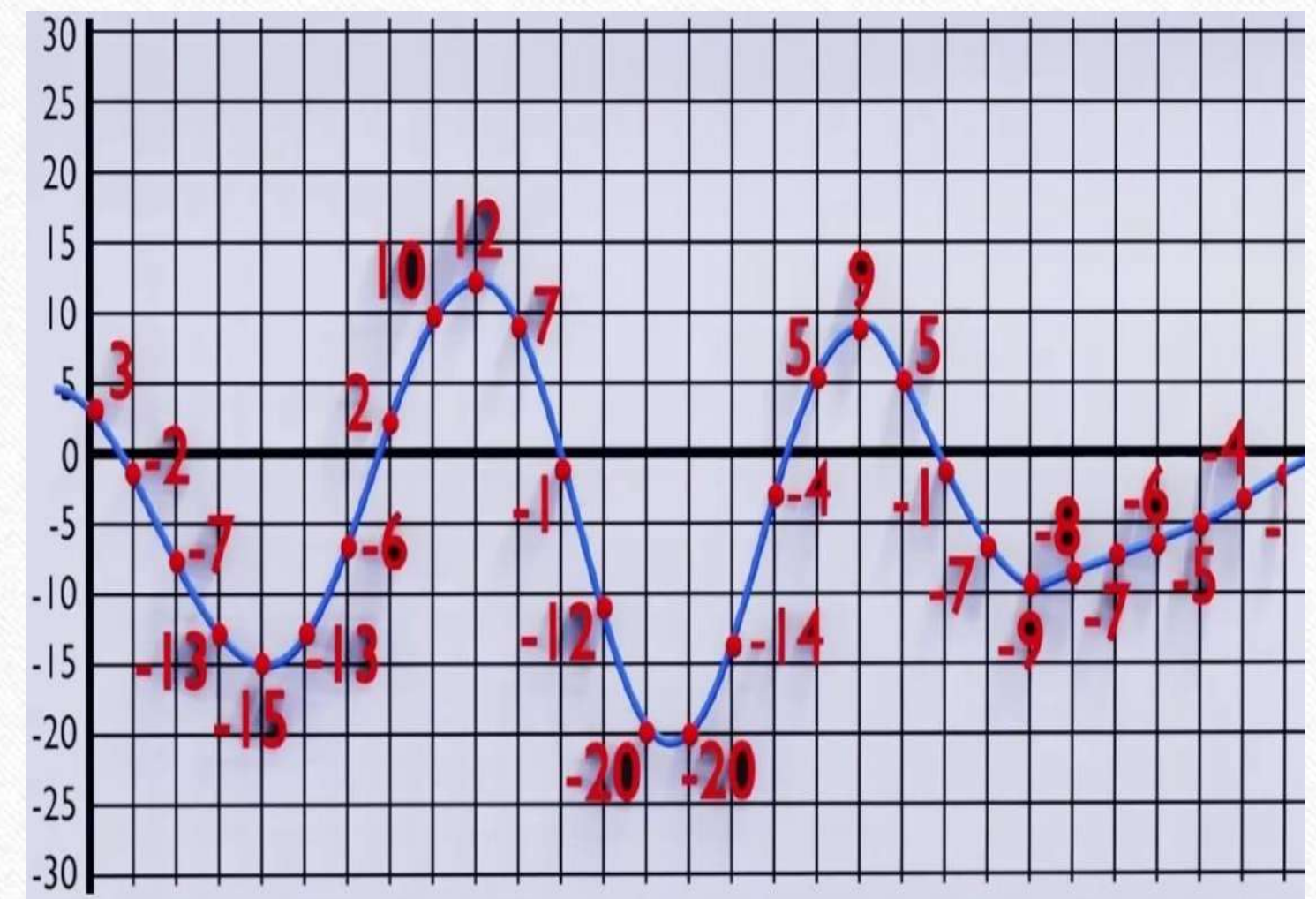
WORKING OF CODEC

- The Codec considers a time period 23 micro second for converting analog values into digital numbers between two data points in ADC conversion.
- Similarly it considers 23 micro seconds to plot the digital data on the graph and they are joined to form the analog audio signal,
- The analog audio hits the diaphragm.
- The time between two data sets is 23 micro seconds as when we prefer for lesser time than 23 micro seconds then the audio signal frequency may go beyond 20 kilo hertz which we may not hear it.

WORKING OF CODEC

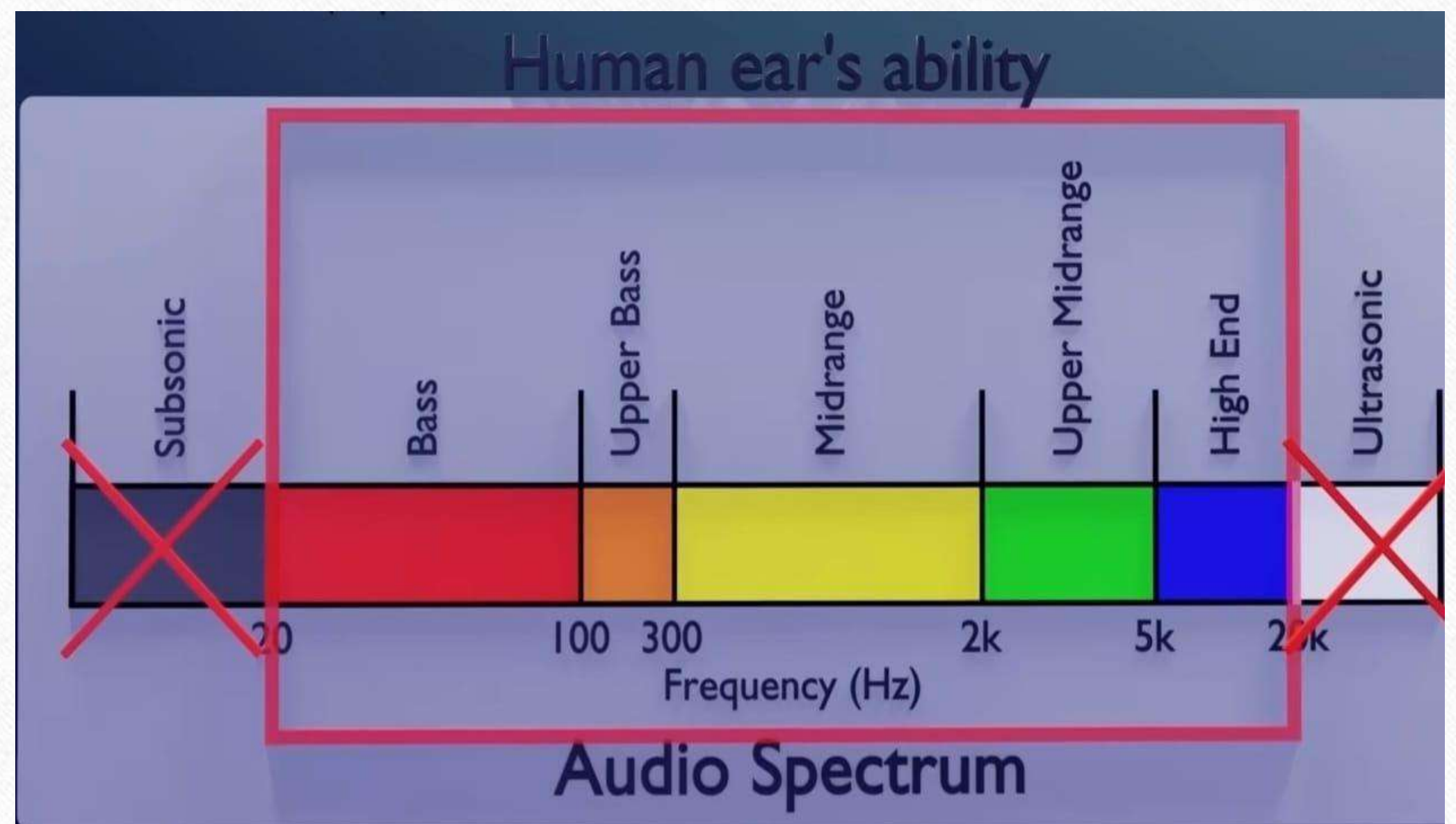


DAC



ADC

WORKING OF CODEC



APPLICATION

- Wireless convenience: AirPods offer the convenience of a truly wireless listening experience, without the need for any cords or wires.
- Comfortable fit: AirPods are designed to fit comfortably in the ear, with a unique shape that conforms to the shape of the ear.
- Improved audio quality: AirPods Pro feature active noise cancellation, which uses advanced algorithms to block out external noise and provide a more immersive audio experience.
- Good battery life: AirPods offer good battery life offering up to 4.5 hours with noise cancellation turned on

IN TAKE

- The massive mechanism behind the small structure would definitely given you a blow.
- We can see the growth of our field in the modern era and we should definitely have our hands in future to the technological development of our country.

PAPER BATTERY

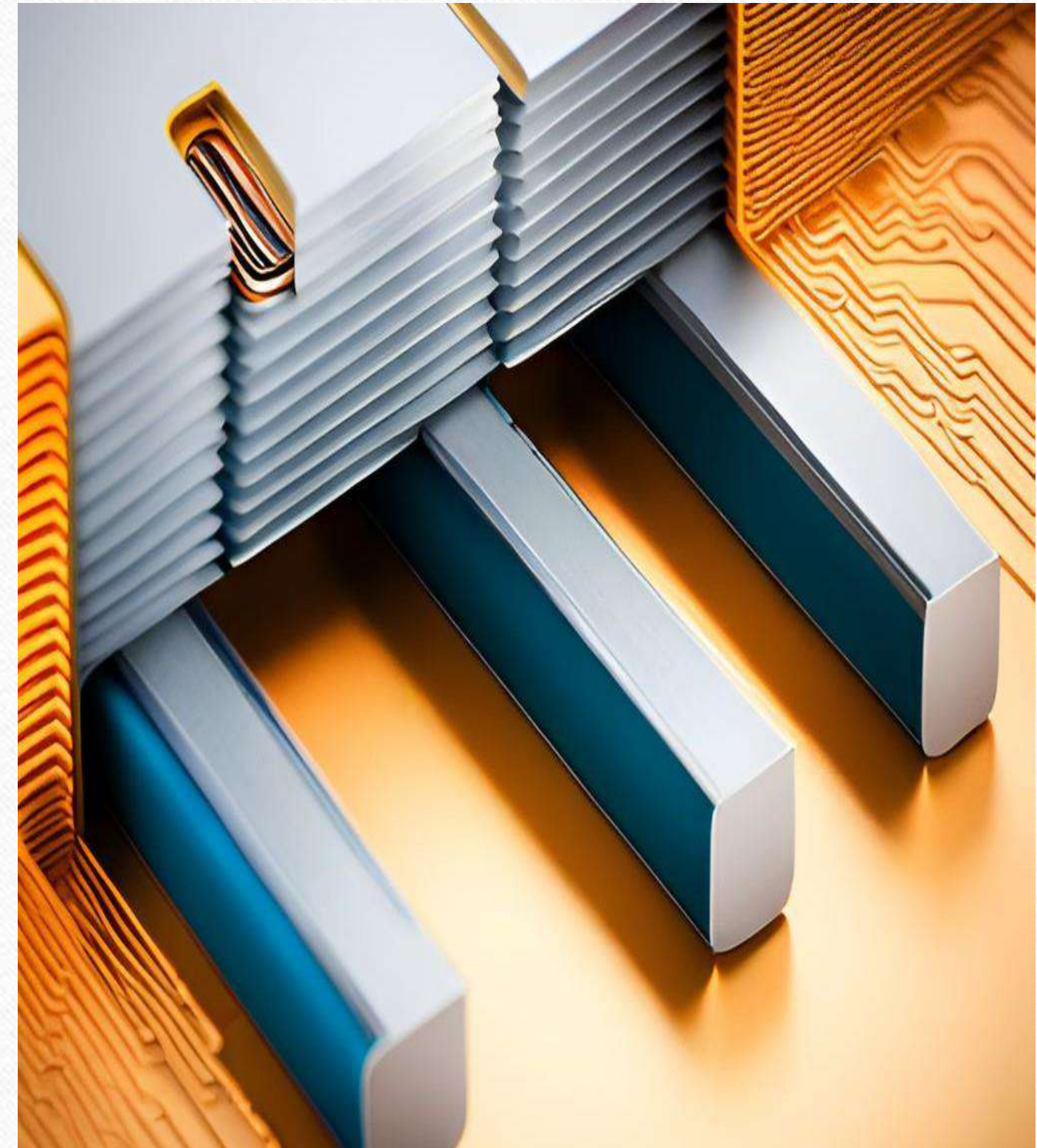


INTRODUCTION

This presentation will discuss the innovative concept of paper batteries

The paper battery was first developed in 2007 by researchers at Rensselaer Polytechnic Institute.

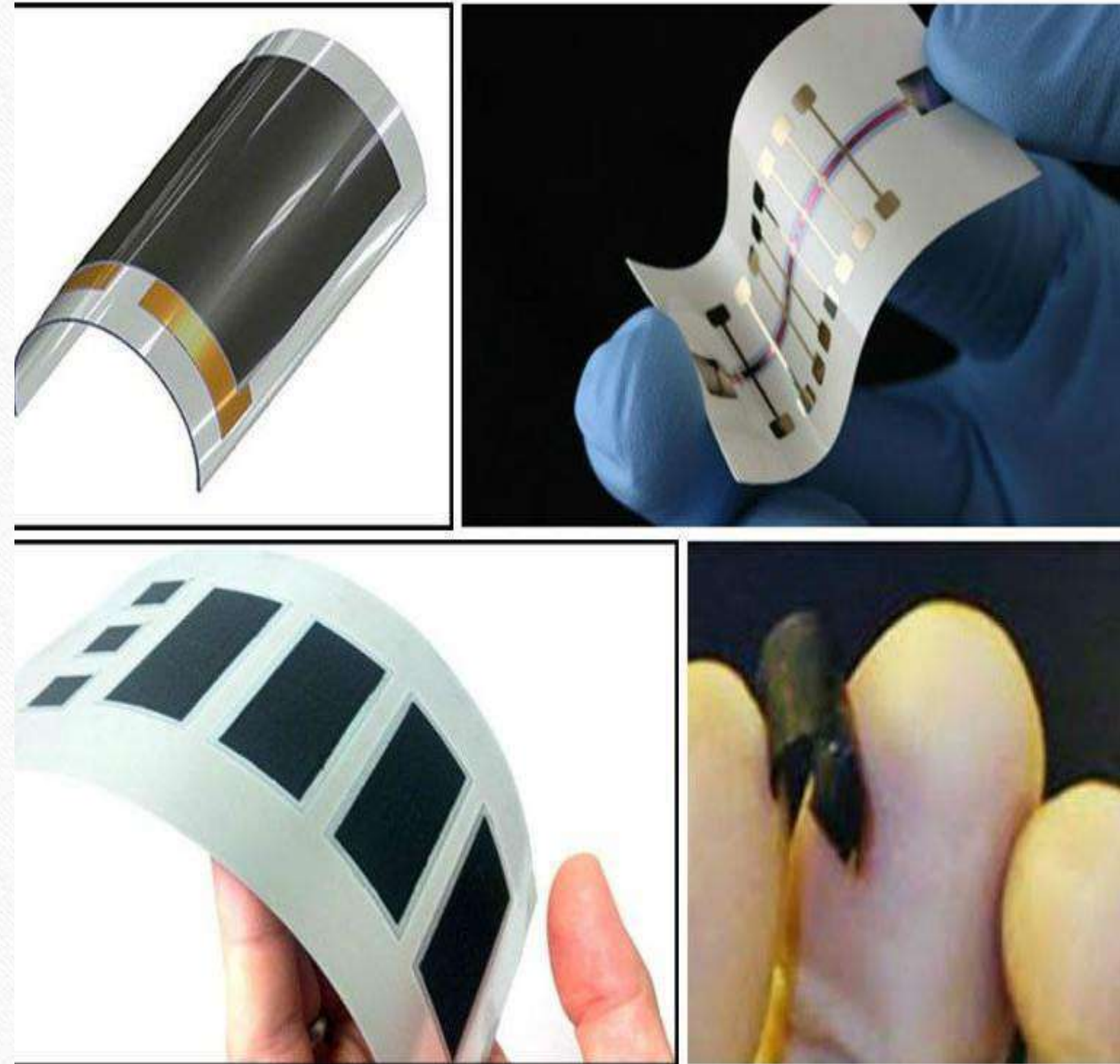
Since it has gained significant attention due to its potential applications in various fields such as electronics, medical devices, and renewable energy systems.



What is paper battery?

A paper battery is a type of energy storage device that combines the properties of both batteries and supercapacitors, with the added benefit of being flexible and environmentally friendly.

The basic structure of a paper battery consists of a cellulose-based paper substrate that is coated with a conductive material, such as carbon nanotubes or silver nanowires, and an electrolyte, which allows for the flow of ions between the electrodes.



How paper battery works?

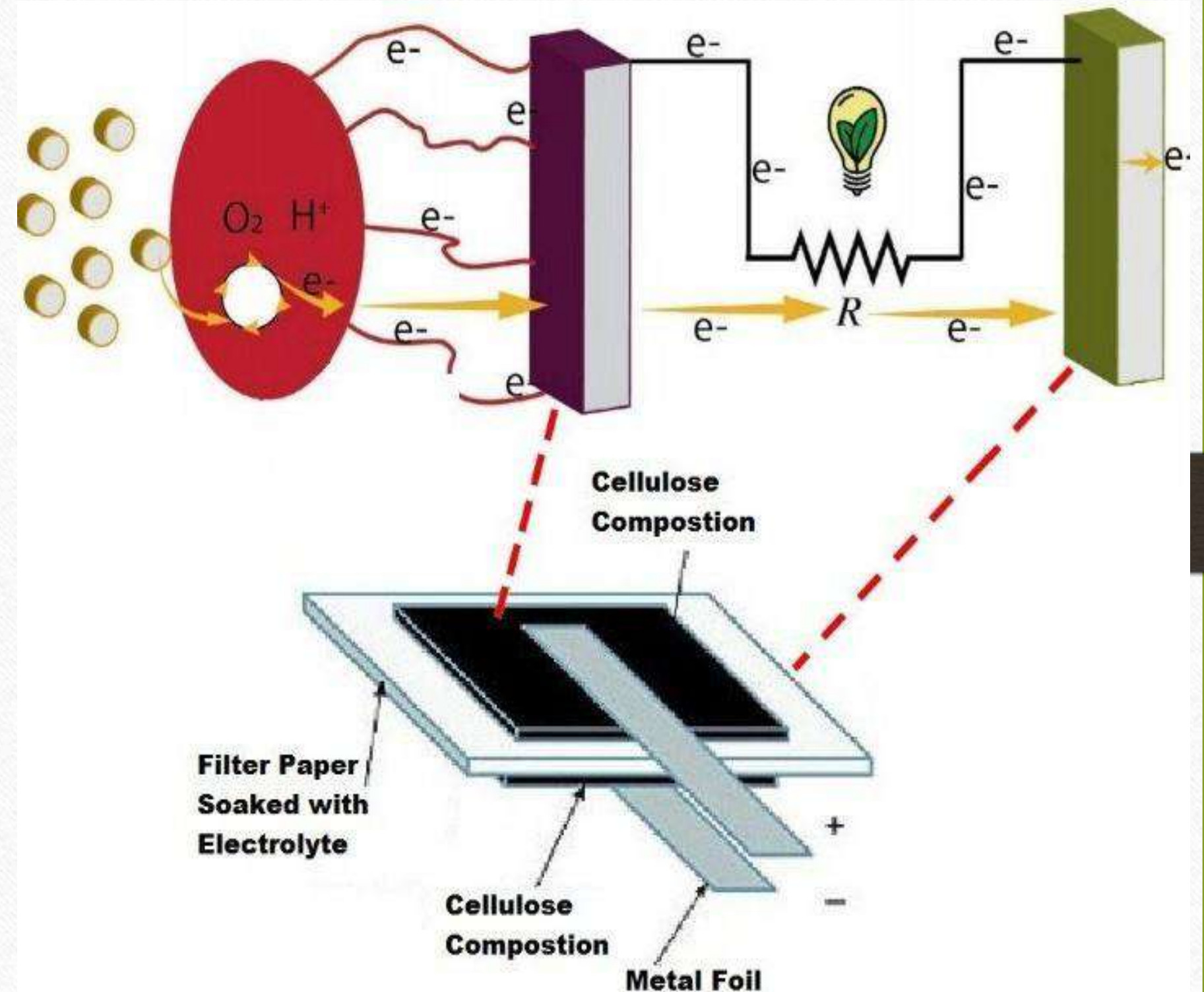
A PAPER BATTERY CONSTRUCT
OF FOLLOWING COMPONENTS :

CATHODE: Carbon Nano Tubes (CNT)

ANODE: Lithium metal(Li+)

ELECTROLYTE: All types of electrolytes(including bio electrolyte like sweat, blood)

SEPARATOR: Paper(cellulose)



Types

- **Zinc-manganese dioxide paper battery:** This is a type of primary (non-rechargeable) paper battery that uses zinc as the anode, manganese dioxide as the cathode, and an acidic electrolyte.
- **Carbon nanotube paper battery:** This type of paper battery uses carbon nanotubes as the electrodes, which are coated onto a paper substrate.
- **Lithium-ion paper battery:** This is a rechargeable paper battery that uses lithium as the anode and cathode materials with an electrolyte
- **Microbial paper battery:** This type of paper battery uses bacteria as a source of energy, converting organic matter into electrical energy through the process of microbial respiration. These batteries are eco-friendly
- **Hybrid paper battery:** Hybrid paper batteries can store and deliver energy more efficiently than traditional batteries and can be used in a wide range of applications.



Advantages

>> Eco-Friendly: Paper batteries are made from eco-friendly materials which are biodegradable and recyclable

>> Lightweight and Flexible: Paper batteries are ideal for use in portable devices like smartphones, wearables, and medical devices

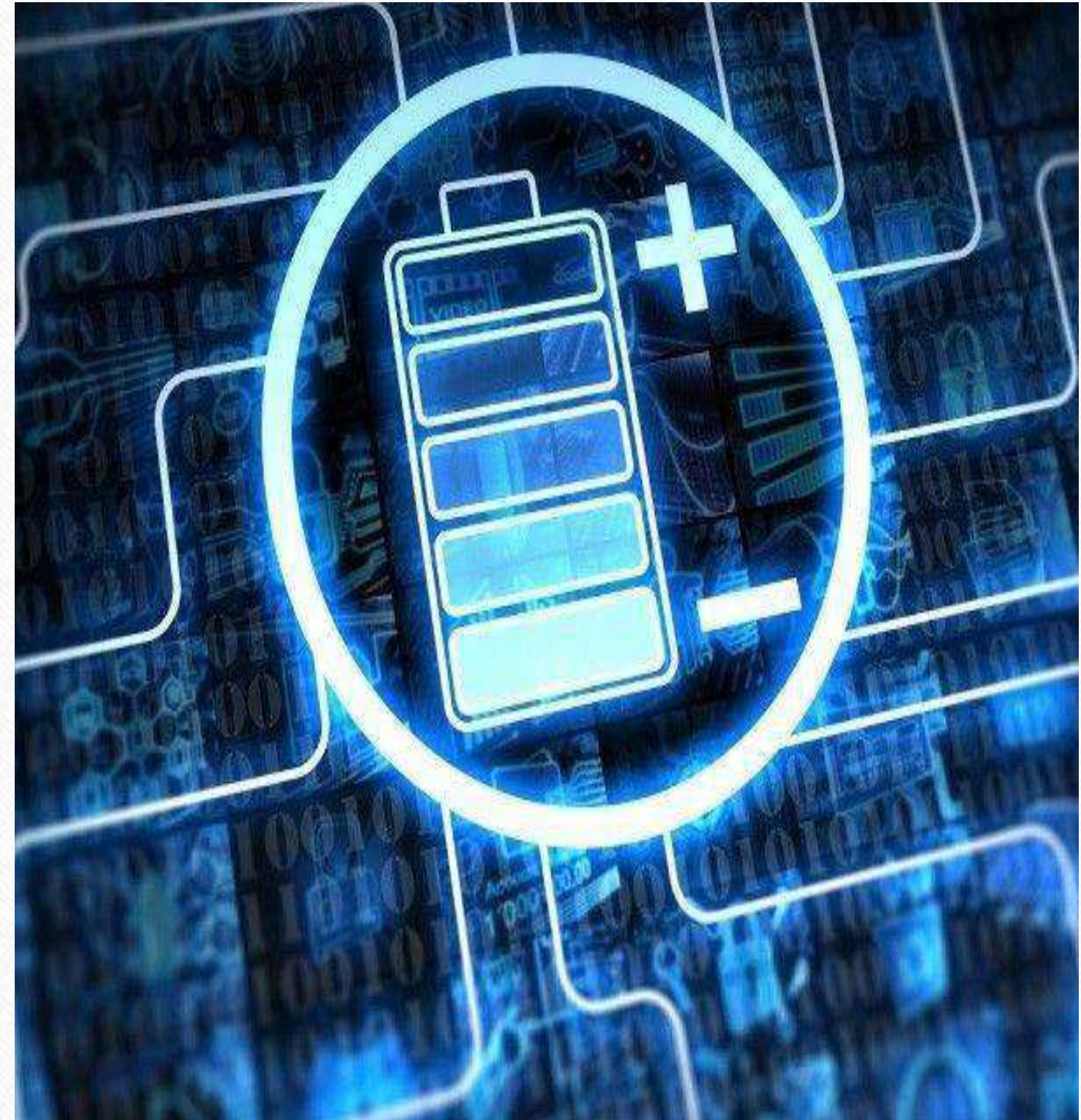
>> Cost-Effective: Paper batteries are made using low-cost, readily available materials which makes them cost-effective and easy to produce on a large scale.

>> Fast Charging: Paper batteries can be charged and discharged quickly, which reduces the charging time for electronic devices and improves their usability.



Limitations

1. Energy Density
2. Stability
3. Manufacturing complexity
4. Integration complexity
5. Environmental sensitivity
6. Safety concern
7. Performance variability
8. Safety concern
9. Scalability



Challenges and Future Developments

Despite the numerous advantages of paper battery, there are several challenges that need to be addressed

One of the main challenges is improving the energy density and capacity of the battery, as well as increasing its durability and stability.

In the future, researchers are exploring new materials and manufacturing techniques to improve the performance of paper batteries

They are also investigating the possibility of integrating paper batteries with other technologies such as solar cells and wireless charging, further expanding their potential applications.



Applications

- **Medical Devices:** They offer a safe and reliable power source for these devices, which can improve patient outcomes and reduce the risk of infection.
- **Wearable Technology:** Paper batteries can be used in wearable devices such as smartwatches, fitness trackers, and other health monitoring devices.
- **Internet of Things (IoT) Devices:** Paper batteries can power low-power IoT devices such as sensors, beacons, and smart home devices. It can be easily integrated into a range of IoT devices.
- **Energy Storage:** Paper batteries can be used to store energy. They offer an alternative to traditional batteries and can help to reduce the reliance on fossil fuels for energy storage.
- **Education:** Paper batteries can be used in educational settings to teach students about renewable energy and sustainability.



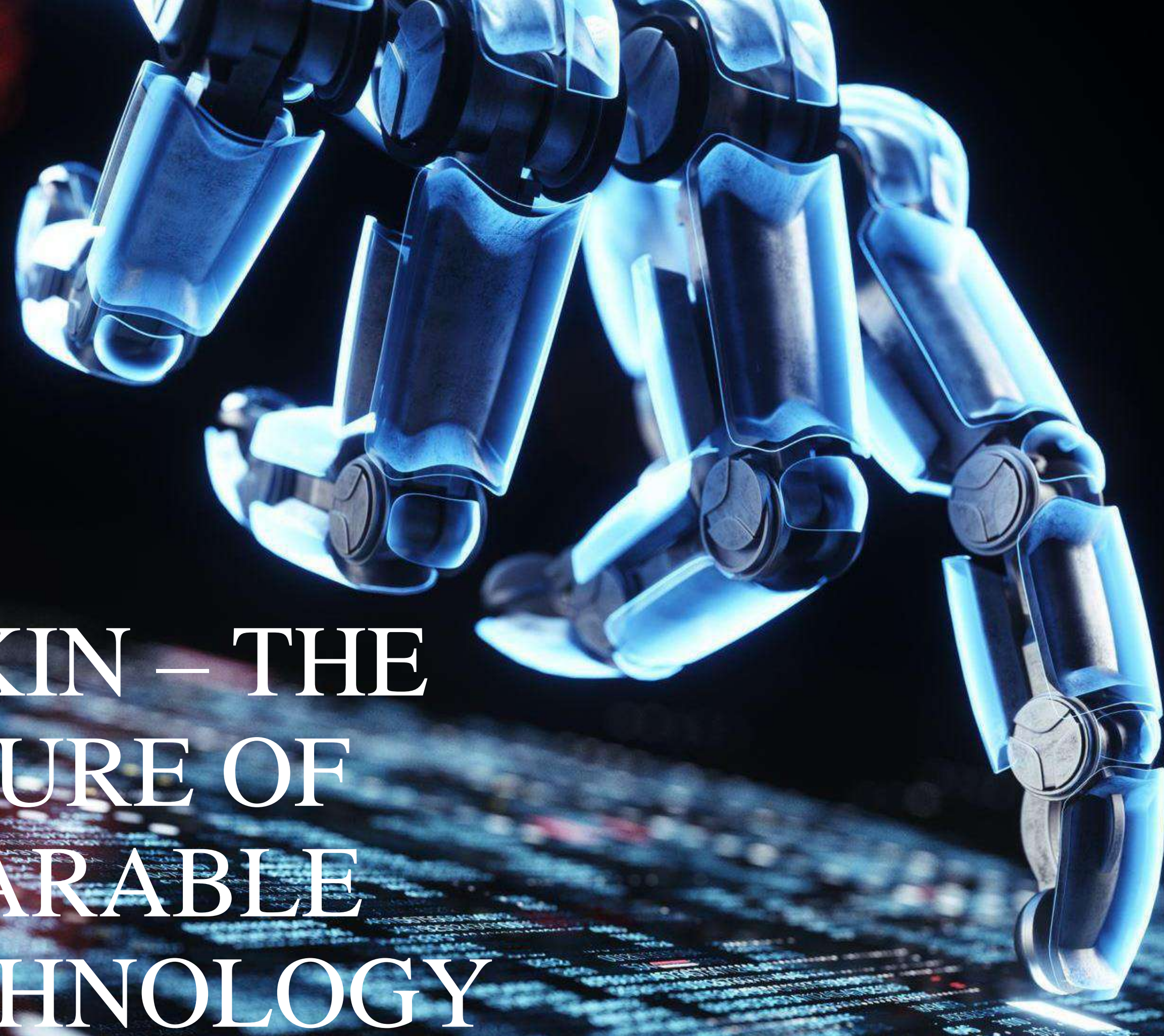
Application

In conclusion, paper battery is a promising technology that has the potential to revolutionize the energy storage industry

While there are still challenges that need to be addressed, the future of paper battery looks bright with ongoing research and development efforts

It is likely that we will see more innovative applications of paper battery in the coming years, leading to a more sustainable and efficient energy future.





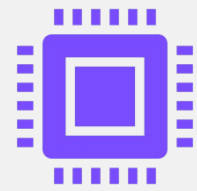
E-SKIN – THE FUTURE OF WEARABLE TECHNOLOGY

WHAT IS WEARABLE TECHNOLOGY?

Wearable technology refers to electronic devices that can be worn on the body as accessories or clothing, such as smartwatches, **fitness trackers, smart glasses**, and even e-skin.

The benefits of wearable technology include improved health and fitness tracking, convenient access to notifications and other information, **increased safety and security**, and the ability to automate certain tasks.

WHAT IS E-SKIN?



E-skin is a type of wearable technology that consists of electronic sensors and **flexible materials** that can be worn on the skin. It detects data, such as temperature, pressure, and humidity, and can transmit this data wirelessly



E-skin is a flexible and **stretchable substrate**, such as a polymer or a thin film. This allows the e-skin to conform to the shape of the **wearer's skin**, **providing a comfortable** and non-intrusive experience.

STRUCTURE OF E-SKIN

*TACTILE SENSOR ARRAY IS
COLLECTION OF ALL
SENSORS PLACED ONE
ANOTHER*

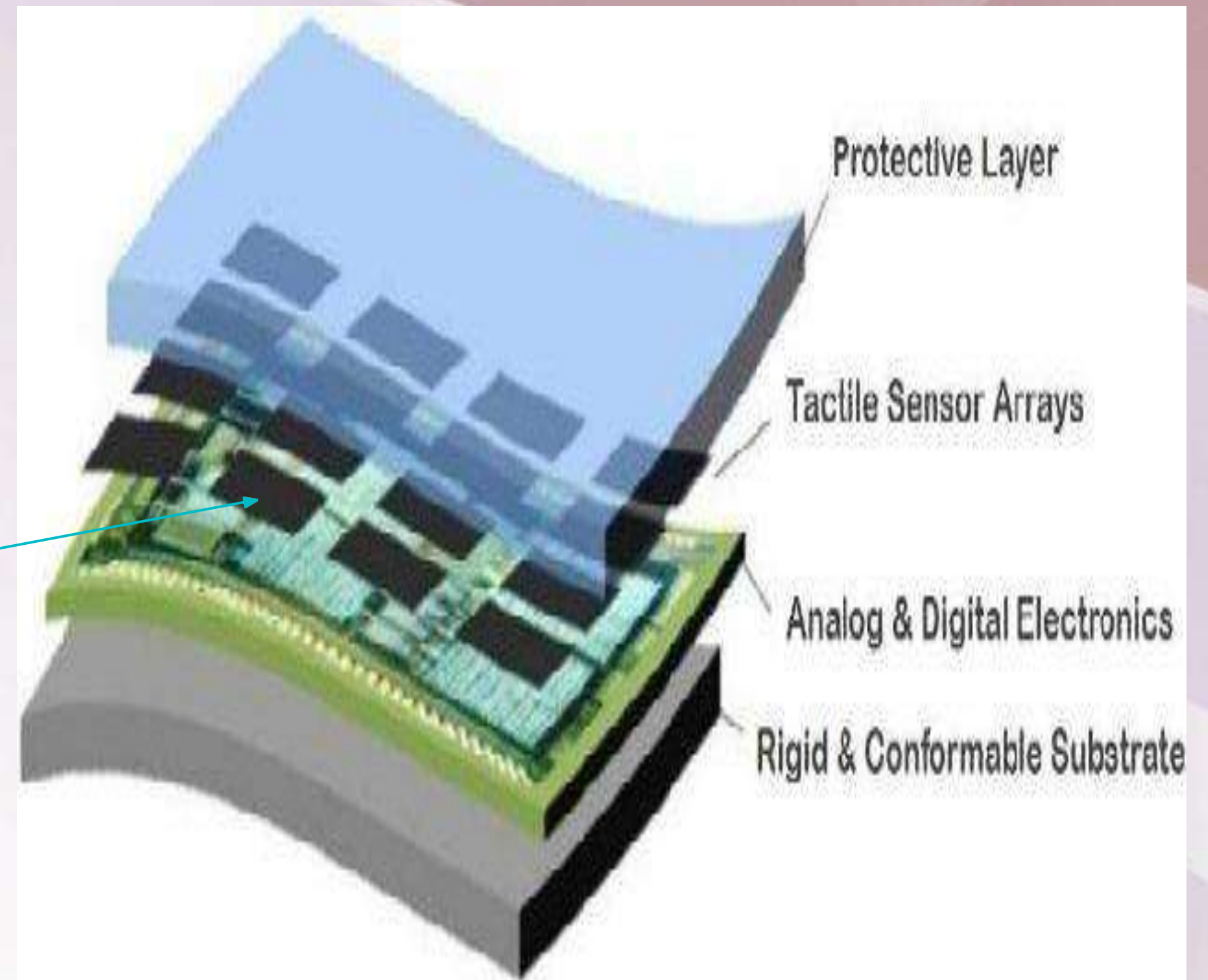


Fig. 1. A conceptual drawing of e-skin structure.

COMPONENTS

Substrate: It provides the foundation for the e-skin device which is **flexible and stretchable** material, such as a **polymer or a thin film**. The substrate also provides a **protective layer** for the electronic components, shielding them from the environment.

Sensors: It detects **temperature, pressure, and humidity**. These sensors are typically made from materials such as **graphene, carbon nanotubes, or conductive polymers**. Some e-skin sensors are also capable of **self-healing**

Electronics: The electronics in e-skin are responsible for **processing and transmitting** the data collected by the sensors. These electronics can include **microcontrollers, wireless communication modules**. The electronics are typically integrated onto the substrate, either by **printing or deposition** techniques

1.HOW DOES E-SKIN USED IN SPORTS

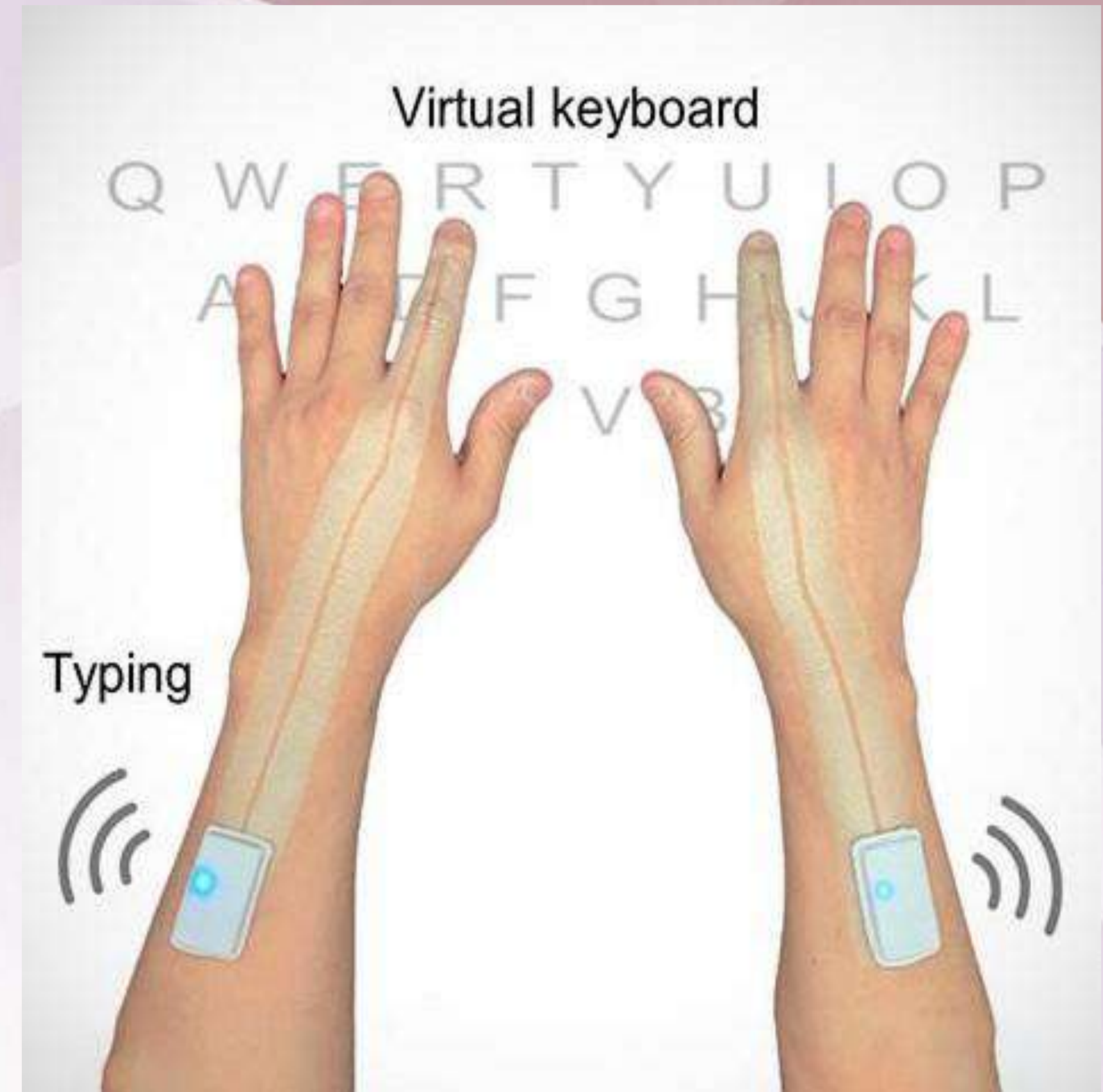
- Performance tracking: E-skin sensors could be integrated into sportswear to track **athletes' movements and physical exertion.**
- Injury prevention: Helping to identify **potential injuries before they occur.**
- Rehabilitation: To track the progress of athletes during **injury rehabilitation and** helping for their **recovery plans and avoid further injury.**
- Virtual reality: E-skin could be used to create more immersive **virtual reality sports experiences**, allowing users to feel the impact
- Sports equipment: Adding sensors to **golf clubs to track the trajectory of the ball or to tennis rackets to measure the force and spin of a hit.**

2. USES OF E-SKIN IN ROBOTICS

- Sensing: E-skin can be used to give robots a **sense of touch**, which is essential for handling delicate objects and interacting with humans. By using e-skin, robots can accurately detect the **shape, texture, and temperature of objects**
- Safety: E-skin can also be used to enhance the safety of robots by **detecting potential hazards** in their environment.
- Mobility: By using e-skin sensors, robots can navigate through complex environments and **avoid obstacles** more effectively.
- Human-robot interaction: Particularly useful in applications where robots are used to provide physical assistance to humans, such as in **healthcare and eldercare**.

A virtual keyboard using e-skin technology is a touch-sensitive keyboard that is projected onto a surface such as a table or wall. By touching the surface with their fingers **e-skin sensors detect the position and movement to translate them into commands for the computer.**

Detection of our fingers position is done through **capacitive sensing.**



- Biometric authentication: E-skin technology can be used to identify individuals through **unique patterns in their skin**, enabling more secure and seamless authentication for various applications, including **banking and security**.
- One **advantage of biometric authentication** using e-skin technology is that it can be very difficult to **counterfeit or fake**. Because the patterns in a person's skin are unique , it provides a **high level of security against fraud and identity theft**
- Neural interface: E-skin technology can be used to create a neural interface that connects the **human brain to computers or other devices, enabling seamless communication and control**.
- E-skin technology can be used to detect the **electrical signals** generated by the human brain, known as **brain waves or neural signals**. These signals can be analyzed and translated into commands that can be used to control **computers or even vehicles**.

- Another advantage of a neural interface using e-skin technology is that it has the potential to restore mobility and independence to individuals with disabilities, such as paralysis or limb loss. By enabling direct control of prosthetic limbs or exoskeletons, it can provide a more natural and intuitive way to move and interact with the world.
- Neural interface using e-skin technology has many potential applications, including in **healthcare, gaming, and communication**. For example, it can be used to enable individuals with **disabilities to communicate more effectively, or to control video games using their thoughts**.

APPLICATION

- **In e-skin technology holds enormous potential for many fields, including healthcare, robotics, augmented reality, and wearable technology. E-skin technology enables the creation of flexible, lightweight, and non-invasive sensors that can detect and respond to various stimuli, such as pressure, temperature, and humidity.**
- **E-skin technology can also improve the efficiency and safety of various industries, including manufacturing, transportation, and logistics. For example, e-skin can be used to monitor worker health and safety, prevent injuries, and increase productivity.**
- **E-skin technology has the potential to transform the way we interact with technology and the world around us, enabling more natural, intuitive, and seamless communication and control.**
- **And we can expect more innovation in the upcoming years in this field**

STEALTH TECHNOLOGY

INTRODUCTION:

- ✦ **STEALTH - A behaviour that is secret or quiet .
It is a technique in which we can make any object invisible.**
- ✦ **It also means very low observable or VLO technology,in which object is made less visible to radar system,sonar,infrared and other detective methods**
- ✦ **No aircraft is totally invisible to radar,stealth technology prevents conventional radar from detecting or tracking the effectively.**
- ✦ **It is mainly employed military defense purpose .The goal of stealth technology is to make an airplane invisible to radar**

HISTORY :

- The first stealth APPLICATION was developed in Germany WW-2 in **GERMAN SUBMARINES** when they used radar absorbent paint on it
- Later Americans worked on it and succeeded
- In mid 1960's, the U.S built a high altitude reconnaissance aircraft, the Lockheed SR-71 BLACKBIRD, that was extremely radar -stealthy for its days

JET FIGHTER GENERATIONS



1st Gen jet fighters (1940s-1950s) used turbojets for propulsion instead of earlier piston-driven aircraft (Messerschmitt-Me262, Mystere-IV, MiG-15 etc)



2nd Gen fighters (1950s-1960s) integrated new technologies, swept or delta wings & guided missiles for BVR (beyond visual range) combat (MiG-21, Sukhoi-7, F-104 Starfighter etc)



3rd Gen fighters (1960s-1970s) inducted improved radars, missiles & avionics (Mirage-III, MiG-25, F-4 Phantom-II etc)



4th Gen fighters (1970s-1990s) incorporated fly-by-wire controls & multi-role capabilities (Mirage-2000, MiG-29, Sukhoi-27, Tornado, F-16 Fighting Falcon etc)



4.5 Gen fighters (1990s-onwards) use more advanced avionics & electronics, with some stealth. (Sukhoi-30MKI, Gripen, Eurofighter Typhoon, F-16F Desert Falcon, F/A-18 Super Hornet etc)

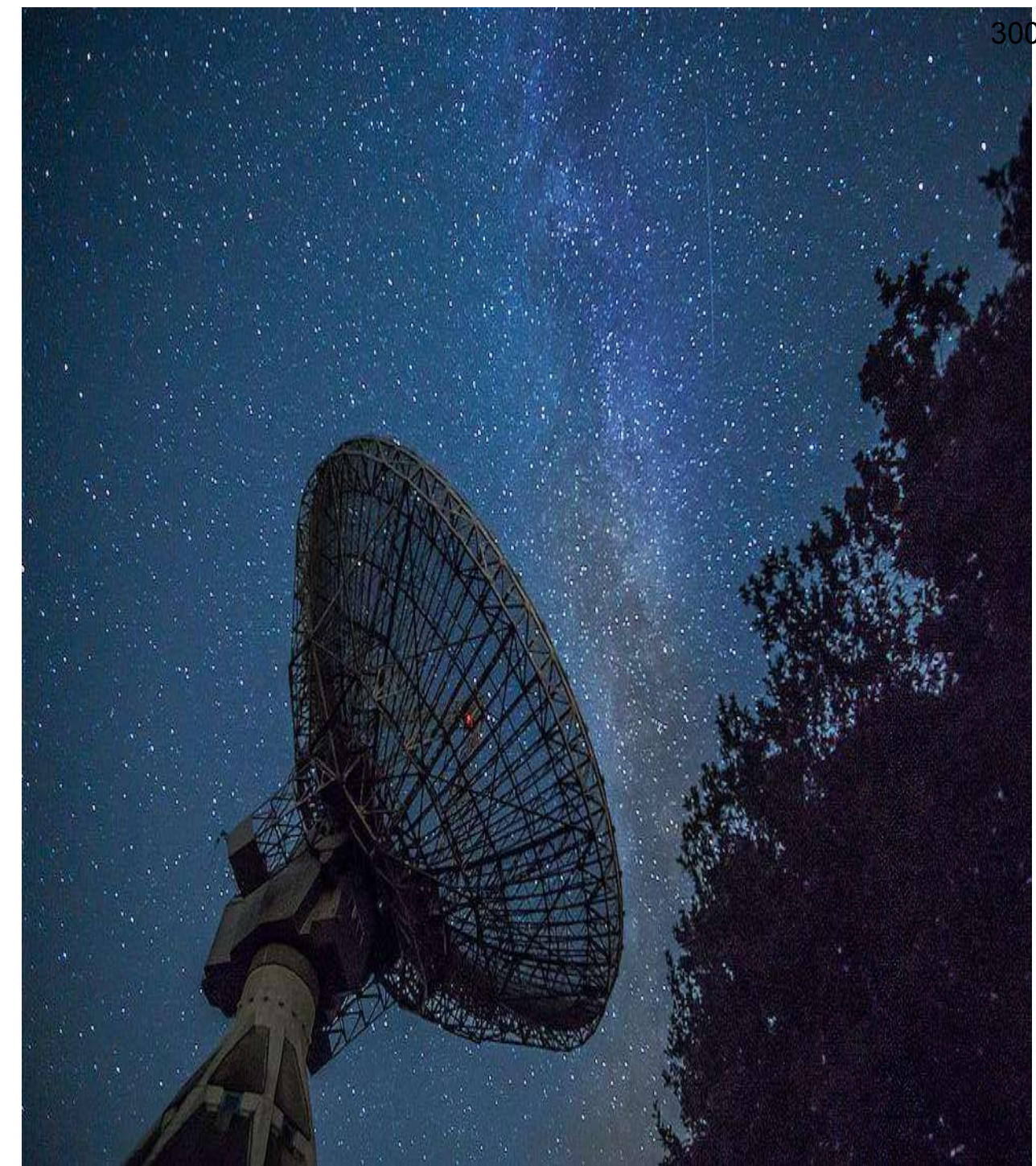
5th Gen fighters are multi-role or swing-role but also incorporate advanced **stealth** technology, composite materials, **supercruise** (achieve **supersonic cruise** speeds without use of afterburners), **thrust-vectoring** & **multi-sensor** integrated avionics



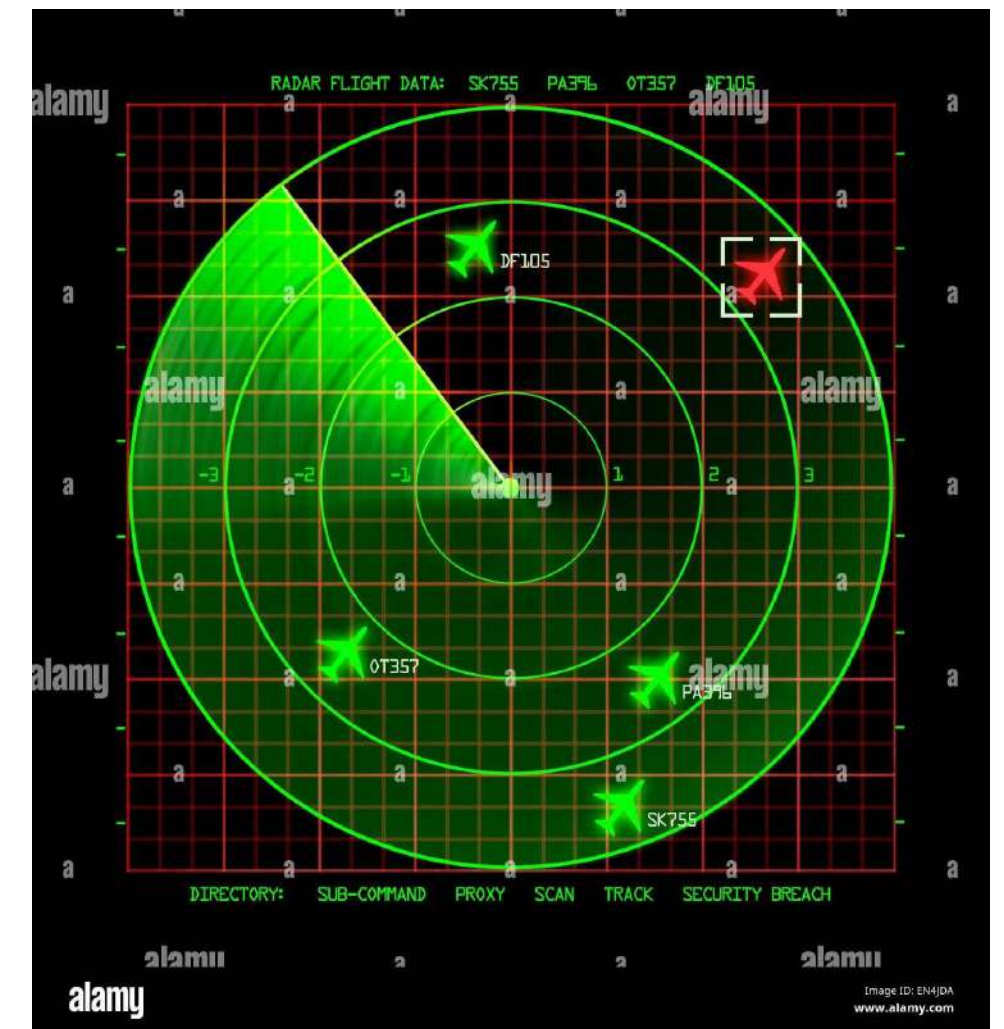
Only **fully-operational** 5th-gen fighter at present is the American F/A-22 'Raptor', developed for \$28 billion, with each fighter costing \$350-400 million extra. Two FGFA in **pipeline** are American F-35 'Lightning-II' Joint Strike Fighter & Russian Sukhoi T-50 or PAK-FA

RADAR :

- ✦ **RADAR is an object detection device the uses RADIO WAVES to determine the range,altitude,direction or velocity of objects**
- ✦ **Works on principle of MICROWAVES.**
- ✦ **It can be used to detect aircraft,spacecraft,guided missiles motor vehicles,weather formation and land.**
- ✦ **Mainly designed for defense and security purposes.**



- The RADAR antennas transmits radio waves that bounces off(jump)the object in their path and get back to radar
- The object returns a tiny part off wave's energy to the antenna that is locked at the same site as the transmitter.
- The metal body of an airplane is very good at reflecting radar signals, and this makes it easy to find and track airplanes with radar equipment.



WORKING OF STEALTH TECHNOLOGY :

Stealth aircraft are designed to avoid detection using a variety of technologies

That reduce reflection/emission of radar,infrared,visible light,radio frequency(RF)spectrum and audio,collectively known as stealth technology.

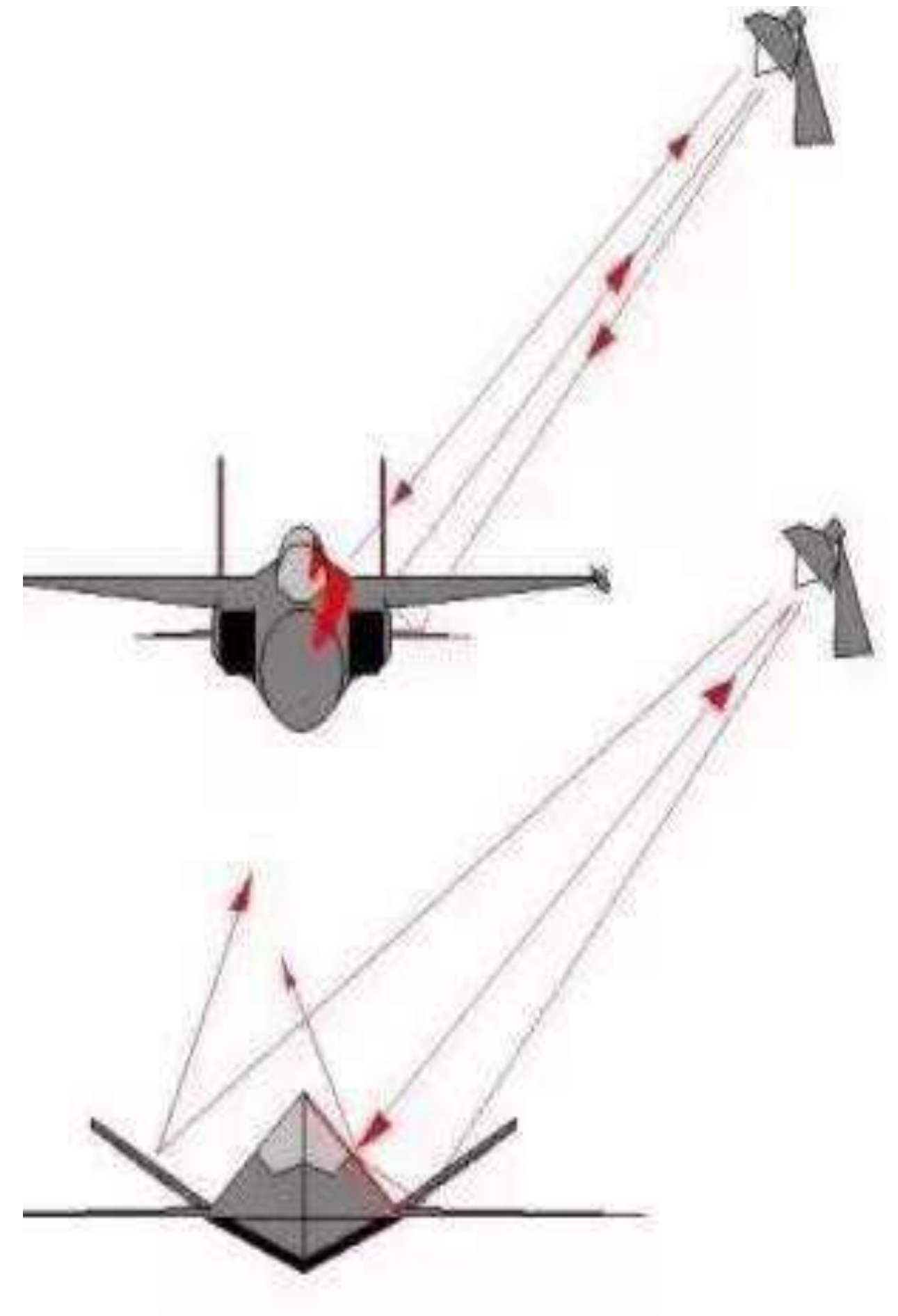
. There are two different ways to create invisibility:

- The airplane can be shaped so that any radar signals it reflects are reflected away from the radar equipment.**
- The airplane can be covered in materials that absorb radar signals.**

HOW DOES STEALTH WORKS?

303

- ✦ The size of a target's image on radar is measured by rcs
- ✦ Uses the principle of reflection and absorption as well as redirection
- ✦ Minimizes heat and other emissions from engine and other spots.
- ✦ Reduces RCS by surface designs of stealth aircrafts by RAS OR RAM



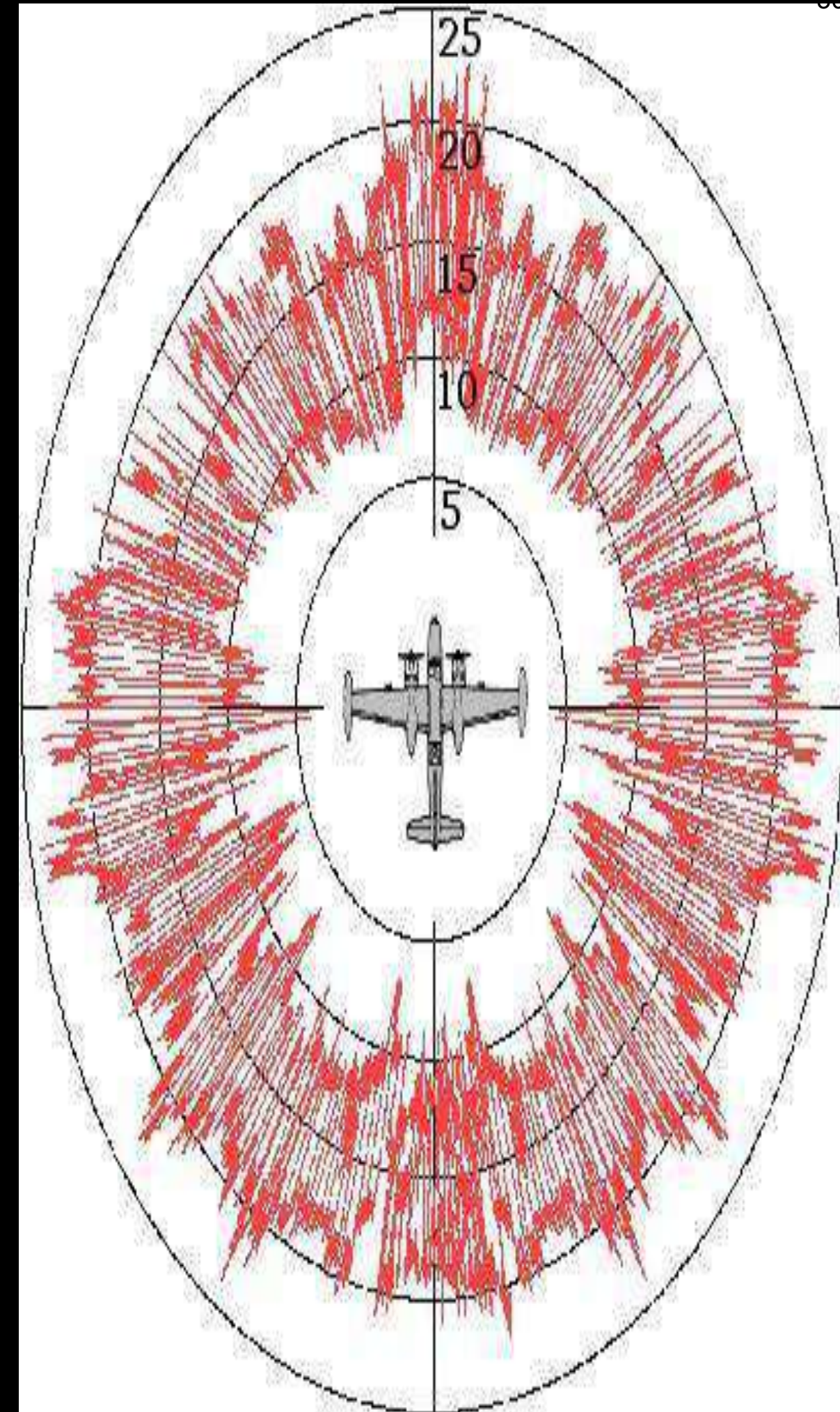
RADAR CROSS REDUCTION :

The **Radar Cross Section σ** (RCS) is an aircraft-specific quantity that depends on many factors. The computational determination of the RCS is only possible for simple bodies. The RCS of simple geometric bodies depends on the ratio of the structural dimensions of the body to the wavelength.

Practically, the RCS of a target depends on:

- the physical geometry and exterior features of the target,
- the direction of the illuminating radar,
- the radar transmitters frequency,
- the electrical properties of the target's surface.

Whereas in the design of passenger airplanes more attention is paid to effectiveness and safety, in the case of an aircraft used for military purposes, care is taken to ensure that this reflective surface is as small as possible. Measures to achieve this are referred to as *stealth technology*.



- ✦ **The primary measure of stealth, or low observability (LO), is the radar cross section (RCS) of the target, whether it's aircraft, missiles, or ships.**
- ✦ **Radar cross section (RCS) is a characteristic of an object that indicates how much energy it reflects back towards a radar.**
- ✦ **RCS is used to evaluate how easily an object can be detected and tracked by a radar system.**

RADAR - CROSS SECTION REDUCTION (RCS):

- ✦ **Almost ever since the invention of radar, various techniques have been grief to minimize detection. Some of the techniques are listed below**
- ✦ **Shaping of the airframe and surface design by RAM and RAS .**
- ✦ **Plasma stealth.**
- ✦ **Infrared stealth.**

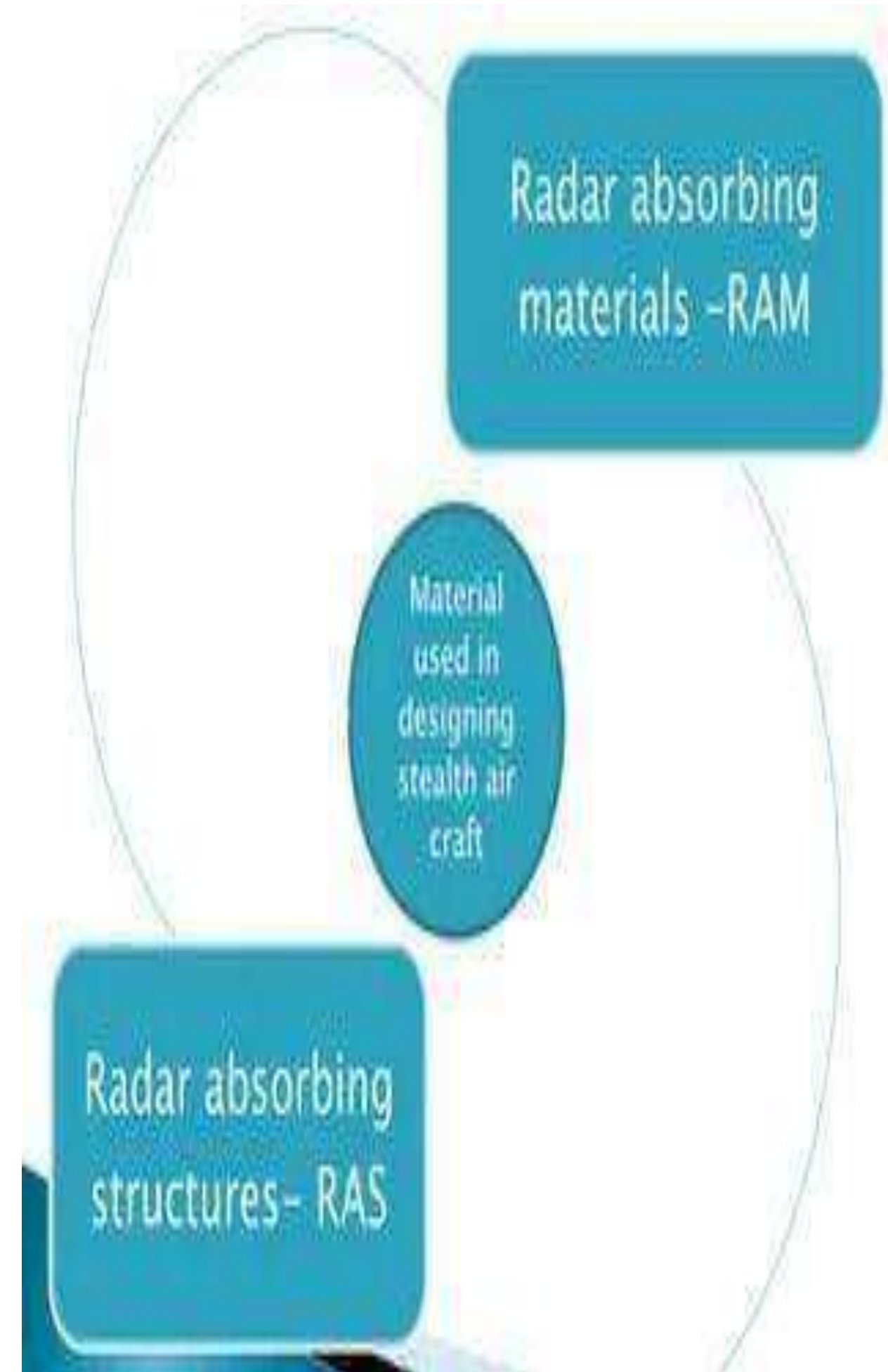
RAM - RADAR ABSORBING MATERIAL

- ✦ **Nanostructural composite material, absorbing without reflection radar wave**
- ✦ **RAM is basically paint with which external surfaces are coated with.**
- ✦ **These paint are are Magnetic ferrite-based substance having ingredients dielectric, such as carbon.**
- ✦ **RAM reduces the radar cross section making the object appear smaller.**



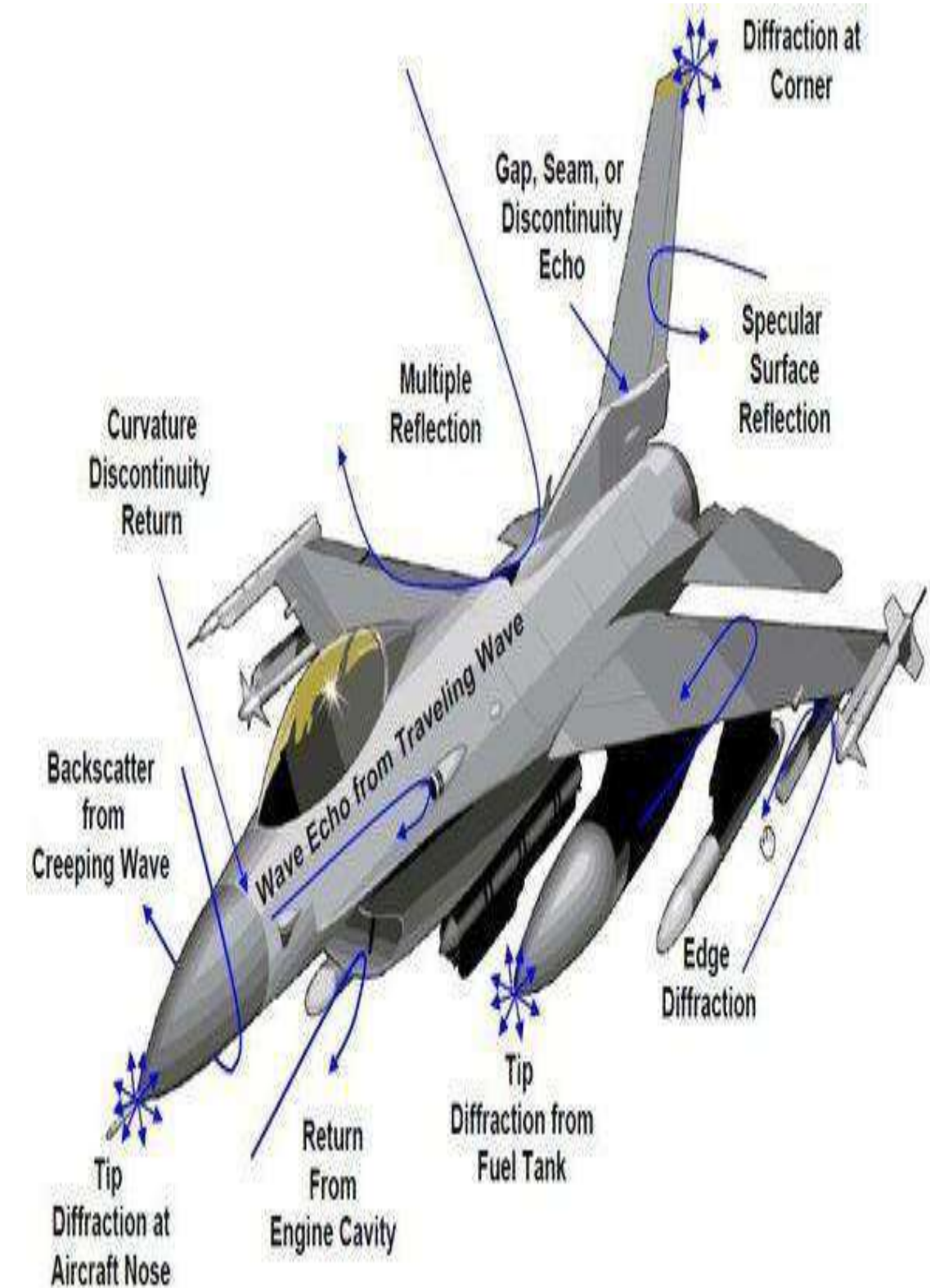
RADAR ABSORBING STRUCTURES (RAS) :

- ✦ **A radiation absorbing honeycomb structure usually incorporated with skin of the aircraft.**
- ✦ **RAS are the surfaces on the aircraft
Which can deflect the incoming radar waves and reduce the detection range'**



SHAPES AND DESIGN OF A STEALTH AIRCRAFT :

- ✦ Its tail should be kept an angle.
- ✦ Perfect nose design.
- ✦ Stealth aircraft must bury the engine with wings or fuselage.
- ✦ Exhaust plume should be as small as possible.

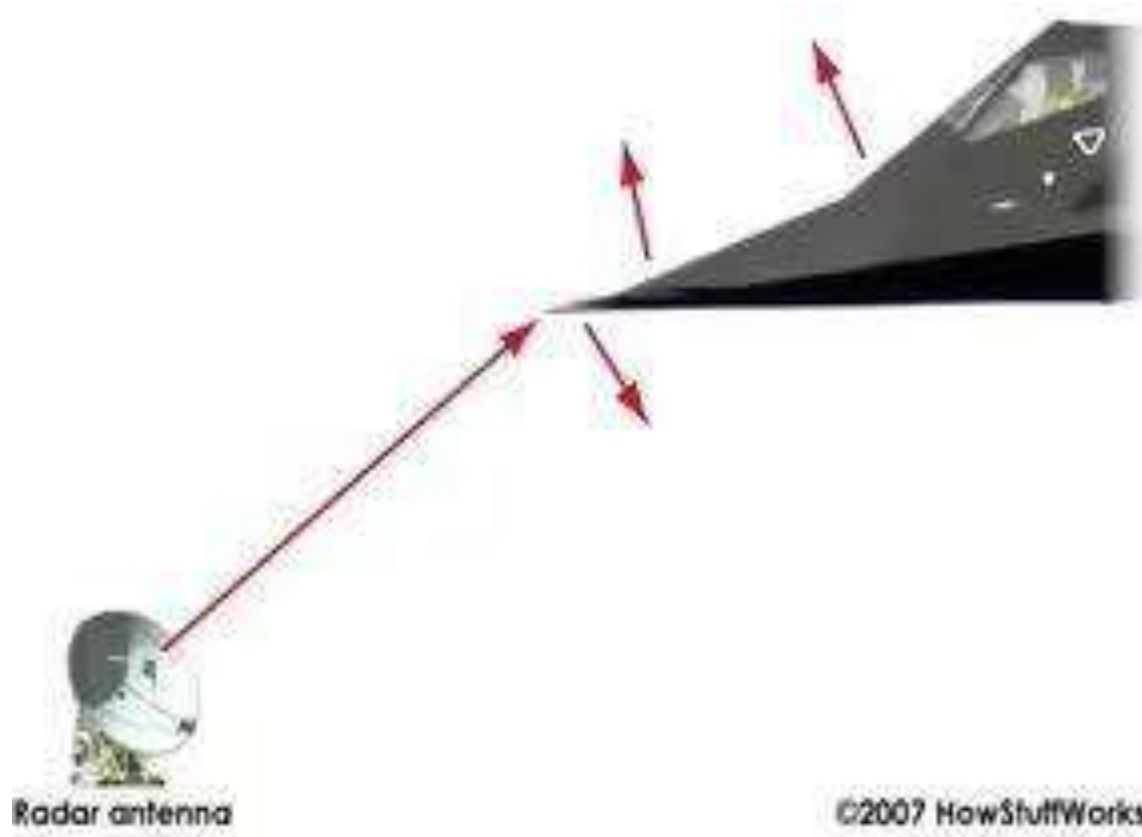


DIFFERENCE BETWEEN NORMAL CONVENTIONAL AIRCRAFT

310

Most conventional aircraft have a rounded shape. This shape makes them aerodynamic, creates a very efficient radar reflector.

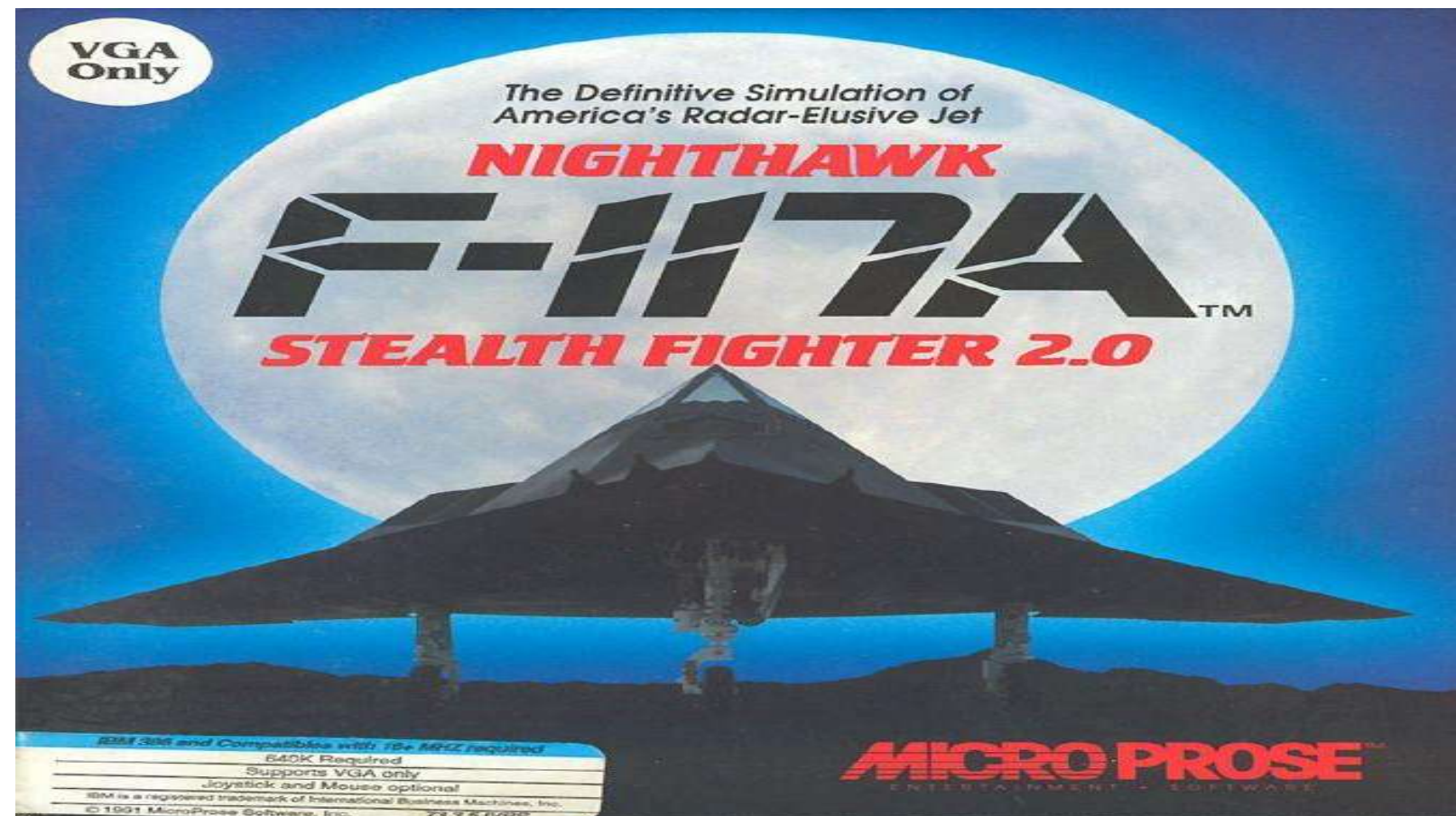
The round shape means that no matter where the radar signal hits the plane, some of the signal gets reflected back



Stealth aircraft, on the other hand, is made up of completely flat surfaces and very sharp edges.

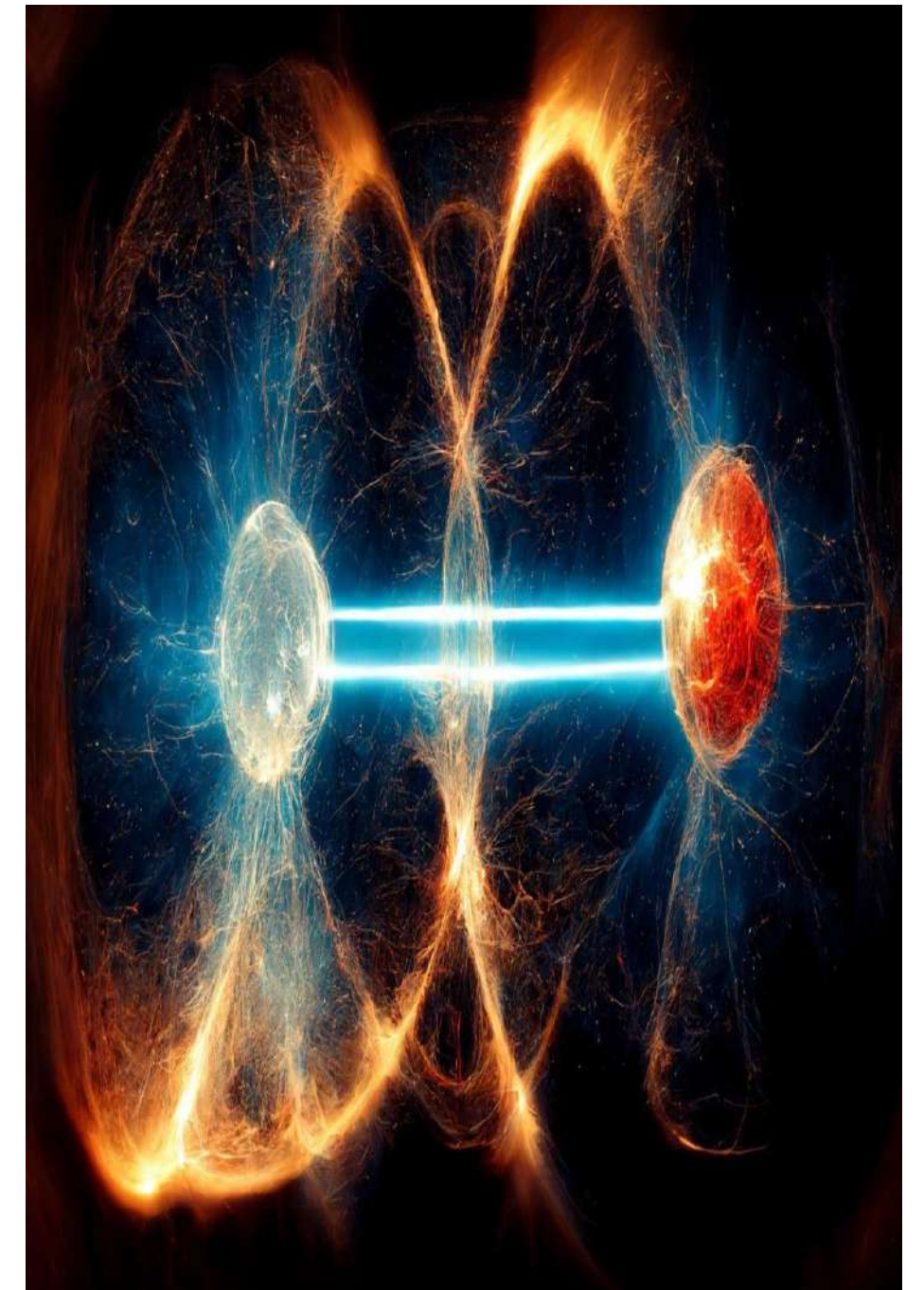
When a radar signal hits a stealth plane, the signal reflects away at an angle

EXAMPLES OF POPULAR STEALTH AIRCRAFTS :



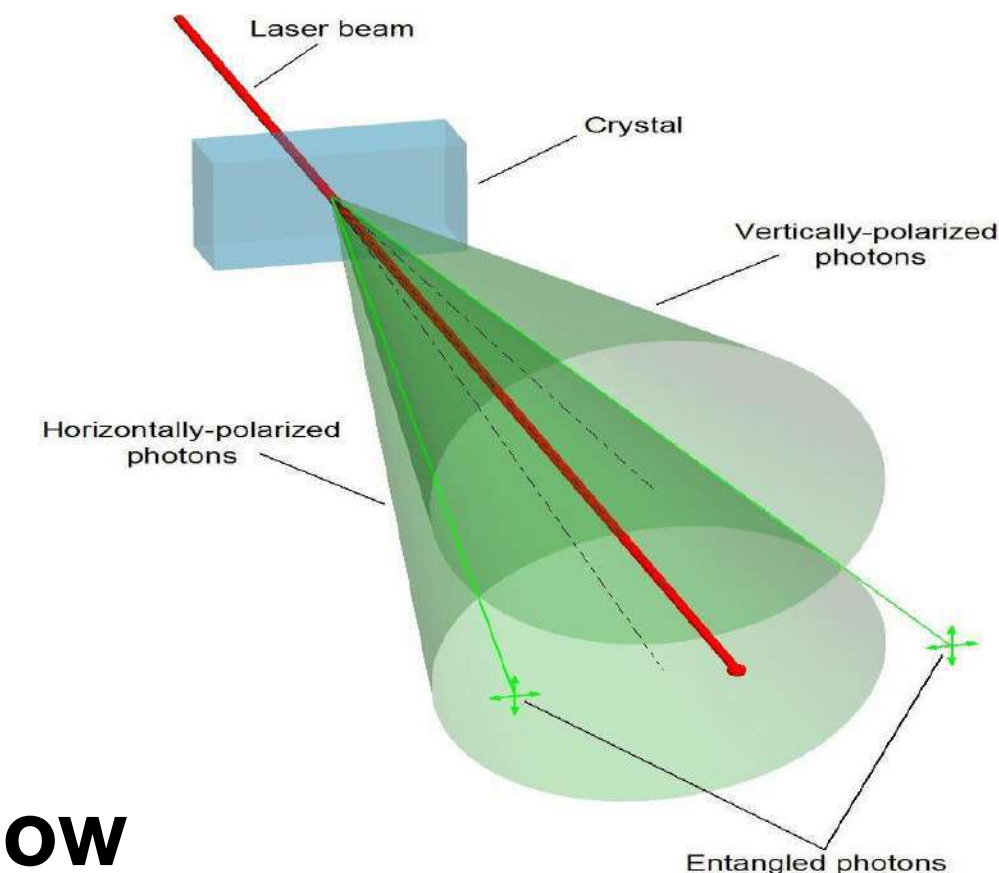
QUANTUM RADAR - NIGHTMARE OF STEALTH TECHNOLOGY

- ✦ Quantum radars as the name suggests work with quantum mechanics. It is a very complex technology. It eliminates the concept of stealth
- ✦ For a quantum radar to work, it must be able to use QUANTUM ENTANGLEMENT which is a most interesting topic under quantum mechanics.
- ✦ It involves the process of tangling of two photons together. The effect of force which is applied on one photon will have impact on the other photon.





The photons begin to separate using a laser, the separated photons by superconductors at temperatures very close to absolute heat. These entangled photons are defined as **a** photons and **b photons**. Now the **a** photon is emitted from the antenna of the radar to the environment, while the **b** photon which is known as ancilla (idler photon) are hidden in the radar system. Through SPDC process.



We reduce the signal photons we emit to wavelengths below 20hz. It is a low frequency that it cannot be detected at all. When the signal photon we emit hits an object in the air they interact with the object, when signal photon **a** interacts hits the sister photon ie **.idler photon** that we have hidden begins to show an interaction.



Quantum radars it's enough for photons to hit something it does not need to be reflected back to the radio antenna, because we have idler photons that we hide in the radar radar system.

INDIA ON STEALTH TECHNOLOGY

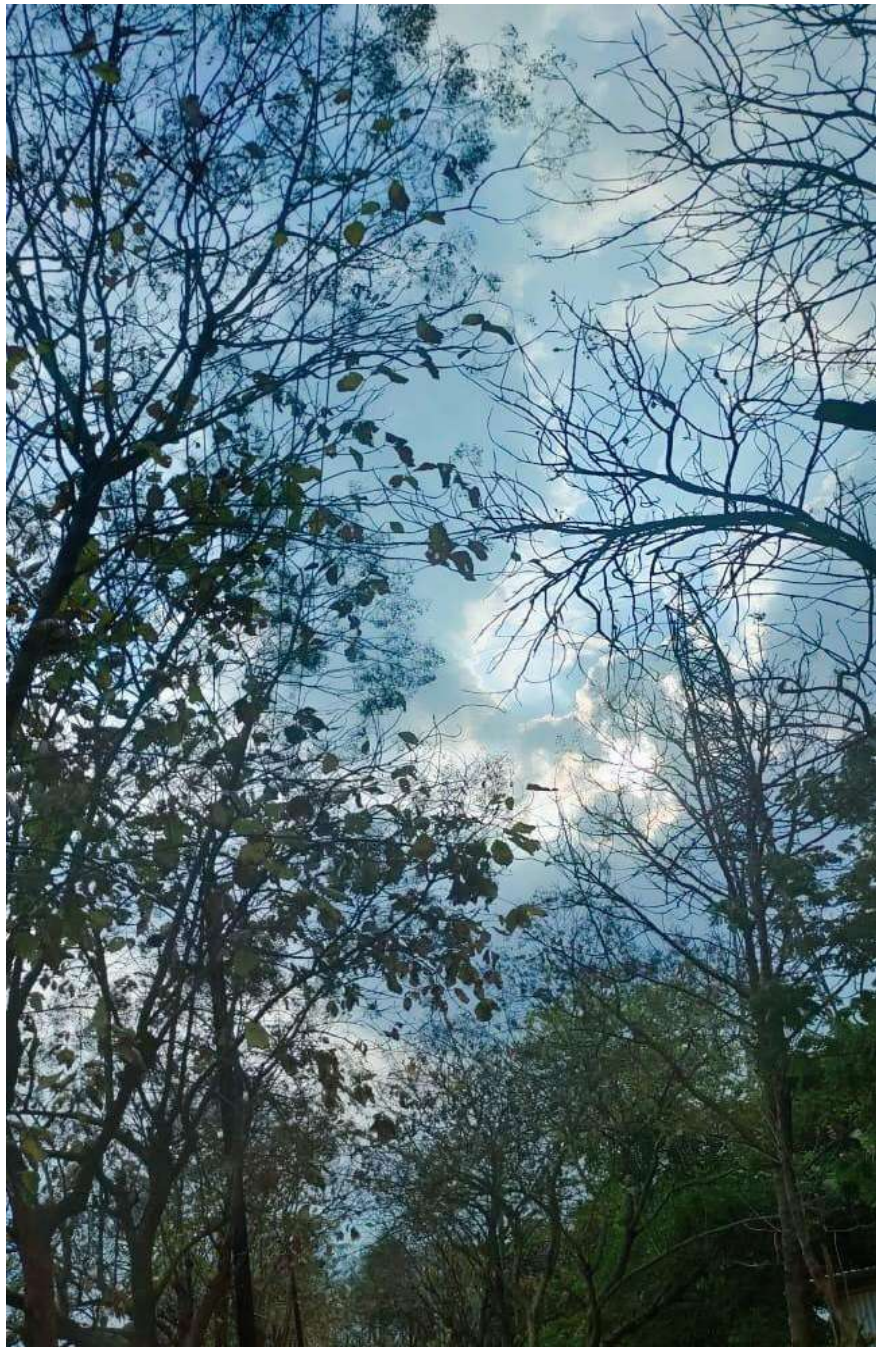
- ✦ **India is currently working on its stealth fighter AMCA which will have sixth-generation technologies**
- ✦ **AMCA is a twin-engine, stealth supersonic multi-role fighter designed for the IAF. At present, the AMCA is planned as a fifth generation fighter but will integrate emerging, best of breed sixth generation technologies over time.**



PHOTOGRAPHY



Mithran j -3rd year ECE-A





ARUN KUMAR R- 3RD YEAR ECE



BAVAN GN -3RD YEAR ECE



AKAASH TU 3RD -YEAR ECE



MANOJ MANI 2ND -YEAR ECE

DRAWINGS





KISHORE BALAJI G-3RD YEAR ECE

MUHILAN S -3RD YEAR ECE



MEET OUR
ECE'S TEAM



N.T.SATHYA



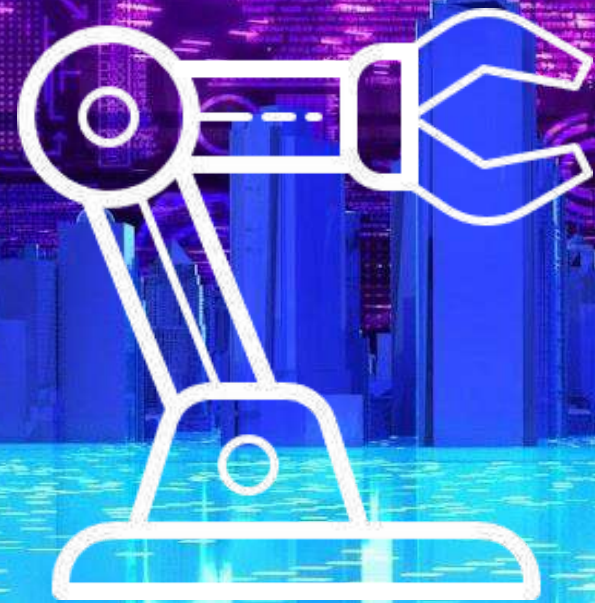
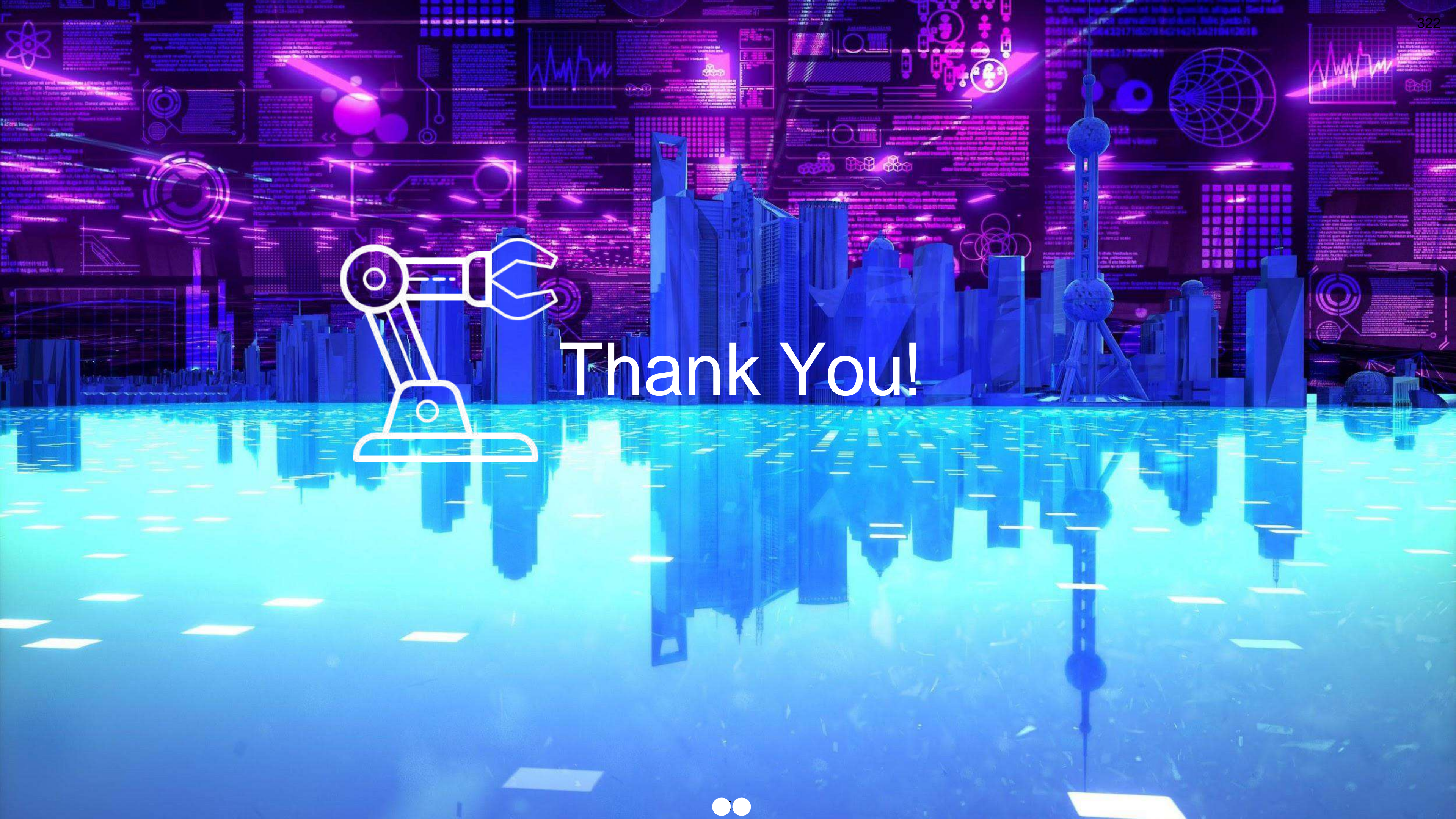
T.U.AKAASH



**CAROLINE BLESSY
YOVAN**



M.KARTHIKA



Thank You!

Entrepreneurship Development Cell



SARANATHAN COLLEGE OF ENGINEERING

TIRUCHIRAPALLI - 12

324

Dr. D. VALAVAN B.E., M.Tech., Ph.D.
PRINCIPAL

Campus Circle @ Saranathan College of Engineering
Hosted by StartupTN
Faculty Champions

Dr. S. Ravimaran, Professor & Head – AI&DS, (94430 76222)
Dr. K. Karthikeyan, Professor & Head – MBA. (94427 07778)

List of Office Bearers

S. No	Position	Name	Dept.	Contact Number	Email ID
1	Student Lead	Roshan Kumar B	AIDS	8778030420	broshankumar4@gmail.com
2	Associate Student Lead	S. Syed Masood	CSE	9994901112	Cse241109@saranathan.ac.in
3	Programme and Event Lead	Anubama. M	MBA	9585574977	Anumit2000@gmail.com
		Naren. R S	MBA	8220817049	Narensri425@gmail.com
4	Finance and Sponsorship Lead	Balaji.G	Mech	8525889922	balaji410200300@gmail.com
		Sriram kumar R	Mech	9629195473	srkleader1997@gmail.com
5	Marketing and Social Media Lead	S. Kabilan	IT	6383438049	it244022@saranathan.ac.in





SARANATHAN COLLEGE OF ENGINEERING

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Dr. D. VALAVAN B.E., M.Tech., Ph.D.
PRINCIPAL

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6	Ecosystem Enabler	T. Sakthikeerthika	CSBS	9789556220	csbs249052@saranathan.ac.in
		G.K.Soorya	CSBS	9342573534	csbs249056@saranathan.ac.in
7	Startup Founder	Shri. G. Karthik Prasanna, Founder, Greenster Solar		8438758852	greensterindia@gmail.com
8	Mentor/Investor	Shri. R. Senthilnathan, Co-founder & CEO, Tenzai Systems		9972097824	senthil@tenz.ai
STUDENT MEMBERS					
11	Mohamed Fayiq Shareef. MFS		ICE	9944229978	mfsfayiq020504@gmail.com
12	Mohamed Abdullah. N		ICE	6381043538	abdullahrockers321@gmail.com
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Shr



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Dr. D. VALAVAN B.E., M.Tech., Ph.D.
PRINCIPAL

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23	Pravin R F	AIDS	8270465979	rfpravin@gmail.com
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25	S. Gokul	CSE	9626252977	cse241040@saranathan.ac.in

With regards,

Dr. D. Valavan,
Principal

PRINCIPAL
Saranathan College of Engineering
TRICHY - 12.



Women Empowerment Cell



**Saranathan College of Engineering,
Venkateshwara nagar, Panjappur, Trichy-12
Trichy-12**



**SARANATHAN COLLEGE OF ENGINEERING
TRICHY-12**

MINUTES OF THE MEETING

Sexual Harassment Redressal Committee

Date: 23-10-2022

Venue : Board room

Time: 10.00 am-11:00 am

Members:

S.No	Members	Position	Signature
1	Dr.P.Shanmugapriya	Convener	<i>[Signature]</i>
2	Ms.V.Punitha	Member	<i>[Signature]</i>
3	Dr.K.Karthikeyan	Member	<i>[Signature]</i>
4	Dr.V.Mohan	Member	<i>[Signature]</i>
5	Ms.Jikki Kanagavalli	Member-outside activist	<i>[Signature]</i>
6	Ms.Revathy Muthuswamy	Member-outside activist	<i>[Signature]</i>
7	Amirtha Lakshmi. P	Student Member (First year)	<i>[Signature]</i>
8	S.Rockmani	Student Member (PG)	<i>[Signature]</i>
9	M.Karthika	Student Member (UG)	<i>[Signature]</i>
10	Deepika. H	Student Member (MBA)	<i>[Signature]</i>

The meeting was convened by the Head of Sexual Harassment Redressal Committee.
Following points were discussed in the meeting.

1. It has been planned to conduct an awareness program and competitions on the topic of "Empowerment of Girl Child" for the students and faculties.
2. Discussion regarding the complaint registration on any issues regarding the safety and security of a girl student.

[Signature]

Convener of the
Sexual Harassment Redressal Committee

CC to:

1. To the Principal for favorable action
2. To the Secretary for his kind notice
3. To the Sexual Harassment and Redressal Committee file



SARANATHAN COLLEGE OF ENGINEERING

TRICHY-12

NOTICE

Sexual Harassment Redressal Committee

20.10.2022

It has been planned to convene the Sexual Harassment Redressal committee meeting at our college between 10:00 am to 11:00 am in the board room on 23-10-2022. The agenda of the meeting is to discuss about creating the awareness among the students and staff members about the existence and functions of the committee. The members of the committee are requested to attend the meeting and give valuable suggestions.

A handwritten signature in black ink, appearing to be 'P. S. Jeyaraj', is written above the title of the Convener.

Convener of the
Sexual Harassment Redressal Committee

CC to:

1. To the Principal for favorable action
2. To the Secretary for his kind notice
3. To the Sexual Harassment and Redressal Committee file

Maintenance of safe working environment for female employee at Workplace - Report

10/05/2023


Internal Compliance committee has been formed with the following members. The functions and responsibilities of the committee is to create awareness about sexual harassment of women at workplaces and to examine / inquire and recommend punishments/ remedial measure in the cases of complaints of eve teasing and sexual harassment and any other problems related to women. To help the students to feel secured and safeguard themselves under any circumstances. To counsel the students to empower themselves by conducting self grooming sessions periodically. Surveillance cameras were fixed at various places in the campus for monitoring purpose. Help desk with 24 hours help line is available within the campus as well as in the security room.

S.NO	Name	Position
1	Dr.V.Punitha, Prof. Department of CSE	Head
2.	Dr.K.Karthikeyan, Prof, Head & Department of Management Studies	Member
3	Dr.C.Vennila, Prof. Department of ECE	Member
4	Dr.M.Padmaa, Prof. Department of ECE	Member
5	Dr.V.Mohan, Associate Prof. Department of ECE	Member
6	Ms. Revathi Muthusamy	Member-Outside activist

Sexual Harassment Redressal committee has been formed with the following members. The functions and responsibilities of the committee is to create awareness about sexual harassment of women at workplaces and to examine / inquire and recommend punishments/ remedial measure in the cases of complaints of eve teasing and sexual harassment and any other problems related to women .

S.NO	Member	Position
1	Dr.P.Shanmugapriya	Convener
2.	Ms.V.Punitha	Member
3	Dr.K.Karthikeyan	Member
4	Dr.V.Mohan	Member
5	Ms.Jikki Kanagavalli	Member-Outside activist
6	Ms. Ms.Revathi Muthusamy	Member - Outside activist
7	P.Amirtha lakshmi	Student Member (First Year)
8	S.Ruckmani	Student Member (PG)
9	M.Karthika	Student Member (UG)
10	H.Deepika	Student Member (MBA)

ICC activities



SARANATHAN COLLEGE OF ENGINEERING

Trichy-12

14/11/2022

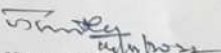
CIRCULAR

Internal Complaints Committee Meeting

As per the direction of AICTE, letter dated 03/11/2022, it has been planned to convene the Internal Complaints Committee special drive at our college at 11:00 am in the Board room on 02/12/2022. The agenda of the meeting is to review the pending cases if any.

The members of the committee are requested to attend the meeting.

S.No.	Name	Position
1	Dr. V. Punitha, Prof, Dept of CSE	Head
2	Dr. K.Karthikeyan, Prof & Head, Dept of Management Studies	Member
3	Dr. C.Vennila, Prof, Dept of ECE	Member
4	Dr. M.Padmaa, Prof, Dept of ECE	Member
5	Dr. V.Mohan, Associate Prof., Dept of ECE	Member
6	Ms. Revathy Muthuswamy	Member - outside activist


 Head of Internal Complaints Committee

Cc to:



SARANATHAN COLLEGE OF ENGINEERING

Trichy-12

CIRCULAR

Internal Complaints Committee Meeting

Internal Complaints Committee Meeting

DATE OF MEETING	02/12/2022	TIME	11.00 AM
VENUE: BOARD ROOM / RV BLOCK			
MEETING CHAIRED BY Dr. V. PUNITHA			

MEMEBERS ATTENDED

S.No.	Name	Position	Signature
1	Dr. V.Punitha, Professor & Head, Dept of CSE	Head	
2	Dr. K.Karthikeyan, Prof & Head, Dept of Management Studies	Member	
3	Dr. C.Vennila, Prof, Dept of ECE	Member	
4	Dr. M.Padmaa, Prof, Dept of ECE	Member	
5	Dr. V.Mohan, Associate Prof., Dept of ECE	Member	
6	Ms. Revathy Muthuswamy	Member - outside activist	

MINUTES OF THE MEETING

1	As per the direction of AICTE, letter dated 03/11/2022, meeting is held on 02/12/2022 to review the pending cases if any.
2	Pending cases: NIL.
4	The members of the committee suggested organizing awareness lecture/workshop about the provisions of the Act for Women towards the need for upholding the dignity of women.

Head, Internal Complaints Committee

Sexual Harassment Redressal Committee Activity

Training programmes conducted to sensitize the employees of the Institution.

1. “SAFETY AND SECURITY MEASURES FOR GIRL STUDENTS”.

In view of International day for Elimination of Violence against Women on 25.11.2022, Women Empowerment Cell of Saranathan College of Engineering has organized a special talk on “Safety and Security measures for girl students” from 11.30 a.m. to 12.30 p.m.

Ms.Anandhi Vedhavalli M.A., Inspector of Police, AWPS, Trichy City, Trichy was the guest of honor for the programme.

Ms.Anandhi Vedhavalli, delivered a talk on “Safety and security measures for girl students”. She enlightened the gathering on the current status of women in the society and ways of empowering themselves against exploitation by being aware of legal provisions. She also called upon the students to embolden themselves to face a gender biased society with a positive attitude. The session was interactive with lively exchange of opinions between the speaker and the students.

Dr. D. Valavan, Principal, Saranathan College of Engineering, delivered the presidential address. He enlightened the gathering with what are all the safety measures to be taken care while using the social networking and gave several tips for the girls to secure themselves from the evil sources. Dr.C.Vennila, Coordinator of the Women Empowerment Cell welcomed the gathering. Dr.M.Shanmugavalli.Professor, Instrumentation and Control Engineering, proposed the vote of thanks. The program was well attended by students from all departments.



SARANATHAN COLLEGE OF ENGINEERING

(Approved by AICTE and Affiliated to Anna University, Chennai)
(Accredited by NAAC with A+ Grade)
Venkateswara Nagar, Panjappur, Tiruchirapalli - 620012



WOMEN EMPOWERMENT CELL

International Day for the Elimination of Violence Against Women

GUEST OF HONOUR

MS. M. ANANDHI VEDHAVALLI,

Inspector of Police,
AWPS Cantonment, Trichy City, Trichy.

has kindly consented to deliver a Special Talk

on

"Safety and Security Measures for Girl Students"

Venue: JS Seminar Hall

Date: 25.11.2022

Time: 11:30 AM

All are cordially invited!

Dr. C. Vennila
Coordinator

Dr. D. Valavan
Principal

S. Ravindran
Secretary



2. Provisions of Act for Women

Women Empowerment Cell of Saranathan College of Engineering has organized an awareness programme about “Provisions of Act for Women” on 13.12.2022 from 03.30 a.m. to 4.30 p.m. Ms.Akalya Ravichandran ,Junior Assistant, NIT,Trichy was the guest of honor for the programme.

Ms. Akalya Ravichandran, delivered a talk on “Provisions of Act for Women”. She enlightened the gathering about the articles available in the Indian constitution for the benefit of Women. She enlightens the gathering about Article 14, 15, 19 and 21. She told that Article 14 provides for equality in general. Article 21 guarantees right to life and liberty. Article 15 describes about prohibition of discrimination on grounds of Religion, Race, Caste, Sex, or Place of Birth. Article 19 describes about freedom of speech and expression .She narrated on the current status of women in the society and ways of empowering themselves against exploitation by being aware of legal provisions. She also called upon the staff and students to embolden themselves to face a gender biased society with a positive attitude. The session was interactive with lively exchange of opinions between the speaker, staff members and the students.

Dr. D. Valavan, Principal, Saranathan College of Engineering, delivered the presidential address. He enlightened the gathering with what are all the safety measures to be taken care while using the social networking and gave several tips for the girls to secure themselves from the evil sources. Dr.C.Vennila, Coordinator of the Women Empowerment

Cell welcomed the gathering. Ms. J. Sangeethapriya, Assistant Professor, Information and Technology proposed the vote of thanks. The program was well attended by students from all departments.



3. International Women's day celebration – Womania'2023

Women Empowerment Cell Saranathan College of Engineering In view of the International Women's day celebration on 08.03.2023, Wednesday, Women Empowerment Cell (WEC) of Saranathan College of Engineering organized various events and competitions such as Singing, Dancing, Poem Writing, Speech, Rangoli, Fast walking, Skipping and Miss Womania exclusively for Girl students and women staff members of the institution. Total of 650 girl students and Staff members participated enthusiastically.

WEC has also organized a function to celebrate womanhood called Womania-2023 from 9.45 am to 12.30 pm at the Bi-decennial Block, II Floor. Mrs. Rajalakshmi Rajesh, Founder Director, Banconus Financial Service Pvt Ltd., Trichy was the guest of honour and graced the occasion with her presence and delivered the special address on topic the "OUR LIFE OUR RESPONSIBILITY".

In her address, she mentioned about the goals to be kept by every girl child and ways to attain them through her short inspiring stories. The need for self-confidence and selfbelief of a female in the society was also insisted by Mrs. Rajalakshmi Rajesh in her speech. Dr C.Vennila, Coordinator, Women Empowerment Cell and Professor, Dept of ECE welcomed the gathering. Ms.K.Sathya Prabha, Assistant Professor of Civil department proposed the vote of thanks. The first prize winners of different competitions conducted during Womania-2023 were awarded with a cash prize of Rs 750/ and the second prize winners were awarded with a cash prize of Rs 500/ each. Female Students and staff members from all the departments enthusiastically participated in various cultural events and enjoyed the program.





SARANATHAN COLLEGE OF ENGINEERING

Venkateswara Nagar, Panjappur, Tiruchirappalli-620012



WOMANIA 2023

W- Wonderful

O- Optimistic

M-Marvelous

E-Encouraging

N-Noble

EMBRACE EQUITY

We cordially invite you to the International
Women's day celebration

Guest of Honour

Mrs. Rajalakshmi Rajesh

B.Com., F.C.A.,

Founder Director,

Banconus Financial Services Pvt Ltd., Trichy

TIME: 9.45 A.M to 12.30 P.M

VENUE: Bi- Decennial Block , II Floor

Women of Saranathan