ISE Dept.
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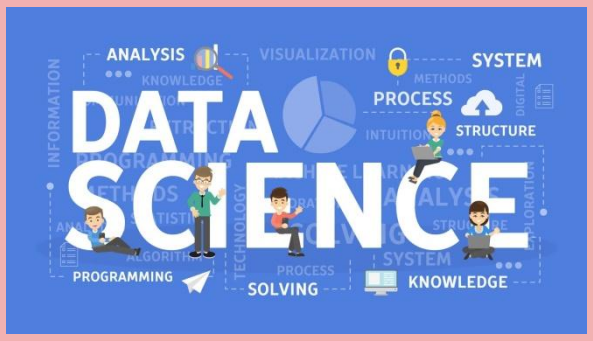
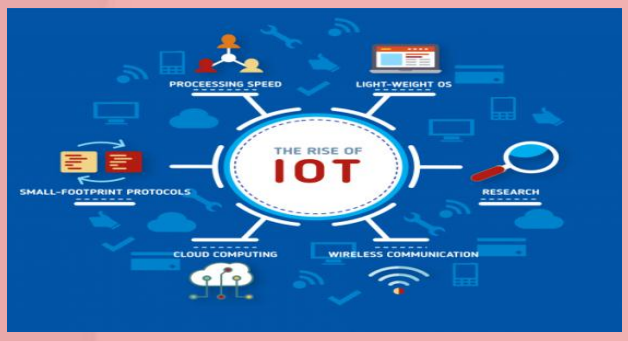
Department of Information Science and Engineering

“Five Day Open Course”

1st June to 05th June 2021





BMS Institute of Technology and Management
Doddaballapura Main Road, Yelahanka
Bengaluru-64, Karnataka, India.

Department of Information Science and Engineering

VISION

Emerge as centre of learning in the field of information science & engineering with technical competency to serve the society.

MISSION

To provide excellent learning environment through Balanced Curriculum, Best Teaching Methods, Innovation, Mentoring and Industry Institute Interaction.

Contents

THE EDITORIAL BOARD

Honorary Editor
Dr. Pushpa S K

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Editor
Mrs. Ashok Kumar P

Brochure

Programming for IT Career

BMS Institute of Technology Management
Yelahanka, Bengaluru -560064

Department of Information Science & Engineering

ISE Dept. *Transform Here*

Five Day Open Course on
"Programming for IT Career"
1st -5th June 2021

Cracking the Coding Interview - Data Structures and Algorithms

Organizing Chair: Dr. Pushpa S. K

About the Institute

In view of the growing demand for technical education and with the goal of establishing a premier technical education on par with international standards, a new technical institution by name 'BMS Institute of Technology and Management' was established in 2002. Currently, BMSIT & M offers seven UG, three PG programs and Ph.D. /M.Sc. (Engg.) in ten disciplines. BMSIT & M considers research to be of equal importance as academics for the betterment of an institution. Research culture has been embraced well by the faculty members and research scholars at BMSIT&M

About the Department

The Department of Information Science and Engineering started in the Year 2010 with an approved intake of 60 and Enhanced to180 from the academic year 2019-20. The Department has qualified and professionally dedicated faculty members practising OBE in the academic deliverables. The faculties have published research articles in various National, International Conferences and Journals. The department has modern laboratories to serve the teaching and research needs of the students as well as faculty members. The Department has been organizing conferences, workshops, expert lectures and student centric activities to encourage students to instil lifelong learning. Few of our students are working for consultancy projects along with few faculty members. The staffs are encouraged to attend the 10 days internship to bridge the gap between the academics and industry. The department has admirable research ambience.

About the Open Course

Data structures and algorithms play a major role in implementing software and in the hiring process as well. Why companies' interviews are focused on DSA instead of language/frameworks/tools specific questions? Algorithms make use of different problem-solving techniques and programming paradigms to solve various computer science problems. Software developers also have to make the right decisions when it comes to solving the problems of these companies. the interviewers are more interested in seeing how candidates use correct DS to solve a problem.

Objectives of the Course

1. Learn to design algorithms in order to reduce Compute time or solve larger problems using various programming models.
2. Select appropriate data structures as applied to Specified problem definition.

Target Audience:

All the Students of BMSIT&M

Course Content

Basics to Advance DS algorithm and analysis

Registration Details

Category	*Amount*
CSI Member	*100/-*
Non-CSI Member	*150/-*

Google Meet link

https://meet.google.com/jcd-tdzc-ejq

Payment through Phone Pe only:

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9008610899

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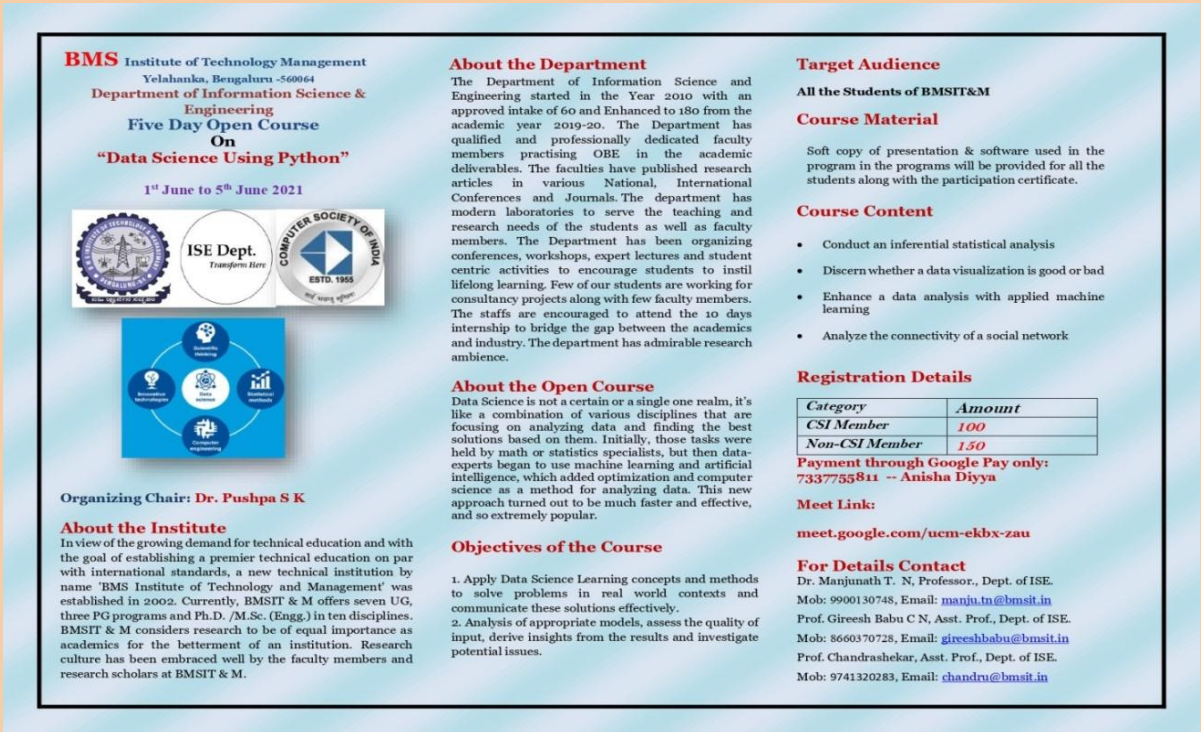
Data Science Using Python



BMS Institute of Technology Management
Yelahanka, Bengaluru -560064
Department of Information Science & Engineering
Five Day Open Course
On
"Data Science Using Python"

1st June to 5th June 2021

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COMPUTER SOCIETY OF INDIA ESTD. 1955

Organizing Chair: Dr. Pushpa S K

About the Institute

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About the Open Course

Data Science is not a certain or a single one realm, it's like a combination of various disciplines that are focusing on analyzing data and finding the best solutions based on them. Initially, those tasks were held by math or statistics specialists, but then data-experts began to use machine learning and artificial intelligence, which added optimization and computer science as a method for analyzing data. This new approach turned out to be much faster and effective, and so extremely popular.

Objectives of the Course

1. Apply Data Science Learning concepts and methods to solve problems in real world contexts and communicate these solutions effectively.
2. Analysis of appropriate models, assess the quality of input, derive insights from the results and investigate potential issues.

Target Audience

All the Students of BMSIT&M

Course Material

Soft copy of presentation & software used in the program in the programs will be provided for all the students along with the participation certificate.

Course Content

- Conduct an inferential statistical analysis
- Discern whether a data visualization is good or bad
- Enhance a data analysis with applied machine learning
- Analyze the connectivity of a social network

Registration Details

Category	*Amount*
CSI Member	*100*
Non-CSI Member	*150*

Payment through Google Pay only:
7337755811 -- Anisha Diyya

Meet Link:

meet.google.com/ucm-ekbx-zau

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Internet of Things (IOT)

BMS Institute of Technology Management
Yelahanka, Bengaluru -560064
Department of Information Science & Engineering
Five Day Open Course
On
"Internet of Things with Hands-on"

1st June to 5th June 2021

ISE Dept. *Transform Here*

Organizing Chair: Dr. Pushpa S. K

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About the Open Course
Internet of Things (IoT) is considered as the future of the internet and has garnered increasing attention over the recent years due to the innovation and development of various applications such as wearable, smart metering, smart home/city, connected vehicles, and large-scale wireless sensor network. Internet of Things (IoT) is predicted to be the next big thing in technology and will be the most important factor impacting fundamental business logic in the coming decades. Building and developing the IoT infrastructure will support and strengthen the Digital India campaign also. This Open course includes an expert lecture on state of art of IoT, IDE, IoT devices like actuators, sensors-temperature, distance, etc, and hands-on simulations on building and programming projects

Objectives of the Course
1. Demonstrate necessary and practical knowledge of components of Internet of Things.
2. Develop skills required to build real-life IoT based projects.

Target Audience
All the Students of BMSIT&M

Course Material
Soft copy of presentation & software used in the program will be provided for all the students along with the participation certificate.

Course Content
- Introduction to IoT
- Sensor & Actuators with Arduino
- Arduino Simulation Environment
- IoT Protocols
- Cloud platforms for IoT

Registration Details

Category	*Amount*
CSI Member	*100*
Non-CSI Member	*150*

Payment through Phone Pe only:
Shridhar Sanshi – 8095202962

Join Whatsapp Group using link:
https://chat.whatsapp.com/KFFTaozkbEu99xQJLMiYsO

Class Link
meet.google.com/gaj-hery-ebu

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ANDROID APP Development

BMS Institute of Technology Management
Yelahanka, Bengaluru -560064
Department of Information Science & Engineering
Five Day Open Course
On
"Mobile Application Development"

1st June to 5th June 2021

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Organizing Chair: Dr. Pushpa S K

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About the Open Course
The ANDROID Application Development is needed to implement rich Android applications for the Android mobile platform. Mobile application provide different platform to business and brand, because with the help of mobile apps company direct connect with user and make better engagement with customer. Mobile apps provide many benefits to company like better connectivity between user and company, increase user base, better business reach and major benefit is it's make brand to world popular in minimum time.

Objectives of the Course
1. Covers the fundamentals of Android programming using the Android SDK
2. To build the code, compile, execute, and debug mobile applications using Java for Android programming language.

Target Audience
All the Students of BMSIT&M

Course Material
Soft copy of presentation & software used in the program in the programs will be provided for all the students along with the participation certificate.

Course outcomes
- Apply essential Android Programming concepts
- Install and configure Android application development tools.
- Design and develop user Interfaces for the Android platform.
- Design and develop mobile applications, using development tools and environments.

Registration Details

Category	*Amount*
CSI Member	*100*
Non-CSI Member	*150*

Payment through Google Pay only:

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Robotics with Artificial Intelligence

BMS Institute of Technology Management
Yelahanka, Bengaluru -560064
Department of Information Science & Engineering
Five Day Open Course
On
"Robotics with Artificial Intelligence"
***In association with* ASIER Solutions**

Organizing Chair: Dr. PUSHPA S K

About the Institute

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About the Open Course

Artificial intelligence and robotics are bringing drastic changes in the technological fields. Things we only imagined twenty years back have now become a reality. From automated systems at a manufacturing plant to self-serving robots in a restaurant, technology has evolved, driving humans together. In Today's world, AI and robots serve people as problem-solvers, companions, and first-responders. Technology has evolved for good, and it is not going to stop here. This open course focusses on the basics of Artificial Intelligence, Robotics, Arduino Programming with hands on sessions.

Objectives of the Course

1. Understand the techniques of AI and Robotics for Software-Hardware co-design
2. Analyse a problem to find ways of working towards a solution.

Target Audience

All the Students of BMSIT&M

Course Material

Soft copy of presentation & software used in the program in the programs will be provided for all the students along with the participation certificate.

Course Content

- Basic Electronics + Microcontrollers
- Microcontroller programming
- Introduction to Sensors
- Introduction to Robotics
  - Introduction to Artificial Intelligence
  - Case studies – Robotics with AI

Registration Details

Category	*Amount*
CSI	*100*
Non CSI	*150*

Payment through Google Pay only:

Prof. Vinutha – 9739924054

Join WhatsApp Group using link:

https://chat.whatsapp.com/DZfhHfsD1yb97Ye9iv7X2y

Google meet Link

https://meet.google.com/sgi-mzmq-ncr

Coordinators

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Dr. Rudresh Shirwaikar, Asst. Prof., Dept. of ISE.
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Prof. Swetha, Asst. Prof., Dept. of ISE.
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Prof. Vinutha, Asst. Prof., Dept. of ISE.
Mob:9739924054,Email: vinuthak ise2014@bmsit.in

Event Schedule

Programming for IT Career

BMS Institute of Technology Management
Yelahanka, Bengaluru -560064
Department of Information Science & Engineering
Open course Schedule on "Programming for IT Career
1st June to 5th June 2021

Day	Session-1		Session-2		Session-3	Session -4
Time	9:30am – 11:15am		11:30am -12:45pm		1:45pm – 3:00pm	3.15 pm to 4.30 pm
Day1	Introduction to Data Structures S.Mahalakshmi , Ayush Gupta	Tea Break	Recursion S.Mahalakshmi , Ayush Gupta	Lunch Break	Time Complexity S.Mahalakshmi , Ayush Gupta	Strings S.Mahalakshmi , Ayush Gupta
Day2	Stack + Problems Dr.Veena N, Md Rahmat khan		Queue + Introduction to LinkedList- Dr.Veena N, Md Rahmat khan		Linked List + Hands-On Session Dr.Veena N, Md Rahmat khan	Graph Dr.Veena N, Md Rahmat khan
Day3	HTML Ambika, Akash		CSS Ambika, Akash		DBMS(SQL) Ambika, Akash	Xampp,PHPMyAdmin Ambika, Akash
Day 4	Boot Strapping S.Mahalakshmi, Chethan		APIs , Data Inserting S.Mahalakshmi, Chethan		PHP Dr.Veena N, Chethan	PHP Dr.Veena N, Chethan
Day5	Awareness about placement + Technical Quiz Competition		Technical Quiz Competition		Mock Interview Senior Students	Valedictory + certificate

Faculty Coordinator: Prof.S.Mahalakshmi, Dr.Veena N, Prof.Ambika R
Student Coordinator: Mr.Pranav R, Mr.Ananth

Data Science Using Python

DAY 1 -1st June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	• Open Course Inauguration • Introduction to Data Science • How to shape Data into Analytics (Dr. Manjunath T. N)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	• Python Introduction • Installation of python and python ecosystem (Dr. Manjunath T N)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	• Variables, expressions and statements • Conditional Execution

	(Dr.Manjunath TN)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	• Functions (Chandrashekar K T)
DAY 2 – 2nd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	• Loops and iterations • Strings (Adarsh H)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Files open data files on your computer and read through the files using Python (Abhijith)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	• Data Manipulation with Lists (Adarsh H)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	• Usage of Dictionaries in Python (Abhijith)
DAY 3 – 3rd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	• Data Handling using Tuples (Dr.Manjunath T N)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	• Regular Expressions to handle patterns in strings and extract data from strings using the regular expression programming language (Gireesh Babu C N)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	• Network programming • How data moves across the network using the

	Hyper Text Transport Protocol (HTTP) (Karan)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	• How we write programs to read data across the network. (Karan)
DAY 4 – 4th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	• Data Visualization • To scrape data from the network, store the data in a database and then read the data from the database to produce in in-browser visualization of the data (Dr.Pushpa S K and Chandrashekar K T)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	• Applying different Technique of Correlation & Regression on the Data set using Python • Applying Uni variate/ Bi variate / Multi variate • Regression Modelling (Dr.Pushps S K)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	• Understanding the Data set and Applying Machine learning models Cluster /Classification model from machine learning philosophy, by understanding the data set (Gireesh Babu C N)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	• Recap and Assessment
DAY 5 – 5th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	• Decision Tree • Random Forest Technique (Gireesh Babu C N)
11:00 AM to 11:15 AM	Break

11:15 AM to 12:45PM	• Bayesian Theorem and Its Applications (Chandrashekar K T)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	• Case Study Discussion on various Sectors (Dr.Manjunath T N)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	• Recap and Assessment and Feedback

Internet of Things(IOT)

DAY 1 -1st June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Introduction to IOT Understanding IoT fundamentals,Real Time Examples of IoT /Dr.K.B.Surekha
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Overview of IoT components and IoT Communication Technologies ,Challenges in IOT /Dr.K.B.Surekha
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Overview of Sensors working/Dr Narasimha Murthy M.S.
3:15 PM to 3:30 PM	**Break**
DAY 2 – 2nd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Arduino Simulation Environment Arduino Uno Architecture Setup the IDE, Writing Arduino Software 1. Arduino program to implement scrolling LED, to glow even/odd LED and to simulate using tinkerCAD.
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	2. Arduino program to demonstrate usage of push button to control the LED and to simulate using tinkerCAD. 3.Arduino program to demonstrate traffic control system and to simulate using tinkerCAD.
12:45PM to 1:45 PM	Lunch

1:45 PM to 3:15 PM	4.Arduino program to demonstrate usage of servo motor with potentio meter and to simulate using tinkerCAD. 5.Arduino program to implement soil moisture detector and to simulate using tinkerCAD.
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	6.Arduino program to implement smoke detector to detect fire and to simulate using tinkerCAD. 7.Arduino program to implement ultra sonic sensor to measure distance and to simulate using tinkerCAD
DAY 3 – 3rd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	IoT Protocols/Dr Surekha K.B.
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Arduino program to implement an LCD to display text and to simulate using tinkerCAD.
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	7.Arduino program to implement ultra sonic sensor to measure distance and to simulate using tinkerCAD
3:15 PM to 3:30 PM	**Break**
DAY 4 – 4th June 2021	
Time	**Topic & Resource person**
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	IoT Cloud Platforms/Mr.Rohit
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	REST API and MQTT/Mr.Rohit
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	QUIZ
DAY 5 – 5th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	IoT consideration for Industry/Mr. Rohit
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	IoT consideration for Industry/Mr.Rohit
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	QUIZ
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Assignment/Feedback

ANDROID APP Development

DAY 1 -1st June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Inauguration, Registration and Introduction to Object Oriented Programming using Java, By Prof. Shanthi D L and Dr. Geeta Patil
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Introduction to Object Oriented Programming using Java, By Prof. Shanthi D L and Dr. Geeta Patil
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Installation of Android Studio, Prof. Shanthi D L, Pranav and Ananth
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Execution of sample application Program, Prof. Shanthi D L, Pranav and Ananth
DAY 2 – 2nd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Architecture components, OS Layer Architecture Components By Mr Ankit Agarwal
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Activity Life Cycle By Mr Ankit Agarwal
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Explore the layout editor and design an activity by Dr. Geeta Patil, Prof. Shanthi D L
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Explore the layout editor and design an activity by Dr. Geeta Patil, Prof. Shanthi D L
DAY 3 – 3rd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Debugging your Android Application By Mr Ankit Agarwal
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Debugging your Android Application By Mr Ankit Agarwal
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Design of Interactive Application by Dr. Geeta Patil, Prof. Shanthi D L
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Hands on in Design of Interactive Application by Dr. Geeta Patil, Prof. Shanthi D L
DAY 4 – 4th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Interactive Application with Intents and Bundles

	Dr. Geeta Patil, Prof. Shanthi D L
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Hands on Interactive Application with Intents and Bundles Dr. Geeta Patil, Prof. Shanthi D L
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Changing WallPaper Program , Dr. Geeta Patil, Prof. Shanthi D L
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Changing WallPaper Program , Dr. Geeta Patil, Prof. Shanthi D L
DAY 5 – 5th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Phone Dialer Application, Prof Shanthi D L, Dr. Geeta Patil
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Hands On Phone Dialer Application, Prof Shanthi D L & Dr. Geeta Patil
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Hands on with Project Activity
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Hands on with Project Activity & Feedback

Robotics with Artificial Intelligence

DAY 1 -1st June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Introduction to Robotics and Machine Learning (Asier Solutions)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Basics of electronics and simulations (Asier Solutions)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Introduction to microcontrollers (Asier Solutions)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Microcontrollers Simulations (Hands on) (Asier Solutions)
21st October 2019	
DAY 2 – 2nd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Introduction to IOT (Asier Solutions)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Using IOT with Node MCU Module ESP8266 (Asier Solutions)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Microcontrollers programming (Hands on) (Asier Solutions)
3:15 PM to 3:30 PM	Break

3:30 PM to 4:30 PM	Microcontrollers programming (Hands on) (Asier Solutions)
DAY 3 – 3rd June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Intro to Robotics and microcontrollers (Asier Solutions)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Sensors Simulations (Asier Solutions)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Programming of RoBots (Hands on) (Asier Solutions)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Interfacing and calibration of Electronic modules (Hands on) (Asier Solutions)
DAY 4 – 4th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Computer Vision (Mr. Susmit Agrawal)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Computer Vision (Hands on) (Mr. Susmit Agrawal)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	AI and Robotics (Dr. Aditya Kishore Saxena)
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Project Demo. (Dr. Aditya Kishore Saxena)
DAY 5 – 5th June 2021	
Time	**Topic & Resource person**
9:30 AM to 11:00 AM	Research areas and Applications of Robotics with AI (Dr. Rudresh Shirwaikar)
11:00 AM to 11:15 AM	Break
11:15 AM to 12:45PM	Case Study (students)
12:45PM to 1:45 PM	Lunch
1:45 PM to 3:15 PM	Quiz
3:15 PM to 3:30 PM	Break
3:30 PM to 4:30 PM	Feedback Session

COURSE OUTCOMES

Programming for IT Career

CO1: Apply data structures concepts to solve real time problems.
CO2: Analyse and choose suitable data structure for complex problems.

Data Science Using Python

CO1: Apply data science concepts and methods to solve problems in real-world contexts.
CO2: Design Python scripts for different data exploration problem statements.

Internet of Things (IOT)

CO1: Understand the basics of IoT.

CO2: Summarize the protocols of IoT **.**

ANDROID APP Development

CO1: Apply essential Android Programming concepts.

CO2: Install and configure Android application development tools.

Robotics with Artificial Intelligence

CO1: Apply the concepts of Microcontroller, IOT and Robot programming to solve real world problems

CO2: Will be able to select, and apply appropriate techniques, resources, and IT tools for robotics applications.

Participant List

Total number of participants:

Programming for IT Career		
Sl. No	**Name of the Student**	**USN**
1	Sahil Karnany	1BY17IS067
2	G M Kavya	1BY18CS053
3	Anusree	1BY18CS075
4	Kumuda Siri	1BY18CS078
5	Mahalakshmi J	1BY18CS087
6	Manisha M	1BY18CS090
7	Ritika Verma	1BY18CS124
8	Geerammagari Praveenkumarreddy	1BY18EC058
9	Samir Saurabh	1BY18EC143
10	Sodum Manoj Kumar Reddy	1BY18EC158
11	ADITYA ARYAN	1BY18IS006
12	ADITYA KUMAR	1BY18IS007
13	AKANKSHA M S	1BY18IS011
14	AKHILESH B KALNOOR	1BY18IS017
15	ALEKHYA ALLADA	1BY18IS018
16	BUTHURU JAGADEEP REDDY	1BY18IS036
17	CHAITHRA V	1BY18IS039
18	CHARAN S V	1BY18IS041
19	NAIMATHULLAH RAFATH	1BY18IS070
20	NEHA HEGDE	1BY18IS071
21	NIBHA VENKAPPA RAI	1BY18IS072

22	NIKHIL ANAND MAHENDRAKAR	1BY18IS073
23	NIKHITA GOPAL HONNATTI	1BY18IS074
24	NIRISHA B	1BY18IS075
25	NITHIN URALA M R	1BY18IS076
26	PATEL RUTVIK POPATBHAI	1BY18IS079
27	PAVITHRA D A	1BY18IS081
28	POORVI HARISH NAYAK	1BY18IS082
29	PRAJWAL R	1BY18IS084
30	PRASHANTH R	1BY18IS089
31	R K MANOHAR	1BY18IS090
32	RACHANA NATARAJ	1BY18IS092
33	RAGHAVENDRA K M	1BY18IS093
34	RAKSHITHA.R	1BY18IS096
35	RASHMI B S	1BY18IS098
36	ROHAN R DESAI	1BY18IS101
37	S REETHU SHREE	1BY18IS103
38	SANJANA GAJANANA SHETTY	1BY18IS104
39	SHAMANTH KUMAR SHETTY	1BY18IS108
40	SHASHWAT KUMAR	1BY18IS109
41	SHOHEBAHMED NAJEERAHMED GADAWALE	1BY18IS112
42	SHREYA V	1BY18IS114
43	SHRUTI	1BY18IS115
44	SUPRIT H S	1BY18IS121
45	SWEEKRITHI RAO N	1BY18IS123
46	VINAY C	1BY18IS125
47	YASH GUPTA	1BY18IS126
48	ARJOO JHA	1BY18IS130
49	AYESHA SAHEL RAHMATH	1BY18IS146

50	WADHWA SIMRAN DEEPAK	1BY18TE062
51	Anjali P	1BY19EC016
52	Ayush Ranjan	1BY19EC025
53	Bugga Siva Priya	1BY19EC032
54	Farhath	1BY19EC049
55	Kiran Kumar Hegge	1BY19EC078
56	Shreemithra .n	1BY19EC148
57	G.V AKSHARI	1BY19IS057
58	Gagana V	1BY19IS059
59	Gowthami M	1BY19IS063
60	KSHITIJ RAY	1BY19IS082
61	Nagashree D S	1BY19IS102
62	NANDAN G	1BY19IS103
63	NAVYA M NAIK	1BY19IS105
64	R. Deeksha	1BY19IS126
65	RAKSHITH D	1BY19IS130
66	Shilpa Patil	1BY19IS149
67	Shreya	1BY19IS151
68	SHREYA ANTAPUR	1BY19IS152
69	Naveen K	1BY19IS405
70	K Anusha	1BY20IS409
71	Priyanka G M	1BY20IS414

Data Science Using Python

1.	Rahul M	1BY18EC096
2.	Sanjay kumar J	1BY19EC410
3.	Disha D Shanbhag	1BY18IS043
4.	Shridhar A Honnappanavar	1BY18EC150
5.	Prerana Kulkarni	1BY18CS112

6.	Anu Nithya P	1BY19IS029
7.	Rachamallu koushik reddy	1BY19ET040
8.	Purushotham reddy	1BY19ET039
9.	A.HARSHA DEEP	1BY19IS010
10.	Dhivyaa Shree S N	1BY19IS051
11.	Amandeep Singh	1BY18IS019
12.	Divyajeet	1BY18IS044
13.	Ashwin D R	1by18is031
14.	E Vamsi	1BY18EC051
15.	ADABALA HARIKA	1BY19IS009
16.	Manoj B	1by18is065
17.	Laya M R	1BY18IS063
18.	Naveen K	1by19is405
19.	Preetham P M	1BY18EC124
20.	VANDANA S HOSAGOUDAR	1BY19ET056
21.	Ramya S	1BY18IS097
22.	V R Pranay	1BY19EC178
23.	Prajwal B P	1BY19EC117
24.	Shravani V	1BY19CS144
25.	SPOORTHI C MAHADIMANE	1BY18IS116
26.	bhanu pratap singh	1BY19ME007
27.	Rohit Kumar Ojha	1BY19IS136
28.	Syed Arshad Basha	1BY18CS227
29.	ROOBINI G	1BY18CS125
30.	Chetan Singh	1BY19IS044
31.	Sumithra Thapa	1BY19IS165
32.	Ujwala B	1BY19CS172
33.	Tejaskriya	1BY19CS168

34.	VAIBHAVI S M	1BY19IS175
35.	Rohit gangadhar sangammanavar	1BY19IS134
36.	Anagha B A	1BY19EC014
37.	Shiva ranjan HD	1BY19IS150
38.	Pranav Anand	1BY18EE043
39.	SHIVAM KUMAR	1BY18ME052
40.	S Ramya	1BY19CS129
41.	Sahil Karnany	1BY17IS067
42.	Hulsurkar Vastav Vishwas	1BY19IS068
43.	ROKKAM VAIBHAV	1BY19IS138
44.	Ankith Vijay	1BY18CS019
45.	Rohit kunal	1BY19IS137
46.	Sumanth P Hande	1BY18EEE054
47.	VEERENDRA K	1BY19IS411
48.	YASHWANTH K B	1BY19EC415
49.	Rauneet Verma	1BY19IS132
50.	Gunashree B M	1BY18EC059
51.	Nazeef Hasan Abdul Gafar Khan	1BY19IS107
52.	Harsh kumar	1BY18IS136
53.	Ranjith Kishore A V	1BY18CS121
54.	Koushik REDDY	1BY19EC283
55.	Yashas.Krishnamoorthy	1BY18EEE063
56.	Yashas.Krishnamoorthy	1BY18EEE063
57.	MOHAMMED FAHAD R	1BY19EC102
58.	Praneeth P Bavannavar	1BY19EC120
59.	Manjunath L	1BY19EC097
60.	Monish kumar N	1BY19EC104
61.	NIDHI KUMARI	1BY19IS406

62.	Rojalin swain	1BY19CS412
Internet of Things(IOT)		
1.	THANUJA T K	1BY19CS416
2.	SWAPNA T S	1BY19CS414
3.	B S S Rishith	1BY19EC026
4.	KUBER VIJAYKUMAR BELLAD RAMYA U KASHYAP	1BY18TE023
5.	RAMYA U KASHYAP	1BY18TE047
6.	PRAJWAL P	1BY18TE043
7.	NEERAJ K	1BY18TE038
8.	HIMA V	1BY18TE018
9.	VISHAL S V	1BY18TE061
10.	Kavya Shekar	1BY19IS079
11.	B R Muktheswar	1BY19IS035
12.	Hemashree B S	1BY20IS407
13.	ASHITH KUMAR BADAGI	1BY19ME004
14.	Akash A M	1BY19IS015
15.	Niharika D	1BY19IS112
16.	Poojashree P	1BY19IS117
17.	HARSHIT KUMAR	1BY19ME016
18.	Divyani Jain	1BY19EC048
19.	Abhilash A Pujar	1BY19IS005
20.	Priyanka.M	1BY20CS419
21.	Nikhitha B	1BY20CS416
22.	NIKHIL M	1BY19CS407
23.	PAVAN V	1BY19CS408
24.	D S Nesar Reddy	1BY19IS047

25.	MALLIKARJUN HALAGALI	1BY19CS405
26.	Ankith.D	1BY19IS028
27.	Suryaveer	1BY18CS173
28.	Nidhi	1BY19IS110
29.	Prajodh Pragath Sunder	1BY19CS104
30.	Rohit Vijapur	1BY18EC136
31.	UJJWAL SUKHEJA	1BY18IS144
32.	CHIRASYA V	1BY18IS042
33.	AISHWARYA S	1BY18IS010
34.	Vishnu Vardhan Samudrala	1BY19EE060
35.	KAUSTUB K	1BY18IS058
36.	Harish kumar S	1BY20IS406
37.	Shylaja . M	1BY19EE053
38.	Dev Kumar Sinha	1BY19EC045
39.	Darshan K	1BY20IS404
40.	Kshithi	1BY20IS411
41.	Gokul	1BY19IS062
42.	Shreya	1BY19IS153
43.	HarshitRaj	1BY19IS067
44.	Meghana	1BY19IS094
ANDROID APP Development		
1.	Joseph Kenaniah . G	1BY18EC076
2.	Anusha N	1BY18EC022
3.	Dhanyalakshmi K N	1BY18EC048
4.	Chandan Kumar	1BY18EC193
5.	Chhote Babu	1BY18EC194
6.	K Varsha	1BY19IS076
7.	Satyam Kumar	1BY18EC200

8.	NAVYA H G	1BY19EC406
9.	Akshaya N A	1BY18EC015
10.	Suryansh Shrivastava	1BY19IS167
11.	DIVYA TEJA	1BY18EC204
12.	D Sonalee	1BY18EC041
13.	K Moksheshwar Reddy	1BY18EC078
14.	SHWETHA P	1BY19EC411
15.	Kamboji Vedavalli	1BY18EC084
16.	soundarya	1BY19EC412
17.	DIVYANSHU SACHAN	1BY18IS046
18.	Swapnashree K V	1BY18EE057
19.	Nischitha M N	1BY18EE038
20.	Shreenidhi T M	1BY18EE051
21.	Dhyanshekar B M	1BY19IS052
22.	Aishwarya V	1BY16EEE065
23.	Tejesh Y N	1BY18EC172
24.	Priyal Jain	1BY19IS124
25.	Nandini Mahendrakar	1BY19IS104
26.	A Gautham	1BY19IS001
27.	Priyanka S	1BY18EC125
28.	Kalyan Jyoti	1BY18CS070
29.	CHIRAG	1BY18CS046
30.	Chattada Saikusal	1BY19IS043
31.	Tejaswini	1BY19IS169
32.	Vikas Verma	1BY19IS180
33.	Kruthagna K	1BY19IS081
34.	Santhosh Bharadwaj B S	1BY20IS418
35.	Sandeep Hegde	BMSITM76

36.	SANGEETHA M	1BY19EC409
37.	Deepu G	1BY19IS049
38.	Poorna N S	1BY19IS118
39.	Navyashree K V	1BY19IS106
40.	Kushal K L	1BY19IS084
41.	Neeraja Rajesh	1BY19IS108
42.	Shalvi Singh	1BY19IS201
43.	Roshini Sanikop	1BY19IS190
44.	Bharat Singh	1BY18EC033
45.	Abhishek S	1BY19EC005
46.	Lekha R	1BY19IS086
47.	Aftab Ahmed	1BY19IS011
48.	Nesara. A	1BY19IS109
49.	Aparna Narasimha Bhat	1BY19IS030
50.	vandana aradhya	1BY20IS421
51.	Harshita	1BY19IS199
52.	Rishik Raj	1BY19CS120
53.	PUNEETH B	1BY20IS415
54.	P Preethika	1BY19IS115
55.	Pranal Gupta	1BY19IS119
56.	Akash Kumar	1BY18EC190
57.	Rajath.m.hegde	1BY19IS128
58.	MOHAMED ANAS	1BY18TE033
59.	Nilotpal Shanu	1BY19IS114
60.	Dharamjeet Kumar	1BY18EC049
61.	Tushar	18011001031
62.	Rohit Shinde	2KL19CH024

63.	CHIRATHAPUDI AAKARSH SRI SHRESTY	17BTREC025
64.	Namratha J	1BY20CS415
65.	Bhavyashree B k	1BY20CS402
66.	soundarya v	1by19ec412
67.	Bhavana Kumari	1BY19IS041
68.	Akansha Agarwal	1BY19IS014
69.	Rajeshwari M	1BY19IS129
70.	Meghna arora	1BY19CS215
71.	NAVYA HG	1BY19EC406
72.	Yash Gosaliya	1BY19IS200
73.	kavya ganesh shetty	1BY19IS078
74.	Nidhi Balachandra Bhat	1BY19IS111
75.	Nikhil Gowda D	1BY19IS113
76.	akash niraj	1BY19IS016
77.	Maddukuri satwika	1BY19IS088
78.	Yash Harish Gupta	1BY19CS186
79.	Vandana D	1BY19IS176
80.	Ananya Sharma	1BY19IS026
81.	seema bn	1BY19IS146
Robotics with Artificial Intelligence		
1.	Shruti Maruti Chougule	1BY19IS155
2.	Vidyashree N R	1BY19IS198
3.	Abhay M Pamadi	1BY19IS004
4.	Spandana T. S	1BY19IS158
5.	Chaithanya TM	1BY20IS402
6.	Aditi Shanmugam	1BY18TE001

7.	Hemanth S	1BY20CS409
8.	Vinutha H S	1BY19EC414
9.	Samuel Sampath Kumar	1BY19IS144
10.	A LATHISH REDDY	1BY19IS002
11.	Dass Ramesh M	1BY20IS405
12.	Baisani Sreenija	1BY19EC028
13.	DINESH BOLLINA	1BY19IS054
14.	Tharang S	1BY19IS170
15.	Ranjitha M	1BY20CS420
16.	SAVARNIK TIWARI	1BY19IS192
17.	Akul Srinidhi	1BY19IS019
18.	Anjali Sharma	1BY19EC017
19.	Gagan kumar DK	1BY19IS058
20.	Ajith k	1BY19IS013
21.	Srinidhi Lakshman	1BY18EC161
22.	Madhan V	1BY19IS089
23.	AKANKSHA	1BY19EC009
24.	Subhadip Pal	1BY19IS160
25.	Hithaishini.B.S	1BY18EC069
26.	A.S Tushar	1BY19EC022
27.	J P JAIPUNEETH	1BY18EE025
28.	SNEHALAKSHMI M	1BY19CS153
29.	Kavya D	1BY18EC089
30.	Ayush Prakash	1BY19IS033
31.	Akshatha S	1BY18EC013
32.	Aniket Ghosh	1BY19EE004
33.	P MRUTUNJAYA DASH	1BY19EE037

34.	SWAPNIL TOPPO	1BY19IS196
35.	Shubhanshu Vaish	1BY19IS194
36.	Sai prudhvi	1BY19IS142
37.	DEEPIKA G N	1BY18EC410
38.	Bharath C R	1BY18EC406
39.	Yallamraju Anuja	1BY19CS184
40.	Deepak Singh	1BY19IS048
41.	Karthik Shriyan	1BY19IS077
42.	Prinshu Shukla	1BY19IS122
43.	Mithilesh Nayak	1BY19IS097
44.	Harsh vaish	1BY19IS187
45.	Mousami Basavaraj Devikoppa	1BY20IS413
46.	SURYA DEV RATHI	1BY19IS166
47.	VINEET N BELAGOD	1BY19EC177
48.	Ullhas A	1BY19IS410
49.	Sneha J S	1BY19IS409
50.	Ganashree KC	1BY19IS401
51.	Prajwal M Korishettar	1BY19IS407
52.	MAHESH K	1BY20EC410
53.	Dinesh G	1BY20CS406
54.	Anand S B	1BY20CS401
55.	Bharathgowda HV	1BY19IS039
56.	C G Vishal Kumar	1BY20EC401
57.	SUMIT VERMA	1BY19IS195
58.	Harish Kumar G	1BY19IS402
59.	Nishant Pandey	1BY18EC196
60.	Harshitha M	1BY19EC060

61.	SRUJAN R BANGERA	1BY19IS159
62.	YAJNESH R KUNDER	1BY19IS184
63.	VIKAS	1BY19IS178
64.	shruti raj	1BY19IS156
65.	SRAVYA KOTTAPALLI	1BY18IS117
66.	Sankalp Prakash	1BY19EC141

Profile of Resource Persons

Dr. Pushpa S. K. received her Bachelor's Degree in Computer Science and Engineering from Bangalore University, Bangalore, Karnataka, India during the year 1995 and M.E in Computer Science and Engineering from Bangalore University, Bangalore, Karnataka, India during the year 2004. Currently Dr. Pushpa S.K is working as an Associate Professor in BMSIT & M, Dept. of ISE, Bengaluru. She is having 16+ year of teaching experience. She is having 8 Journal papers & 5 International Conference papers in her credit. She is life member of professional bodies like ISTE, ISC & IEEE member. Her areas of interests are Wireless Sensor Networks, Big Data.

Prof. Mahalakshmi completed her B.E from Jayaram College of Engineering and M.E from Bannari Amman Institute of Technology in the year 2003 and 2008 respectively. She is a rank holder and received gold medal in her PG from Anna University, Chennai and has won Best Student -2008 Award. She has completed certification on CCNA Exploration from Cisco Networking Academy and workshop on High impact teaching skills from Dale Carnegie Inc.

Her areas of interest include High performance Computing and Big data. She is pursuing her PhD in Vellore Institute of Technology, Vellore. She has published 15 technical papers in various National &International Conferences and 12 papers in Journals. She has actively involving in organizing various technical talks, workshops and conferences. She has teaching experience of more than 13 years in various Institutions like SRM University, VIT University. At present she is working as an Assistant Professor in BMSIT, Bengaluru.

Prof. Shanthi D L completed her B.E in Computer Science and Engineering from SJCIT, Chickballapur during 1999, and received her M.Tech in Computer Science and engineering from Visvesvaraya Technological University, Belgaum, Karnataka, India during the year 2017. She is having 16+ years of experience in teaching and 2 years in industry, currently she is working as assistant professor in Dept of ISE, BMSIT&M, Bengaluru. Her areas of interest include Networks, Wireless Sensor Networks, Computer network security, IoT, Big Data. She is pursuing her PhD in the Wireless Sensor Networks under VTU, Belgaum. She has published 16+ technical papers in various National & International

Conferences and 10+ papers in Journals. She is a member of IEEE, ISTE, and has delivered various talks and lectures.

Mr. Chandrashekhara K. T received his Bachelor's Degree in Computer Science and Engineering from Visvesvaraya Technological University, Belgaum, Karnataka, India during the year 2002 and M. Tech in Computer Science and Engineering from VTU, Belgaum, Karnataka, India during the year 2008. Currently Mr. Chandrashekhara K. T is working as an Assistant Professor in BMSIT, Dept. of ISE, Bengaluru. He is having 6+ year of teaching experience and 3+ years of industry experience at Intellinet Technologies, Bengaluru and Wipro Technologies Ltd. Bengaluru. He is having 7 Journal papers in his credit. He is member of professional bodies like ISTE, CSI. His areas of interests are Smart Networks-IOT, Big Data and Data Mining.

Prof. Gireesh Babu C.N. received his Bachelor's Degree and M.Tech in Computer Science and Engineering from Visvesvaraya Technological University, Belagavi, Karnataka, India during the year 2009 and 2012 respectively. He has published more than 15 technical papers in various National &International Conferences and 10 papers in Journals. He has actively involving in organizing various technical talks, workshops and conferences. He has teaching and Industrial experience of more than 5 years.

He is a Life member of Computer Society of India and Indian Society for Technical Education. At present he is working as an Assistant Professor in BMSIT& M, Bengaluru. His areas of interests are Smart Networks- IOT, Big Data and Cloud Computing.

Prof .Swetha M S is associated with Information Science and Engineering department of BMS Institute of Technology and Management. She has 12 years of experience in Teaching and research. Her research work is published in Springer and web of science Journals. She is passionate to work on Network security, cyber security, Cloud Computing, AI & IoT and she has conducted workshops and delivered lectures at various FDPs. she has received Bachelor of Engineering from AIT Chikmagalur and Master of Technology in Computer science and Engineering from RVCE- Bengaluru, Currently she is pursuing Ph.D. in Computer Science and Engineering at Visvesvaraya Technological University. She is has attended and presented more than 20 technical papers in various National &International Conferences and Published more than 15 papers in Scopus/web of science/ UCG approved Journals. She is reviewer and technical committee member for many Journals and conference She has got "EXCELLENCE IN REVIEWING AWARD" from Journal of Engineering Research and Reports in June

Month 2020 which is Scopus and open access INTERNATIONAL journal For more details, kindly visit: https://bmsit.ac.in/faculty/5656

Prof. Veena N has completed her B.E from Basavakalyan Engineering College, Basavakalyan. and M. Tech from EPCET ,Bangaluru and Persuing Ph. D from VTU, Belagavi. She has published more than 5 technical papers in various International journals. She has trained various students in companies like Wipro, Siemens, SAP Labs etc,. on various courses such as C,Software Enginerring, DBMS, IoT etc,.. She is a Life member of Indian Society for Technical Education, At present she is working as an Asst.Professor in BMSIT& M, Bengaluru.

Vinutha K working as an Assistant professor in Dept of ISE, BMSIT&M. she has completed her B.E in Channabasaveshwar Institute of Technology Tumkur in 2011 and M.Tech from AMC Engineering College 2013 in CSE. She is having 4.5years of teaching experience and pursuing research in the field of prediction models using Machine learning. Her area of interest is Machine learning and Data mining. She has published 10+ research papers in various International Conference and Journals and delivered 7+ expert talks on various topics of Machine learning, python and data mining.

Dr. Sheela Kathavate has received her B.E. degree in Computer Science and Engineering from Malnad College of Engineering, Hassan and Masters in 1995 from Louisiana State University, USA. She received her Ph.D. from VTU, Karnataka in 2019. Her Ph.D. thesis is titled “Design and Development of an efficient Algorithmic Model for Process Scheduling in Multi-core Systems”. She has worked for Indian Telephone Industries Ltd., Bangalore and Bank One Corporation, USA, spanning over a period of 8 years and is in teaching for 16 years. Currently, she is working as Associate Professor in the department of Information Science and Engineering, and heading the innovation centre at BMSIT&M. Her areas of interest are Parallel Computing and Data Science.

Dr. Geeta Amol Patil, is currently working as Associate Professor in the Department of Information Science and Engineering, BMS Institute of Technology & Management, Bangalore. Prior to this sh e worked as Assistant Professor in the department of

Computer Science & Engineering Presidency University, Bangalore for one and half years. She has very enriching experience while working as Assistant Professor/Lecturer in the department of Computer Science and Engineering in Birla Institute of Technology and Science, Goa Campus for nine years. Apart from this she has worked in Goa University affiliated engineering colleges for six years. She pursued her Ph.D. from Birla Institute of Technology and Science and received Doctorate degree in 2018. She did Master's degree in Computer Engineering in the year 2010 from Gogte Institute of Technology, Visvesvaraya Technological University, Belgaum. She received her Bachelor's degree in Computer Engineering from Goa Engineering College, Goa University in the year 2001. Her research interests are in areas of Cache Architecture, Multi-core / Many-core systems, Multi-processors, Real time systems, Mixed Criticality Systems.

Dr.ManjunathTN, currentlyworkingasProfessorin thedepartment of informationScience and Engineering, BMS Institute of Technology and Management, Bengaluru. He received his Bachelor's Degree in Computer Science and Engineering fromBangaloreUniversity, Bangalore, Karnataka, India during the year 2001 and M. Tech in Computer Science and Engineering from VTU,Belgaum, Karnataka, India during the year 2004. Ph.D from Bharathiar University(NIRF-13),awardedin April-2015,Coimbatore,Tamil Nadu, India. He is having closeto 20 years of Industry andteaching experience.Dr.Manjunath T. N Led the positions of Dean External Relations – BMSIT&M and Head of the Department ofInformation Science and Engineering, BMSIT&M.Worked for various organizations like Accenture Services, Wipro Technologies,Acharya Institute of Technology and SJBIT, he Led positions such as Project Manager, Project Lead, Associate Professor and Lecturer in the above organizations.Travelled United States(US) and United Kingdom(UK) to execute various business engagements throughWipro Technologies.Dr.Manjunath T.N organized and conducted various FDP and workshops and he is speaker for various FDPs and Workshops across the country. He is having 71 International Journal/Conference papers and 12 nationalconference papers in his credit and 2 book chapters. He is having 30 papers which are indexed in scopusdatabase and 5 papers in web of science database and Scopus H-Index of 5. He is having 370 Google Scholar citations and 10 H-index and 11 i-10 Index. He is guiding 5 Ph.D Scholars and 1 Ph.D Awarded under his guidance.He has written 15 funding proposal for various funding agencies. He is a professional corporate trainer. He ismemberof variousprofessionalbodieslikeISTE,CSI,IAENG...etc.Hisareas of interests are Data Warehouse &Business Intelligence, Big Data and Cloud Computing. Currently Dr. Manjunath T N is working on appliedresearch in Data Mining/Data Analyticsfor agriculture and sericulture domains and his having collaborationswith various organizations/Institutions such as Central university Gulbarga, Vijayanagara Sri KrishnadevarayaUniversity Bellary, SSIA Infotech, Promptitude Accounting Services and Orbit Solutions for consultancy services.

About Open Course

Programming for IT Career

The knowledge of DSA is tested significantly in the **technical hiring** process of many companies. This is because the problems that these companies encounter daily are quite huge and complex, and they want to hire smart people who will solve these tasks within minimal time and the least number of resources. Advanced knowledge of Data Structures and Algorithms is a clear indicator of the person's capabilities in solving complex problems in minimal time. In order to face the new market environment which is in constant change, the company must place the customer in the center of its attention. As a result, the company will not follow, first of all, the benefit brought by a certain successful business, but to develop long-term business relationships with the same customers. The integration of Web technologies has an important place into the process of accomplishing companies' objectives to increase the competitiveness degree on the market by generating customers' loyalty. Developing a web-site makes it possible a very good communication with the clients , and this leads, finally, to a constant adaptation of the company's offer to the continuously changing customers' requests.

Data Science Using Python

We are delighted to welcome you to the Department of Information Science and Engineering to learn Data Science using Python: In this course, you will learn both the basics of conducting data science and how to perform data analysis in python. Data Science is not a certain or a single one realm, it's like a combination of various disciplines that are focusing on analysing data and finding the best solutions based on them. Initially, those tasks were held by math or statistics specialists, but then data experts began to use machine learning and artificial intelligence, which added optimization and computer science as a method for analysing data. This new approach turned out to be much faster and effective, and so extremely popular.

Internet of Things (IOT)

Over all aim of the open course was to introduce the new technology called as IOT and demonstrate some hands-on session on IoT. Introduction to IOT which was handled by Dr Surekha K.B. The history behind IoT was narrated to the students. How the evolution of Internet of Things happened from the days where the availability it self was not there was also discussed in the session. Architecture of IoT, real time examples on IoT was discussed. Students enthusiastically asked the questions on one particular example

"vehicle to vehicle communication". Structure of the IoT and Why IoT is becoming a popular technology in the coming days was also discussed in the session, challenges in IoT, protocols used in IoT was also discussed.

In the next session Dr Narasimha Murthy, explained the topics "Overview of Sensors, Analog and Digital Sensors". The session was started with couple of questions on fundamentals of IoT, further the brief idea about IoT and its requirement in today's modern life was highlighted. Sensors, its types, and need of sensors in every IoT application was discussed. Adding to the above the discussion was also made on some real time applications of IoT in creating smart home, smart office etc., and the types of sensors used.

Further sessions, Dr. Shridhar Sanshi gave a hands-on session on using of online simulator tinkercad. Explained how to develop a sketch and design a circuit. Explained working principles of various sensors such as temperature, Photoresistor, servo motor, potentiometer, soil moisture, PIR sensor. Hands-on sessions on interfacing these sensors to Arduino were demonstrated. He also demonstrated the experiments using ultrasonic sensors, controlling DC Motor which can be used in real-time applications. Mr. Anirudh working as a Software Engineer working at Mindtree demonstrated the experiments on the real Arduino board.

The last two days session were handled by Mr. Rohit Japgal, Software Technologist, PHILIPS Innovative Campus. Mr. Rohit Japgal is currently working on Real Time Projects on IOT. He gave the introduction about the Cloud Technology and services of the cloud. He also familiarized the students with various cloud platforms used for IoT. He also explained how to make use of the cloud services in IoT. He introduced Heraku Cloud platform to the students. He also took one example of how the sensed information can be uploaded to cloud. He concluded his session with some applications like automobile Industry and Home automation system. In detail, he demonstrated, how IoT sensor collected data can be processed in cloud.

The concluding session students made outstanding presentation on variety of sensors used in different applications, like automobile, health, industry and agricultural applications

ANDROID APP Development

ANDROID mobile applications have influenced most of the industries as part of the digital revolution today. It transformed the mobile app market. There is a broad range of Android apps, particularly in the business world. Android app development is the process by which applications are created for devices running the Android operating system.

Mobile applications provide different platforms to business and brands. Mobile Apps connect companies directly with users and make better engagement with customers. Mobile apps provide many benefits to companies like better connectivity between user and company, increase user base, better business reach and a major benefit is it makes the brand world popular in minimum time.

Practice of niche technology like ANDRIOD and other helps students to know the industry requirements better. This builds confidence in students to present themselves in placements to get better opportunities. Some students were able to take their learning further to build good projects and setup companies or to work as freelancers.

Robotics with Artificial Intelligence

Artificial intelligence and robotics are bringing drastic changes in the technological fields. Things we only imagined twenty years back have now become a reality. From automated systems at a manufacturing plant to self-serving robots in a restaurant, technology has evolved, driving humans together. In Today's world, AI and robots serve people as problem-solvers, companions, and first-responders. Technology has evolved for good, and it is not going to stop here. This open course focusses on the basics of Artificial Intelligence, Robotics and Arduino Programming with hands on sessions.

The course started with the introduction of external resource members, faculty and student coordinators. The first session discussed the basics of ML along with examples and we made our own training model using Google teachable machine. The rest of the day was spent discussing the various electrical components starting from the basics such as resistors, capacitors, transistors etc. to the more advanced components such as microcontrollers including various examples such as Arduino, these components were then demonstrated using tinkercad software along with a basic blinker program. The next day was centered on the concepts of IOT. This included the specific hardware such as sensors, motors, NODEMCU ESP8266 board. The programming of NODEMCU was done using Blynk app. The next two sessions were spent integrating the NODEMCU with web services such as Adafruit IO and IFTTT. The last session was spent utilizing the real IO devices such as sensors and servos. The next day was spent working on first working robot, this started with the construction and working of the LM298N motor driver. Various types of motors such as stepper motors, servos, brushless dc motors, etc. were explained. The next two sessions were spent discussing and constructing a basic line follower bot along with the code implementation and this was a practical session with the actual bot running in the last session. On day 4, in the first two sessions, discussion on Computer Vision in great detail such as the use of opencv and the tensor flow model along with tools such as matplotlib to represent the obtained data was discussed. The next

session was spent elaborating the use of AI in real world applications along with the types of ML training models and their efficiency. The last day was split into 2 sessions where the first one detailed the importance of patents and the risks involved with innovations and intellectual property rights. Along with this, a case study was presented by the students of 4th semester regarding their project on waste management using ML to determine whether the waste is recyclable or non-recyclable. The afternoon session of the 5th day was a quiz to the participants and feedback sessions. Hence, the course came to an end with a formal thanks to all the members who made it possible.

Programming for IT Career

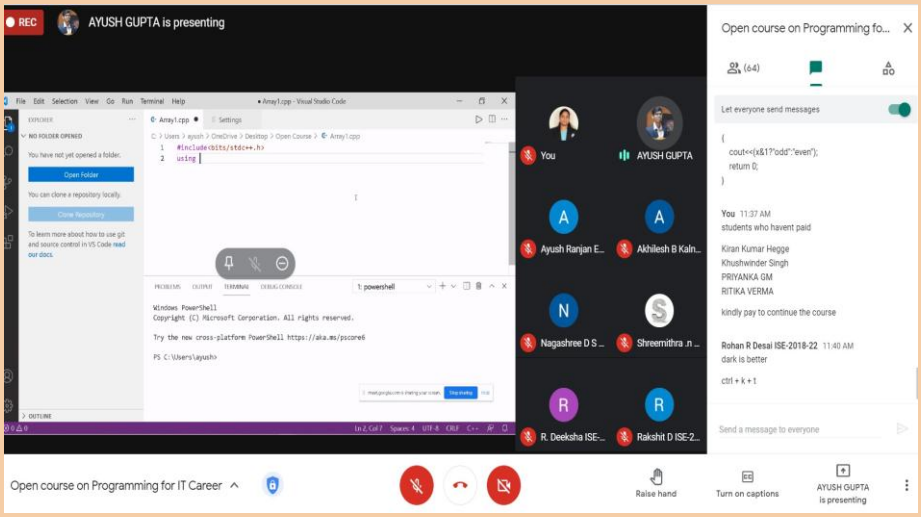
Day 1:

MORNING SESSION: -

The first session was on “Basics of Data Structure” handled by Mr.Ayush Gupta , highlighting the basic concepts of Data Structure. He introduced the participants to the concepts of Primitive & Non-Primitive, Time and Space Complexities, Shift Operators.

He explained the logic for Bit Magic Problem. The discussions also included Complexity notations and their significance.

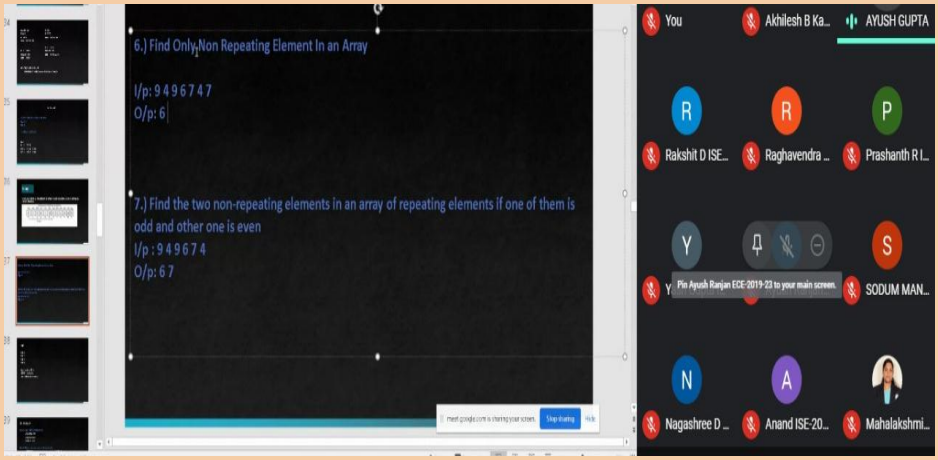
There was a discussion on Problem statements of Swapping function, Odd Even Number and on XOR operation.



AFTERNOON SESSION: -

The afternoon session focused mainly on Programming handled by Prof.S.Mahalakshmi. This session included core topics like Recursion: Fibonacci Series, Factorial of a number, Binary Search and Reversing an Array. Students were asked to code on these Problem Statements. The session was mainly focused on enhancing Programming skills of the students.

At the end, a quiz was given and the students were asked to share their feedback.

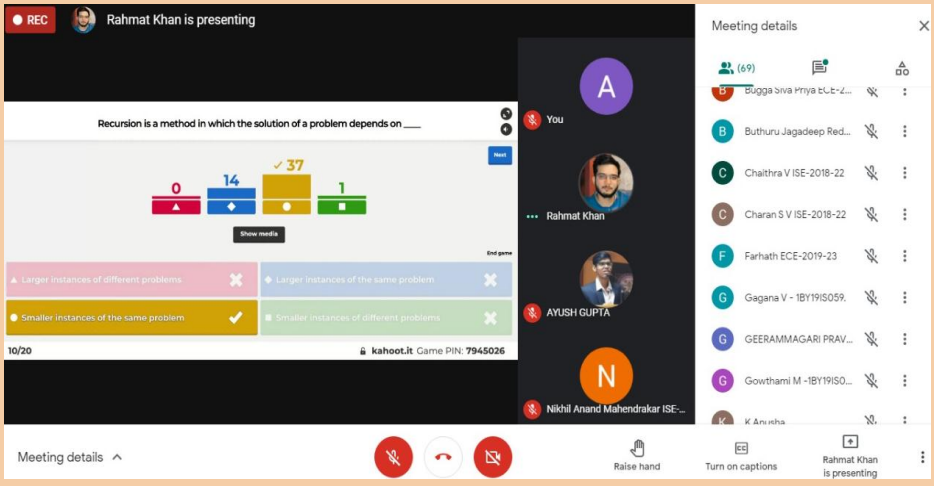


Day 2:

MORNING SESSION: -

The second day began with solving various Problems on Programming by Mr.Rahmat khan. Students were taught about Recursion. The Problem Statements include: Maximum sum of sub-array, Sum of K-Consecutive elements in Array solved using Kandane's Algorithm. Then Strings and associated Problem Statements were discussed which include: Finding Number of Consonants and Vowels in a given String, Number of characters in a string.

Later, the students were given quiz in "Kahoot" conducted by Mr. Rahmat Khan. It included 20 question based on the concepts taught during the previous sessions.



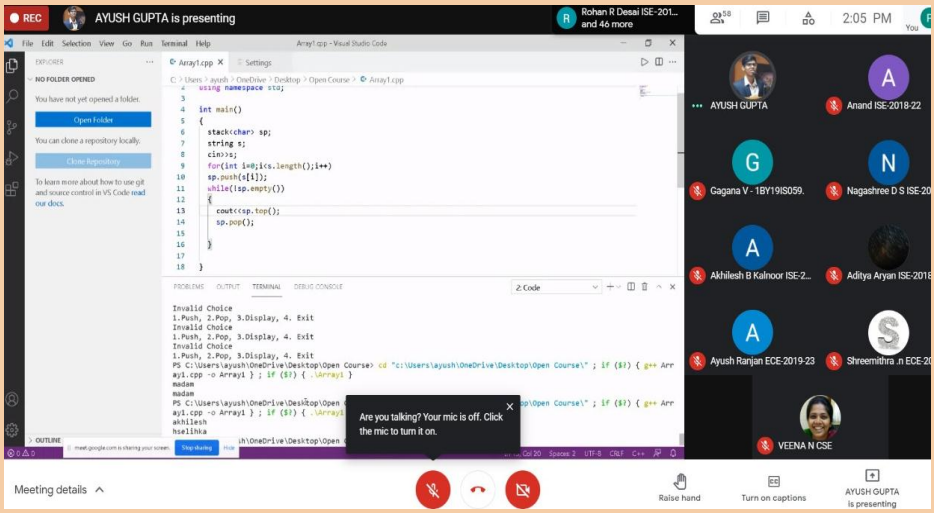
AFTERNOON SESSION: -

The afternoon session focused mainly on Stacks and Queues. Problem Statements on these Data Structure were also solved during the session: Basic Push & Pop operation,

Checking Palindrome or not, Balanced Brackets, Basic Queue operations, Generating Binary numbers from 1 to n, Different types of Queues.

Concept of Pointers was discussed along with its basic functions.

The session concluded by discussing about Linked List: Creation, Insertion, Deletion of nodes.

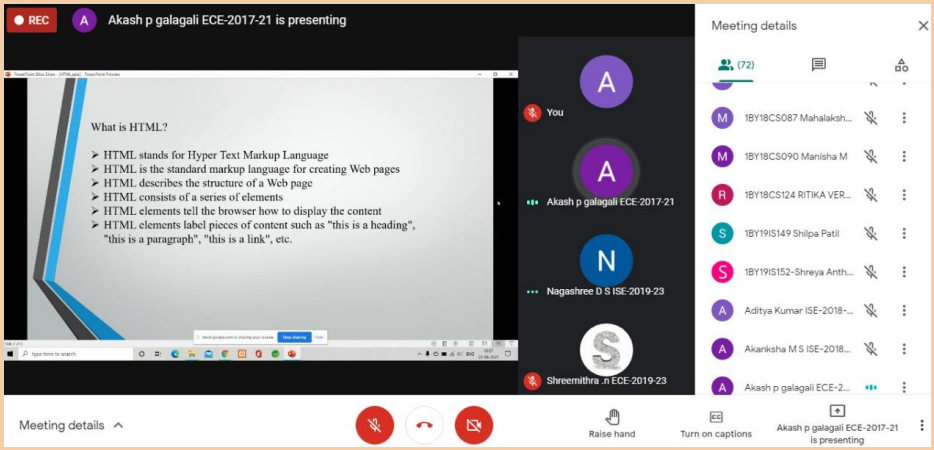


Day 3:

MORNING SESSION: -

The third day began with a quiz on "Kahoot". This quiz was based on the concepts taught during the previous sessions. Then the students were introduced to Web Developments technologies like HTML,CSS, JS by Mr.Chetan Kulkarni and Mr. Akash P Galgali.

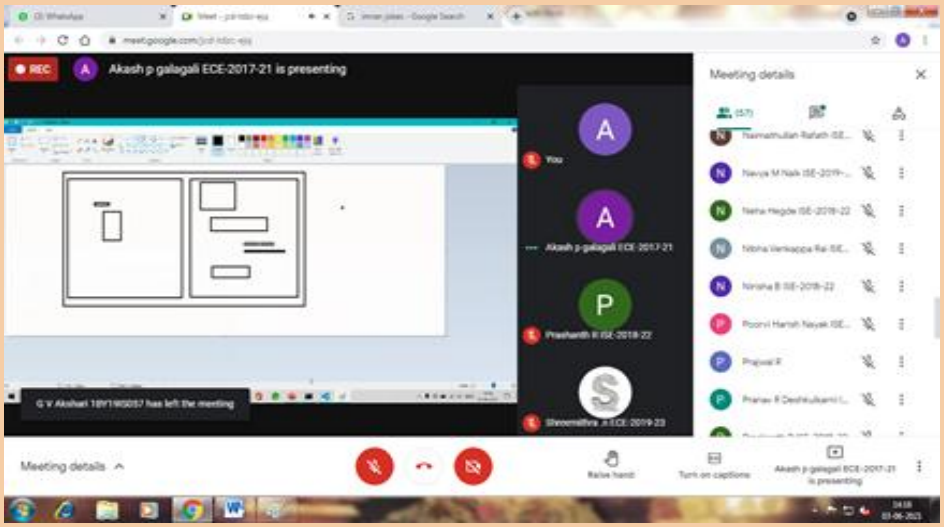
The students were briefed about the importance of Web Development and its scope in future. The topics discussed during the session include: Heading tags,3 Types of list, anchor and img tag, Table, Radio buttons Div &Span. CSS concepts were also introduced to the students. It was also demonstrated that how important is CSS for Web Development.



AFTERNOON SESSION: -

The afternoon session focused mainly on the core of HTML and CSS concepts which include: Box Model, Padding, Margins, Background Design. Then the students were introduced to forms, input label and buttons. The students were taught how to add styling to a Html page with a demonstration.

At the end, the students were given a task on Web Development involving all the concepts that were taught during the session.

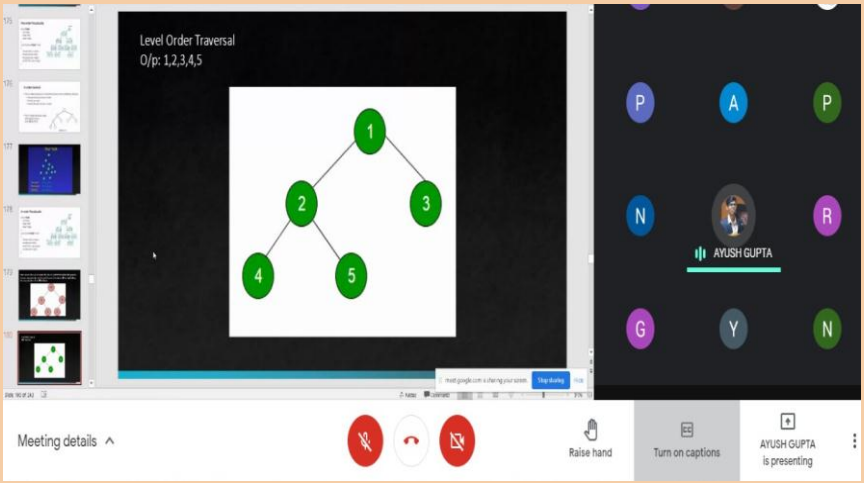


Day 4:

MORNING SESSION: -

The fourth day began with a quiz on "Kahoot". This quiz was based on the concepts taught during the previous sessions.

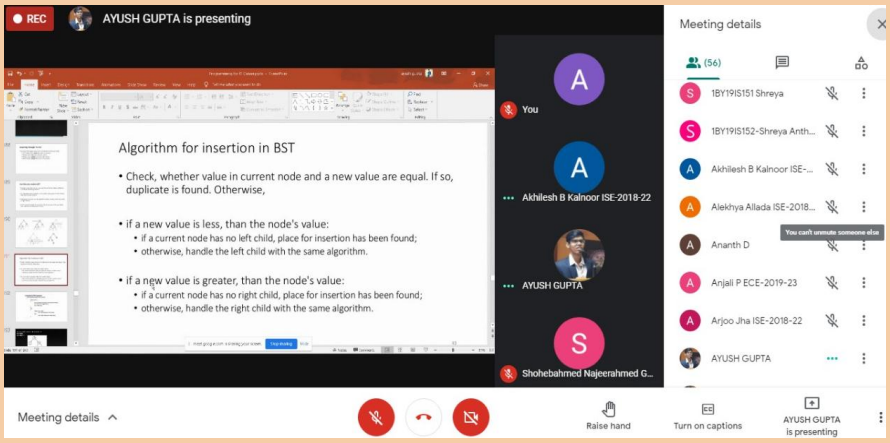
Then the students were introduced to non-linear Data Structure by Mr.Ayush Gupta and Mr. Rahmat Khan. Non-Linear Data Structure includes primarily Trees and Graphs. The topics included were: Pre-Order Trees, Post-Order Trees, In order Trees, Binary Search Trees, Level-Order Trees. The Code associated with these topics was also explained. Students were given a task to find out In-order, Pre-order, Post-order traversal for a given tree.



AFTERNOON SESSION: -

The afternoon session was a continuation of the concepts taught during the morning session handled by Prof.S.Mahalakshmi and Prof Veena N. The session focused mainly on Graphs: Directed and Un-directed Graphs, Graph Properties, Representation of Graphs, Adjacency matrix, Lists.

Later the students were introduced to the core OOPS concepts which includes: Inheritance and its Types, Abstraction, Aggregation, Polymorphism, Encapsulation, Collision, Cohesion.

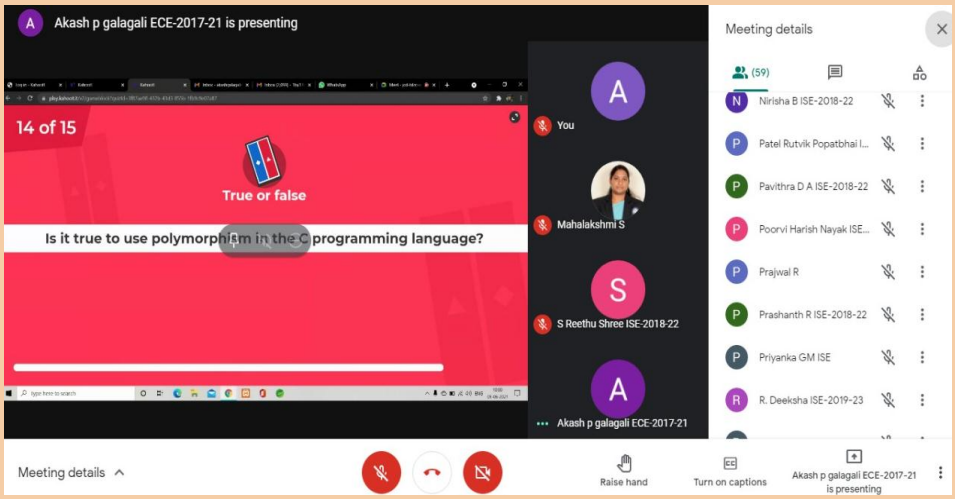


Day 5:

MORNING SESSION: -

The fourth day began with a quiz on “Kahoot”. This quiz was based on the concepts taught during the previous sessions.

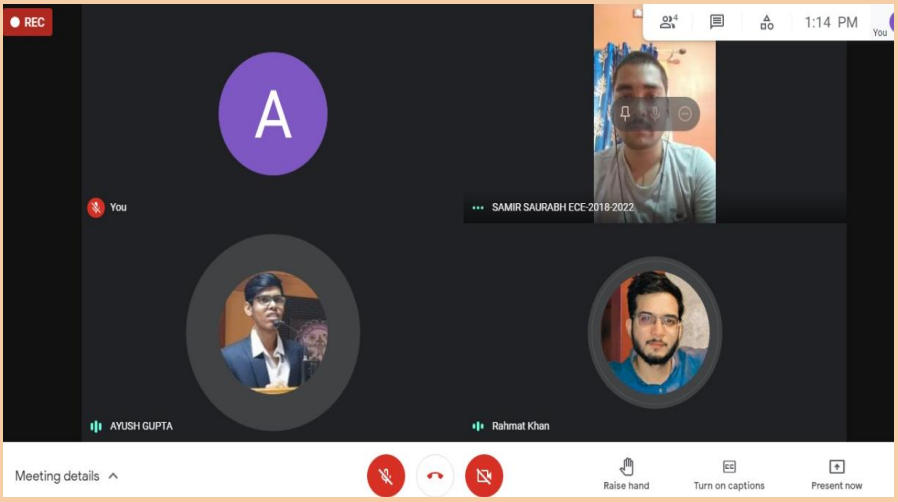
There was a discussion on Placements by Prof. Ambika S. Where students clarified their doubts regarding: Interview Rounds, Criterion for Placements, How to prepare for them.



AFTERNOON SESSION: -

Mock Interviews were conducted by dividing the students in 4 groups. They were asked questions on Data Structures and the concepts taught during the Open Course. Students were participated with great enthusiasm.

At the end, students were asked to give their Feedback on the Open Course. All of students and resource person appreciated that the 5 days course was very good and more interactive.



Data Science Using Python

Day 1:

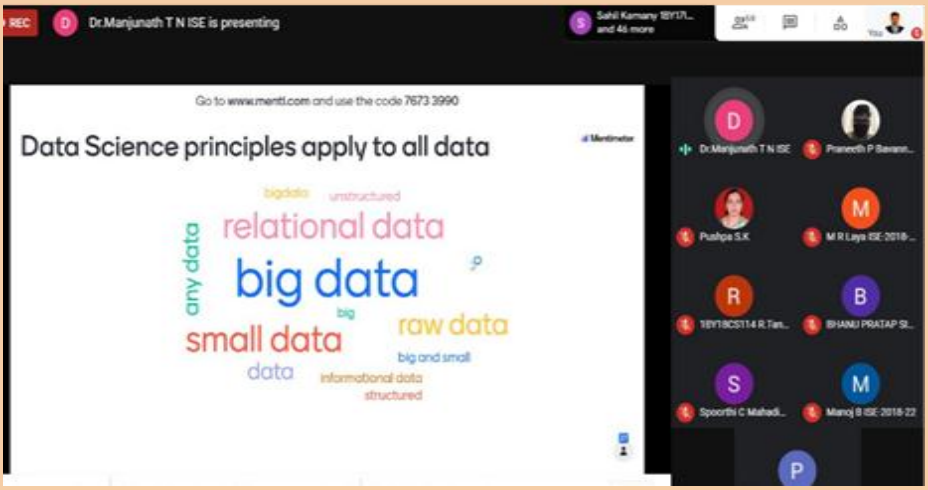
MORNING SESSION: -

The first session was on " Introduction to basics of data science and data into

analytics " and " Python Introduction and Python Ecosystem " handled by

Dr. Manjunath T.N, highlighting meaning of Data Science and the skills and knowledge required to get into a Data Scientist Roles. A brief introduction to the python language and python ecosystem was taught.

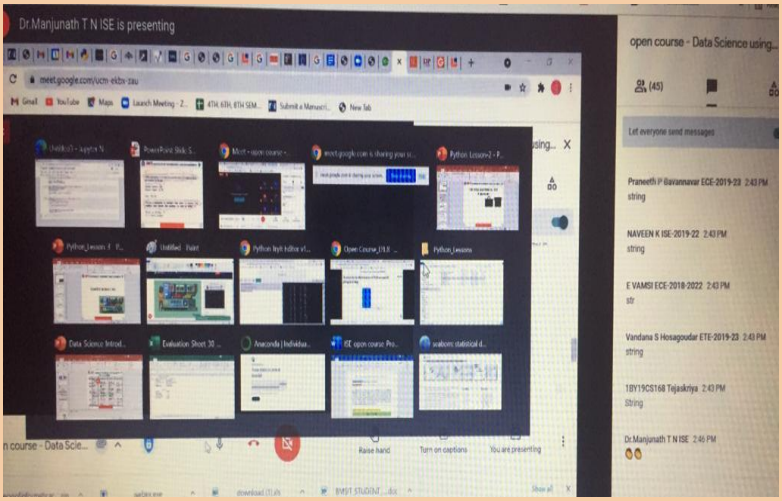
The roles of Data Scientists were listed out and the students were asked to imagine as respective Data Scientist Roles and give their opinions on it. Case studies of 'Cancer Research', 'Health Care', 'US election', 'IoT', 'Customer Analytics' were explained briefly. Python libraries were explained briefly and reflections on the above topics were taken before a new concept was started. The students participated enthusiastically in the session and were made to download Anaconda and Jupiter notebook for the upcoming session.



AFTERNOON SESSION: -

The session was a Hands-on session on Jupiter Notebook conducted by Dr. Manjunath T.N. The concepts like type conversion, input function, importance of precedence, conditional statements , comparison operators, try and except structures were briefly explained and were executed on the Jupiter Notebook. Reflections were taken on these concepts were taken.

The further session was taken up by Prof. Chandra Shekar on the topic Functions. The concepts like function definition, arguments, parameters, importance of indentation, fruitful function and the usage of multiple parameters were taught. The concepts were taught by executing the examples for the same.

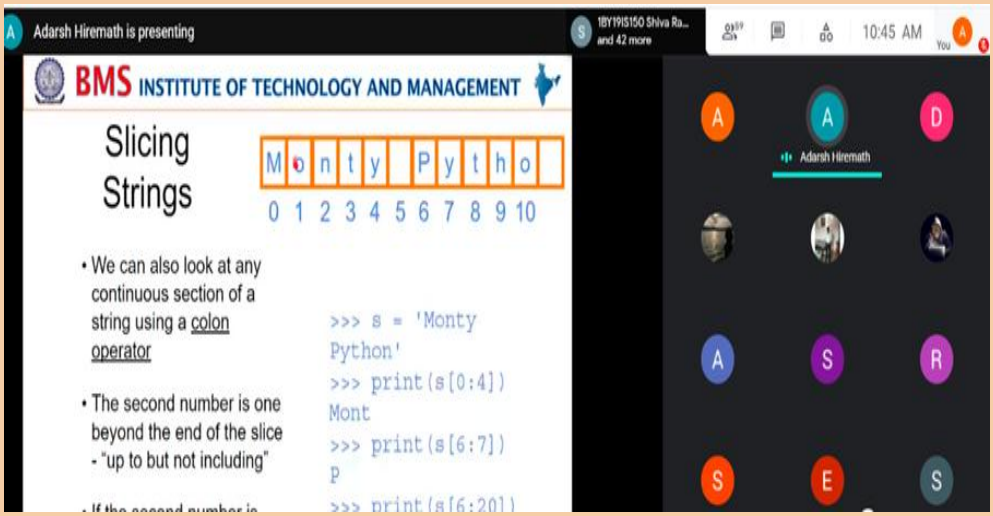


Day 2:

MORNING SESSION: -

The session was started with a brief "Introduction to loops and Iterations, Strings" by Mr. Adarsh Hiremath, who explained about the types of loops and iteration commands and the respective syntax. A brief "Introduction to Stings" was given, concepts like looping through string, slicing, concatenation, stripping and find functions. Parsing and Extracting string from mail was demonstrated.

The session was further continued by Mr. Abhijeet on the topic of "File Operations using Python". Introduction on files was given, followed by Operations on files, Methods like seek(), tell(), writeable(), seekable() etc. was demonstrated. Error handling for file operations was also explained. Searching and Sorting of file contents was executed and explained. Reflections of the same were taken.

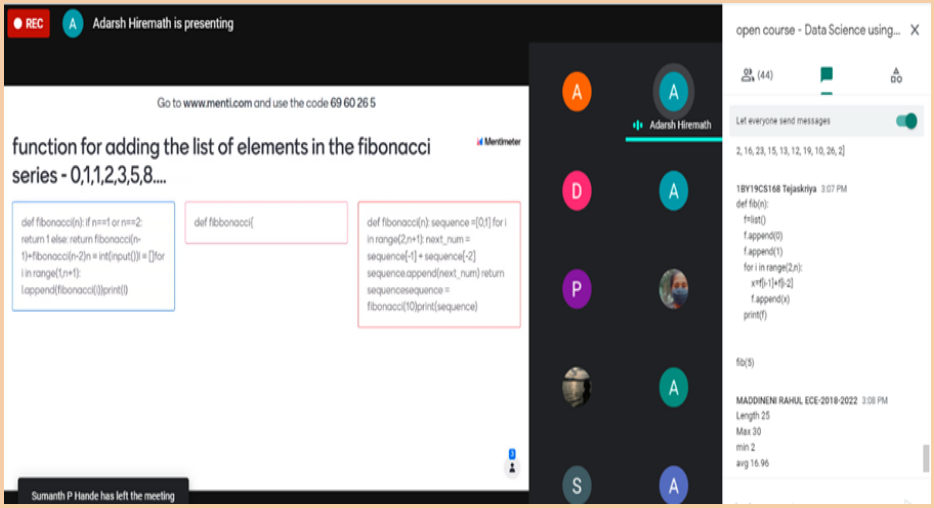


AFTERNOON SESSION: -

The session was based on "Lists" taken up by Mr. Adarsh Hiremath, detailed explanation on concepts like slicing, concatenation, append, range functions was given with suitable examples. Data Manipulations was taught by executing suitable programs. A reflection on the concepts was taken by giving "Fibonacci program" as a question to solve. Further questions was posted in google classroom as assignments for the students.

The session was further continued by Mr. Abhijeet who in detail explained the "Dictionary in Python", the importance of dictionary was listed and the structure of

dictionary was explained. Methods like keys(), values() ,items(), pop(), popitems() ,setdefault() was explained with examples which were executed on Jupiter notebook. Error handling concepts was also explained in detail. Assignments was assigned in google classroom.

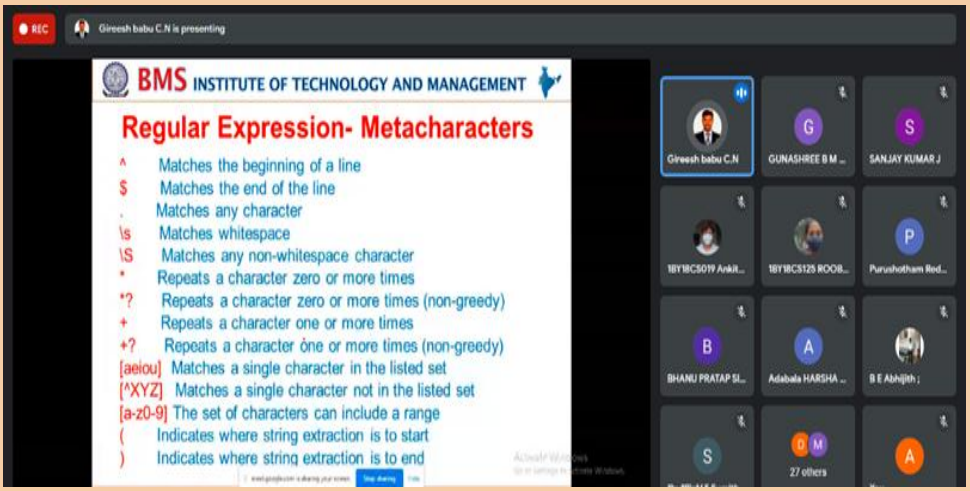


Day 3:

MORNING SESSION: -

The session was based on “Data Handling using Tuples” which was handled by Dr. Manjunath T.N. The session started with a delighting video on “Data Science”. Later, the concepts on Data Types-Mutable and Immutable data were listed and explained. The concepts on Tuples were explained by comparing it with lists and dictionaries. Operations on tuples was taught by executing relatable programs, sorting list of tuples was also demonstrated on Jupiter Notebook.

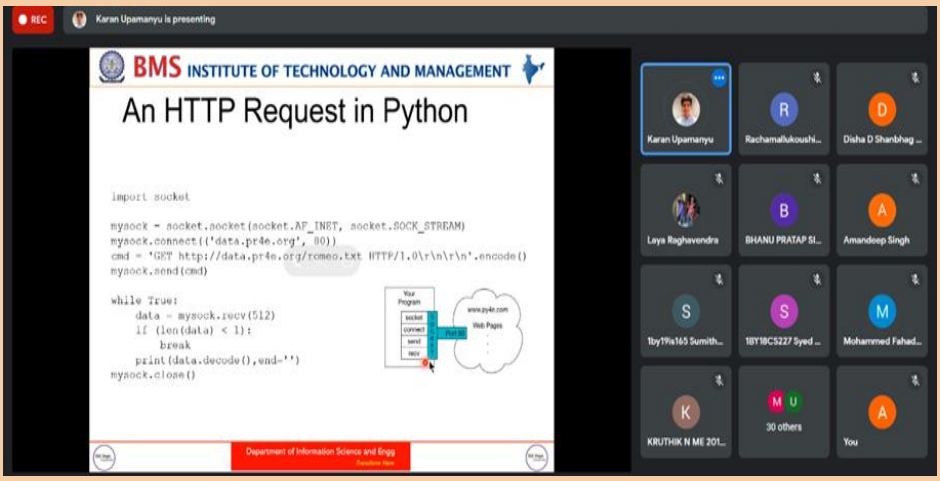
The session was further continued by Prof. Gireesh Babu C N who explained the topic “Regular Expressions”. Highlighted importance and uses of regular expressions in different areas through various programming languages. Explained the concept of patterns, anchors, repetitions, patterns to find list of python files was taught in detail through execution on Google Colaboratory. Regular Expression modules like search (), findall (), split () etc. was explained by executing related problems.



AFTERNOON SESSION: -

The session was based on "Networking Programming and Data movement through Http" by Mr. Karan Upamanyu. The TCP/IP model and its layer was explained briefly. The concepts related to Sockets like TCP port number, SMTP, Telnet using real time examples. Built-in support for socket in python was explained in detail. Application protocol- HTTP protocol was explained by demonstrating few websites and the insights of Instagram application was also explained. Status codes and request methods were explain using websites created for the purpose.

A mini browser was built using python in spyder editor. The AF_INET, Socket stream, carriage return etc. keywords used in code was explained in detail. Encode (), decode () and ord () was explained by executing the related code. Multi-Byte character, type mismatch, chrome store charset was demonstrated. Urllib in python and retrieval of Html code from a webpage was also demonstrated using the code of mini browser.

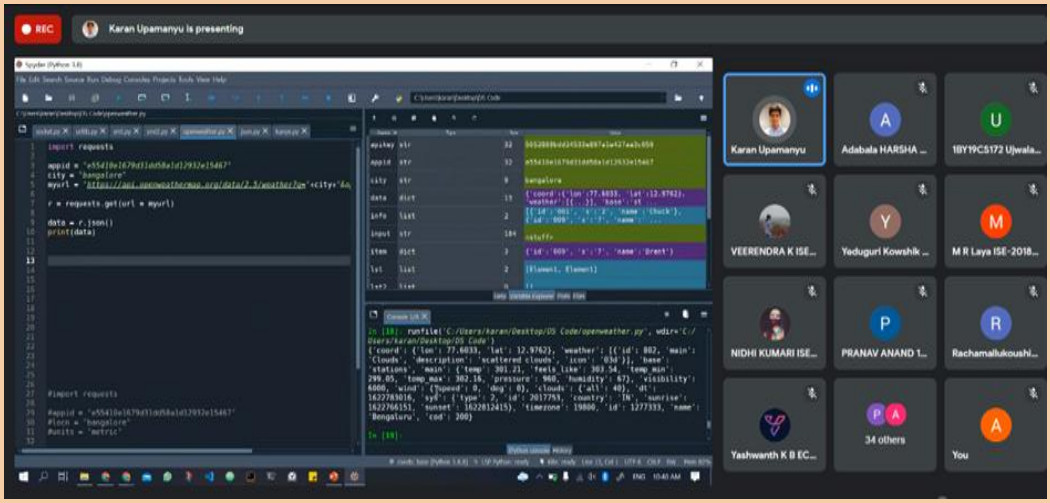


Day 4:

MORNING SESSION: -

The session was based on "Reading data across network" by Mr. Karan Upamanyu. Concepts on serialization and deserialization, Xml in python element tree module, Xml as path etc. was demonstrated and explained using Spyder python editor. Concepts on Json and a service-oriented approach towards API's using Json was explained using a website named "Kanye Rest". A hands-on session to build a weather application was taken was explained using an open API account called OpenWeatherApi.

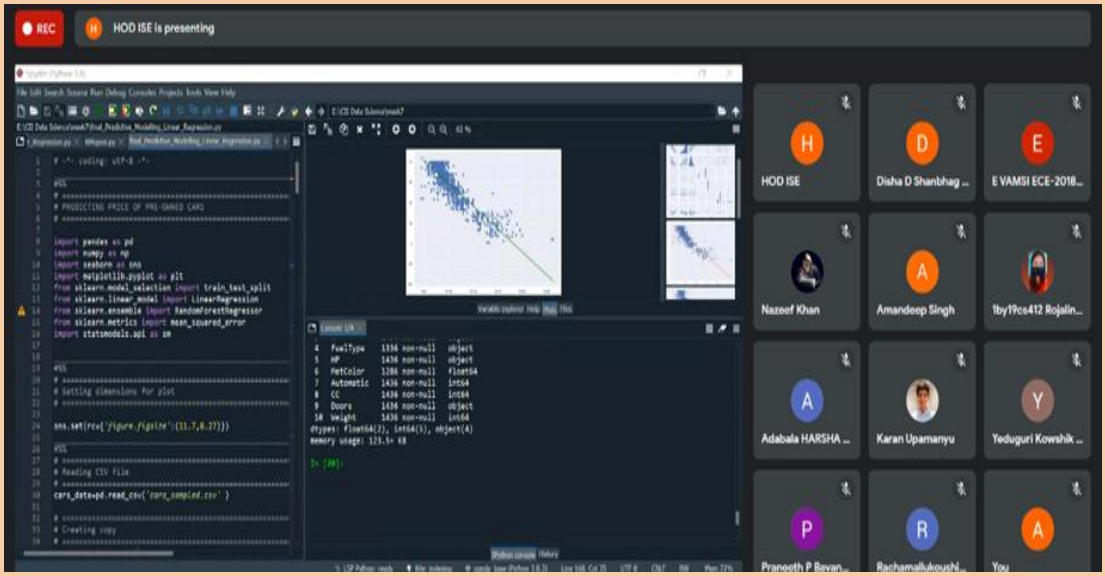
The session was continued by Dr. Pushpa S.K, who introduced the topic of "Data Visualization". The approach to data visualization and its importance was briefed out with a video. SMART framework, data visualization in different industries and tools available for the same was explained. Types of Data Visualization charts was briefly explained and a Hands-On session was held to demonstrate the Charts like histogram, scatterplot, heatmap etc. that are used in Data Visualization.



AFTERNOON SESSION: -

The session was held by Dr. Pushpa S.K on "Predictive Analysis". A brief introduction to the regression Concept was given. Related concepts like line drawing concept, assumptions in linear regression were explained in detail. Hands-On session on for simple and multiple linear regression technique was demonstrated by using Python libraries like Seabourn, Sklearn etc. and functions like drop (), dropna (), info (), pairplot (), corr (), drop_duplicate (), fit () etc. was explained in brief while executing the program for data visualization. Concepts like F-Test, Interpretation of co-efficient, regression-categorical predictors were explained with their respective formulas.

The session was followed by Prof. Gireesh Babu C.N who introduced the concepts of "Applying data set on machine learning models". A brief introduction to Industrial revolution and it use cases was given. Various types of machine learning concepts like image classification, speech recognition etc. were discussed. An example was given on how to train a data set for categorial Machine learning. Later, types of Machine Learning that is supervised, unsupervised and semi-supervised learning was explained briefly with suitable examples. The concept of KNN and its algorithm was introduced.

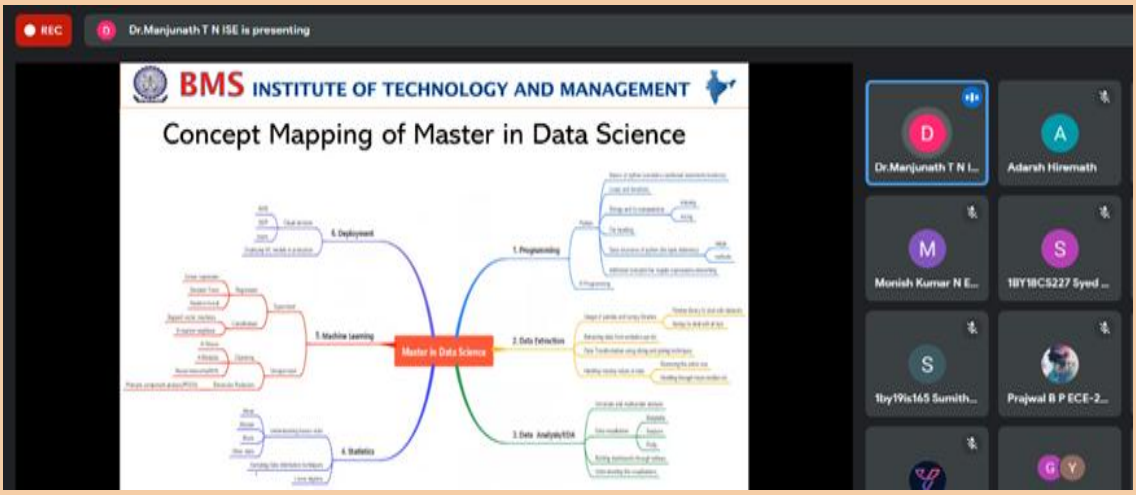


Day 5:

MORNING SESSION: -

The morning session was started with a refreshing video of Data Science by Dr. Manjunath T. N. The Data science projects with "Use Cases" such as Brain Tumor Detection, Sentimental Analysis of domain NLP, Leaf Disease Detection of domain Agriculture Science, Big Mart Sales Prediction of domain Retail Industry, Chicago Crime Analysis of domain Crime Prediction, Human Activity Recognition of domain medical sales along with their dataset, problem statement and methodology was discussed. Websites like TechGIG, GOI was introduced to follow good projects and hackathon in future.

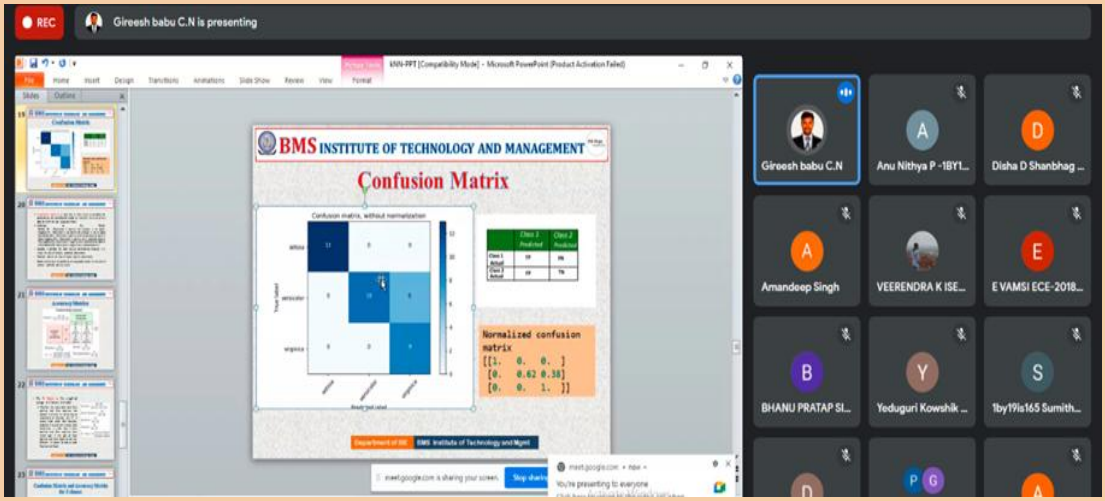
The session was continued by Prof. Chandrashekar K.T, who in detail explained concepts on "Predictive Modeling". Topics like Bayes theorem, Attributes, confusion matrix, accuracy metrics were explained with weather prediction example. Hands-on session on Naïve Bayes was taught on Breast Cancer Dataset in detail. A mini project was assigned to based on classification, linear regression, KNN. Data set from Kaggle was given so that the students can choose the topic and do the mini project.



AFTERNOON SESSION: -

The session was conducted by Prof. Gireesh Babu C. N. The topics on KNN and K-Means was elaborated with the example of class of iris flowers. The algorithm and its flow were explained in detail by executing the program in Spyder editor in python programming language. A detailed explanation for training and testing, accuracy metrics of models in machine learning was explained in detail by executing the code in spyder. A detailed study of confusion matrix was given and the formation of the same was explained with suitable formula and examples. Calculations for K-means and cluster centroid was explained in detail with examples.

The session was conducted by Dr. Manjunath T. N who addressed Dr. Pushpa S.K, Prof. Gireesh Babu C.N, Prof. Chandrashekar K.T, the coordinators and all the other participants of the open course. An acknowledgement speech was given by the above faculties to the participants.



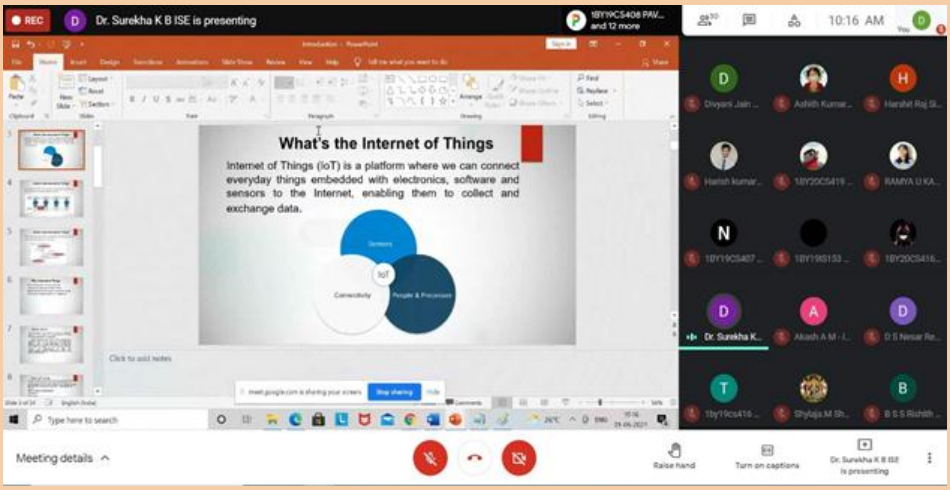
Internet of Things(IOT)

Day 1:

MORNING SESSION: -

Morning session was on Introduction to IOT which was handled by Dr Surekha K.B. The history behind IoT was narrated to the students. How the evolution of Internet of Things happened from the days where the availability it self was not there was also discussed in the session. Architecture of IoT, real time examples on IoT was discussed. Students emphatically asked the questions on one particular example "vehicle to vehicle communication".

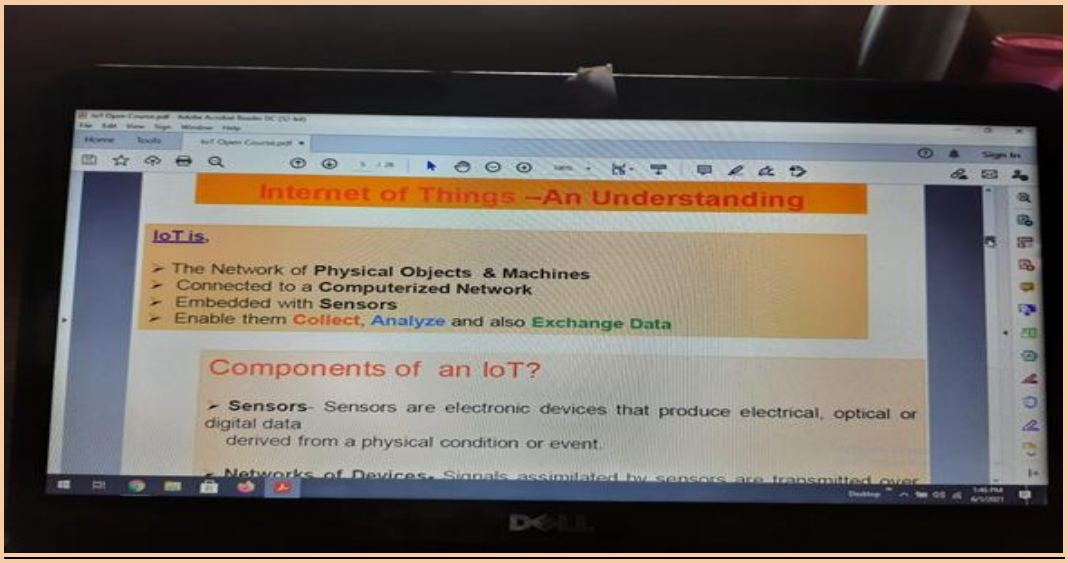
Structure of the IoT and Why IoT is becoming a popular technology in the coming days was also discussed in the session.



AFTERNOON SESSION: -

Afternoon session was handled by Dr Narasimha Murthy, the topics were "**Overview of Sensors, Analog and Digital Sensors".** The session was started with couple of questions on fundamentals of IoT, further the brief idea about IoT and its requirement in today's modern life was highlighted.

The session was continued with the topic of Sensors, its types, and need of sensors in every IoT application was discussed. Adding to the above the discussion was also made on some real time applications of IoT in creating smart home, smart office etc., and the types of sensors used.

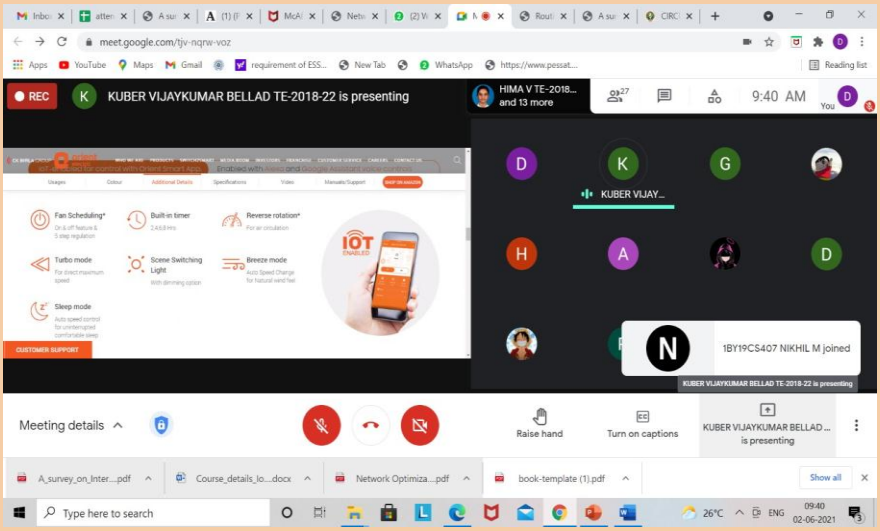


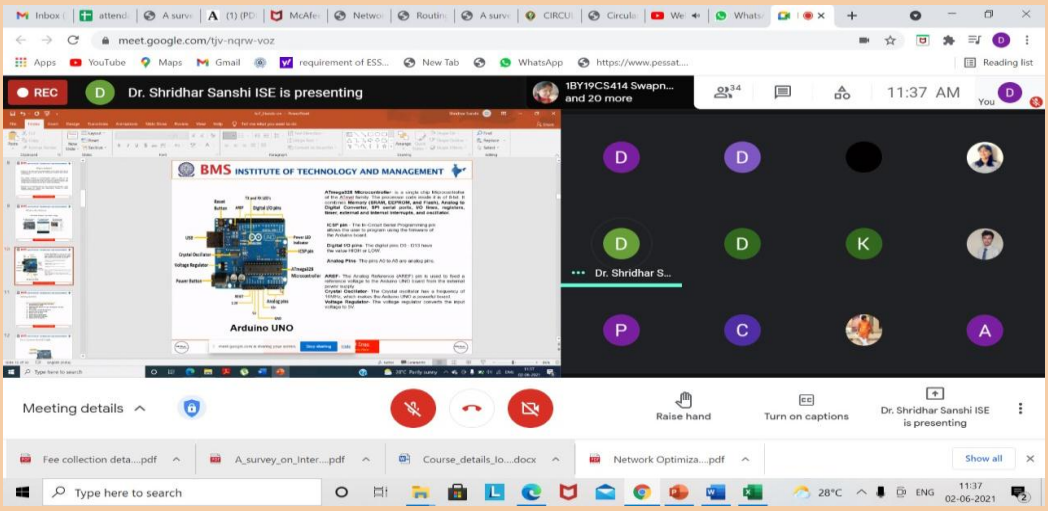
Day 2:

MORNING SESSION: -

Morning session was on challenges of IoT, which was handled by Dr Surekha K.B. Students eagarlyo explained some applications on IoT ,which they found interesting. The major challenges to implement IoT system successfully were discussed with analogy. Why security is more challenging task in IoT was also discussed in the session. The architecture of IOT on different views like operational was also explained in the session.

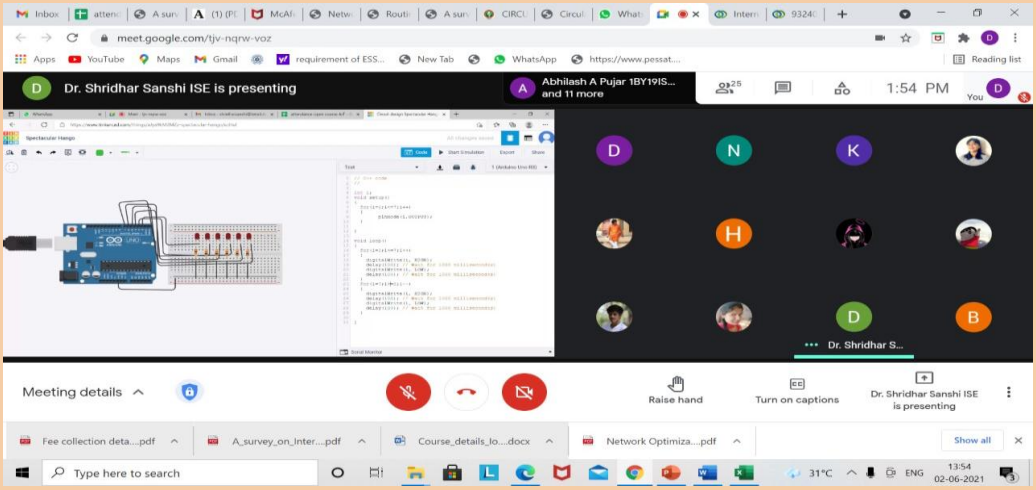
The second session in the morning was handled by Dr Shridhar Sanshi, where he explained pin diagram of Arduino board and the basic things about board.





AFTERNOON SESSION: -

In afternoon session, working of different sensors such as temperature, Photoresistor, servo motor, potentiometer, soil moisture, PIR sensor were explained along with interfacing these sensors to Arduino was demonstrated by Dr Shridhar Sanshi.

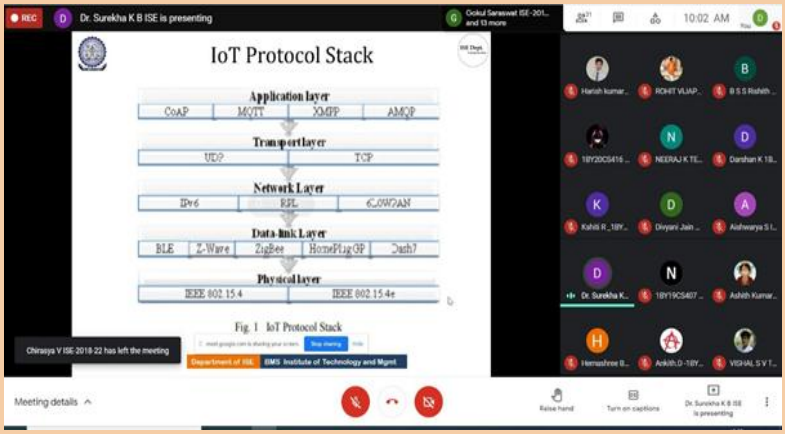


Day 3:

MORNING SESSION: -

Morning session was on Protocols required for IoT, which was handled by Dr Surekha K.B. Why the protocols used in Internet cannot be used by Internet of Things was explained by using analogy. The imprortance Bluetooth as a datalink layer protocol, and why http can not be used as application layer protocol was also discussed in the session.

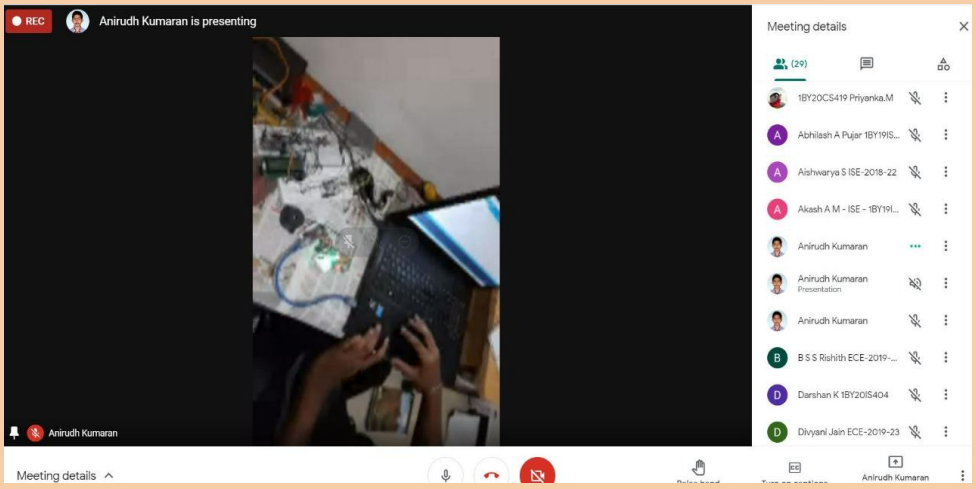
The second session in the morning was handled by Dr Shridhar Sanshi, where he demonstrated the experiment on displaying text using Aurdino((simulation).

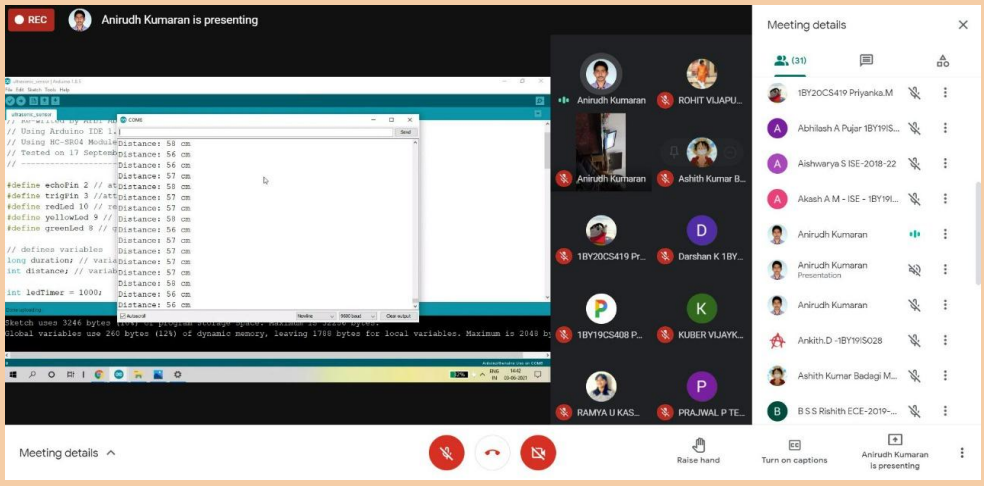


AFTERNOON SESSION: -

In afternoon session, Dr. Shridhar Sanshi demonstrated the experiments using ultrasonic sensor, controlling of DC Motor which can be used in real time applications. Mr. Anirudh..Software Engineer working at Mindtree

Demonstrated the experiments on the android board.

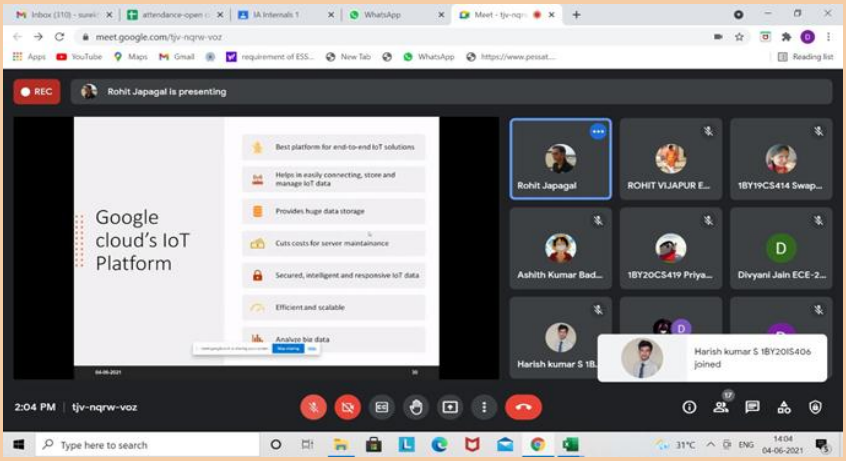




Day 4:

MORNING SESSION: -

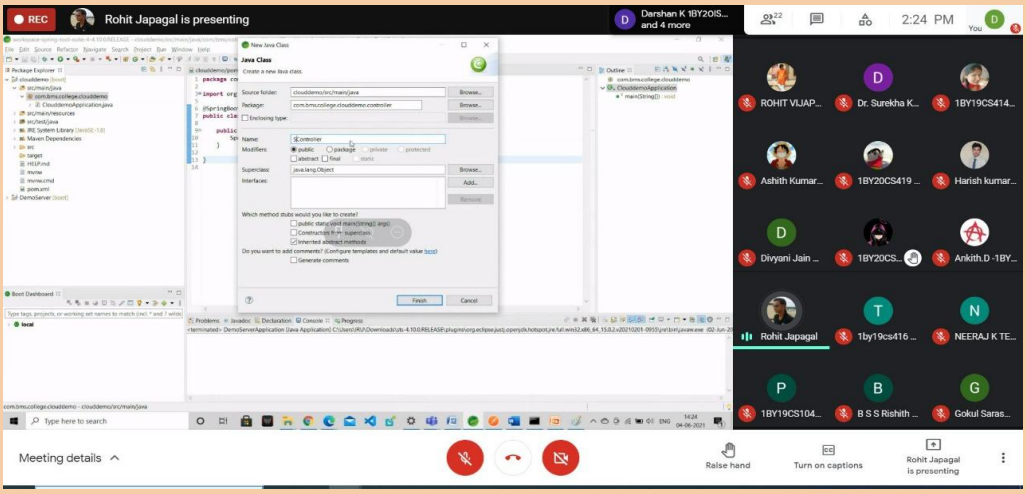
The entire day's session was handled by Mr.Rohit Japgal, Software Technologist, PHILIPS Innovative Campus. Mr.Japgal is currently working on Real Time Projects on IOT. In the morning session, he gave the introduction about the Cloud Technology and services of the cloud. He also familiarized the students with various cloud platforms used for IoT.



AFTERNOON SESSION: -

In afternoon session, Mr.Japgal explained how to make use of the cloud services in IoT.He introduced Heraku

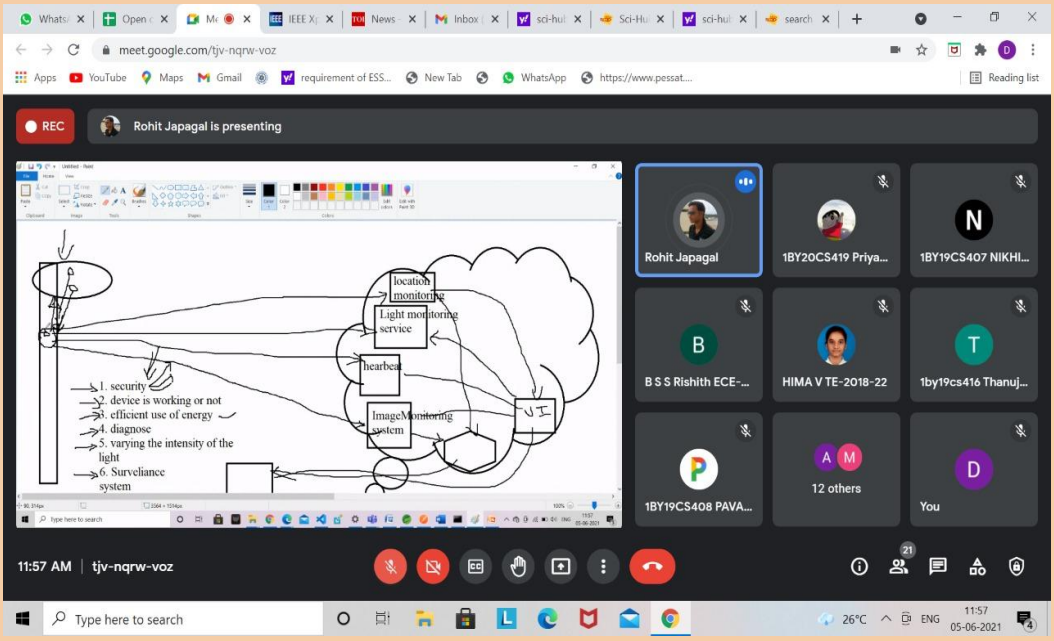
Cloud platform to the students. He also took one example of how the sensed information can be uploaded to cloud.



Day 5:

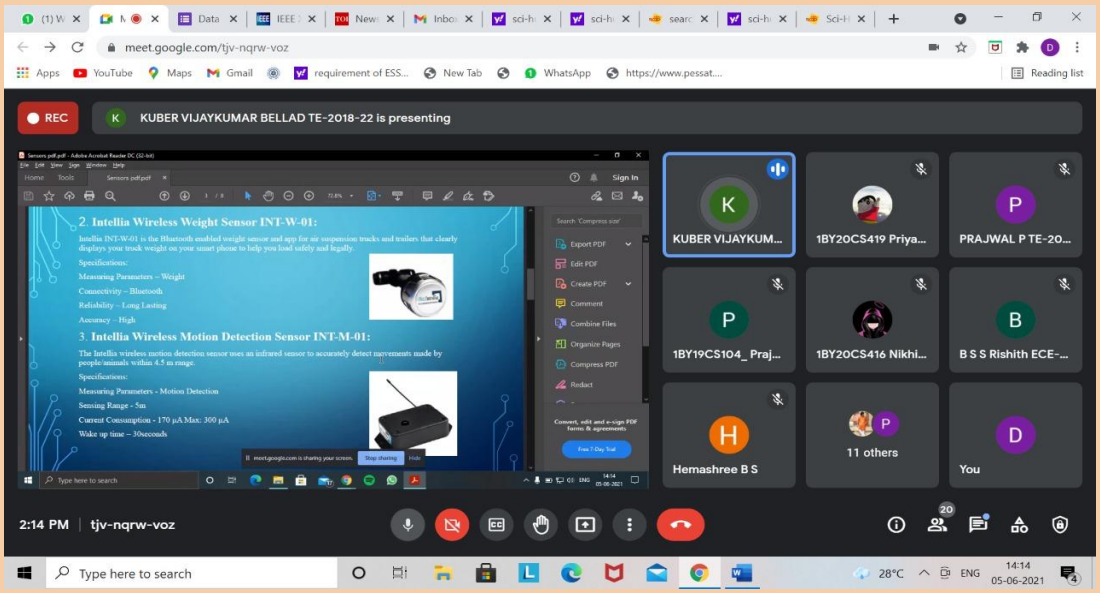
MORNING SESSION: -

The Morning session was handled by Mr.Rohit Japgal, Software Technologist, PHILIPS Innovative Campus. Mr.Japgal took some applications like automobile Industry and Home automation system. In detail, he demonstrated, how IoT sensor collected data can be processed in cloud.



AFTERNOON SESSION: -

In afternoon session, students made outstanding presentation on variety of sensors used in different applications, like automobile, health, industry and agricultural applications.



ANDROID APP Development

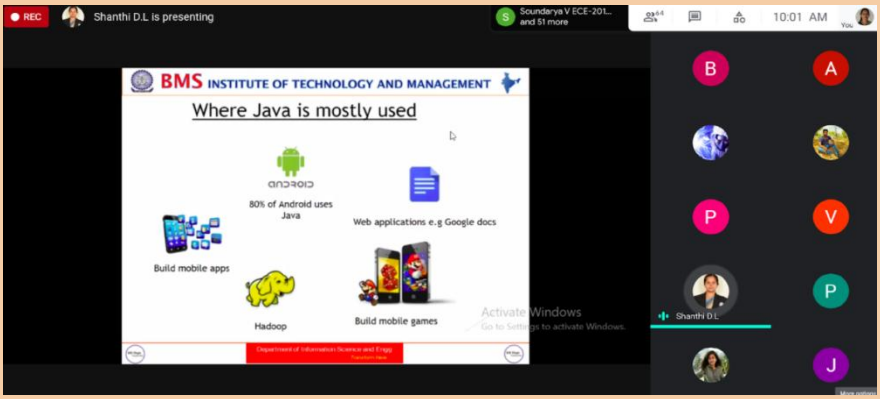
Day 1:

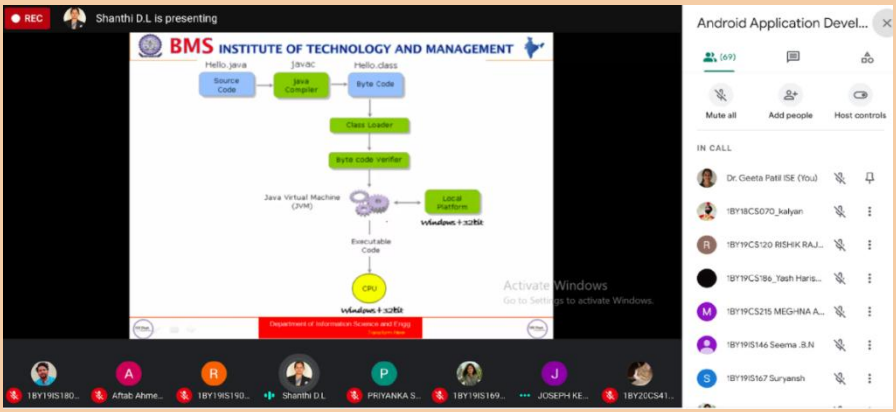
MORNING SESSION: -

At 9:30am HOD, and Open Course coordinators inaugurated all the five courses from department of ISE. HOD introduced each of the course with relevance and importance.

After that around 9:45am the session started by the Prof Shanthi D L, the topics highlighted the importance of the Android App development with respect to industry and business.

The need of JAVA programming language is highlighted for app development, based on that basics of Java was explained with code executed. Topics such as structures of Java program, variables, data types, operators, loops, conditional statements, strings, and classes and objects were explained with code execution using online GDB compiler. The session went up to 1:15PM.



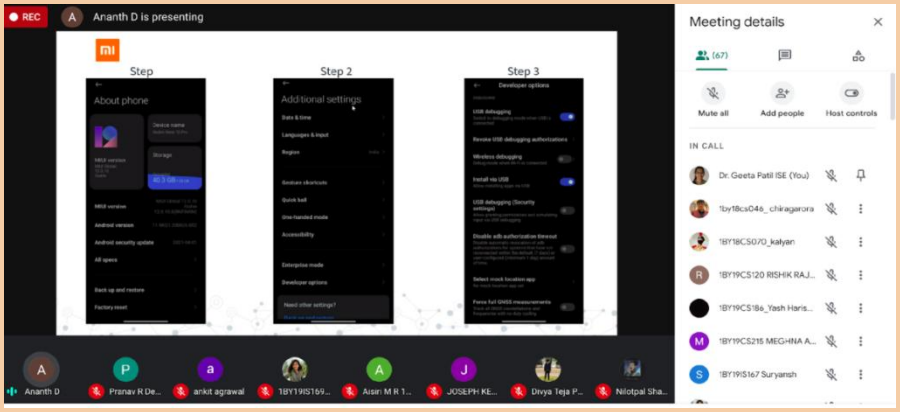


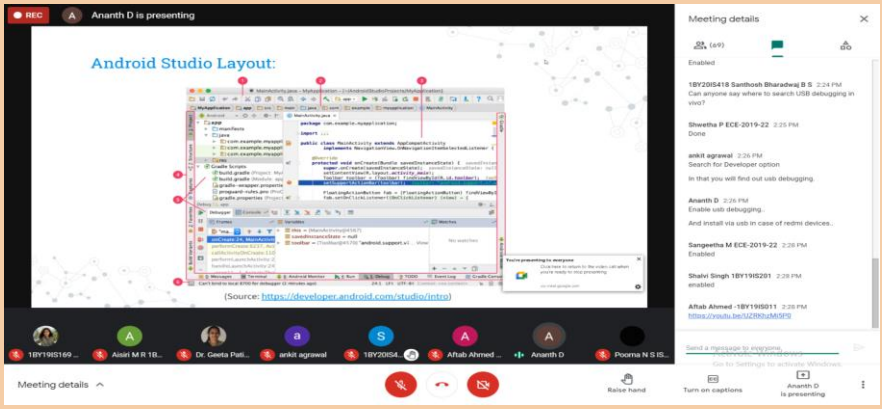
AFTERNOON SESSION: -

Afternoon session started at 2pm by Mr. Ananth D from 6th A section and Mr. Pranav from 6th B section. In this session the steps and process of Android studio installation was

done through hands-on practice. All the participants were asked to do the installation to their devices like Laptop, Mobiles and connectivity is shown. The first experiment Hello World demonstrated with real devices and the design layout also explained.

All the issues in installation of android was sorted for each students by the students coordinators.



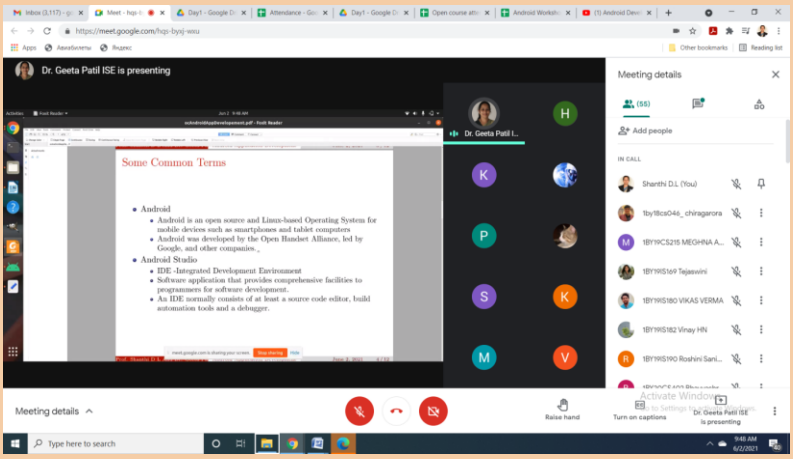


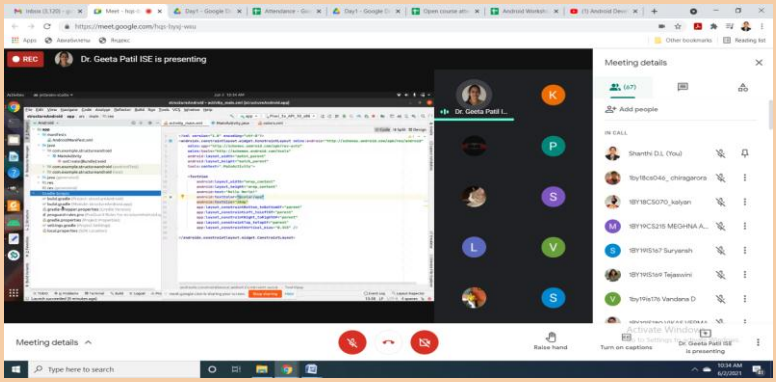
Day 2:

MORNING SESSION: -

At 9:30am the session started by Dr. Geeta Patil, explained regarding the common terminologies used in Android APP, SDK- the relevance of the SDK for implementation.

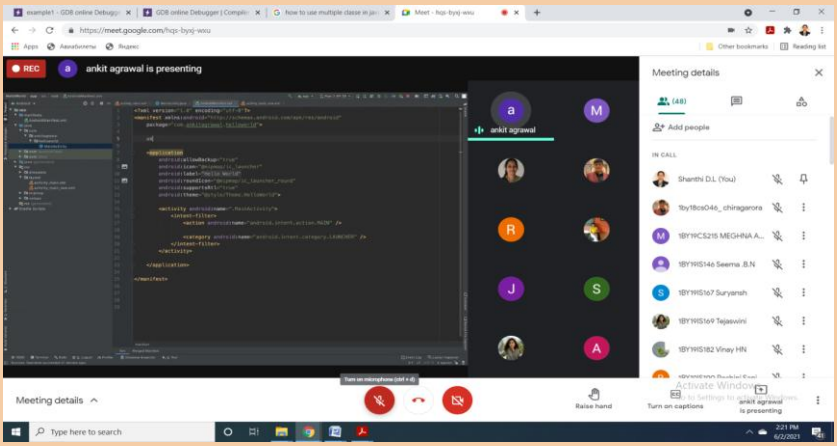
Also explained various components available in Android studio, showed various .xml files and .java files to be built for app development. Explain with an example the how the layouts and widgets are used during APP development. Given an activity students were asked to do the activity of building sample APP.

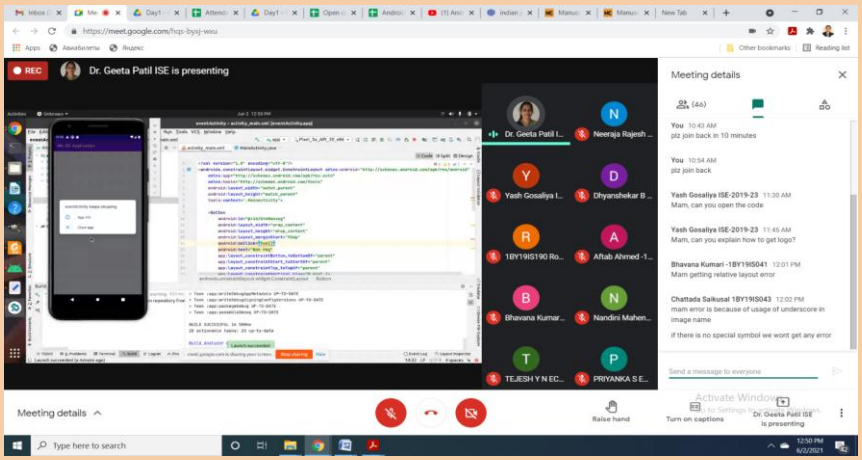




AFTERNOON SESSION: -

Afternoon session started at 1:45pm by Mr. Ankit Agrawal founder of Apps Nesst - Home for Software Development. In this session in depth knowledge of Android Application Structure was given. Required OOPS concepts were explained. Activity Life cycle was explained and demonstrated. Session ended with hands-on activity on developing Registration form. Students were asked to complete the assignment and upload in GCR. All the issues while building activity were addressed.

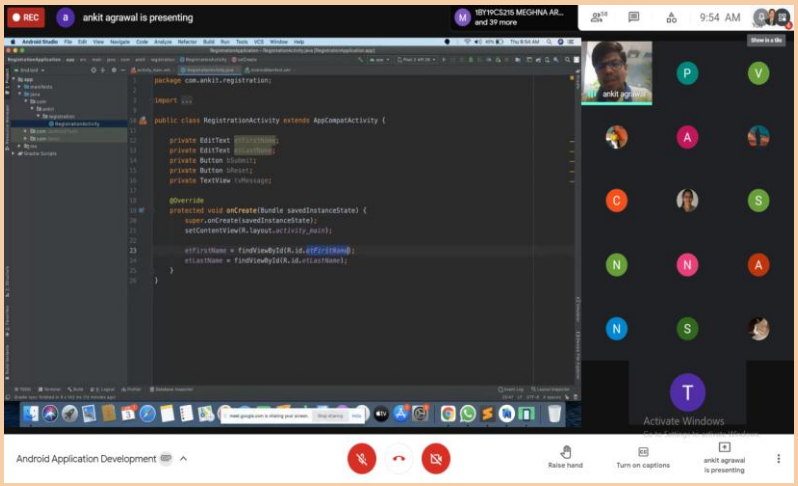


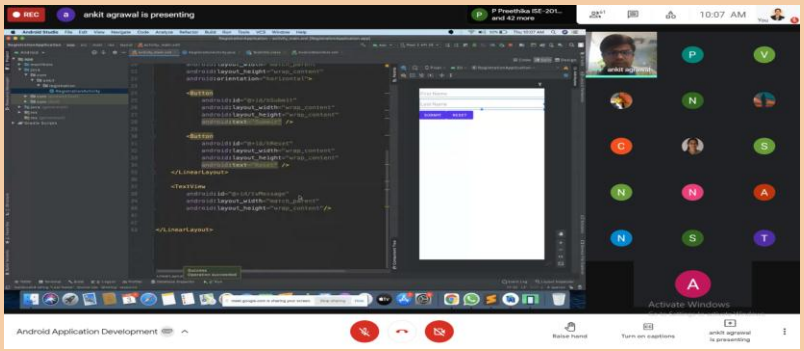


Day 3:

MORNING SESSION: -

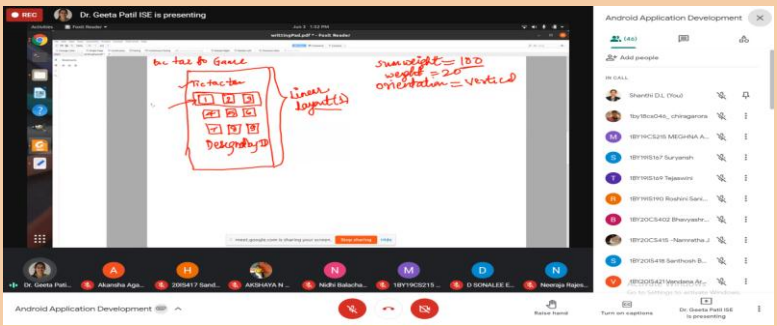
Session started at 9:30am by Mr. Ankit Agarwal, topics covered in this session include interfaces, abstract classes, resources, layout understanding and creating layout. Hands-on demo on all above topics is given along with detailed explanation. Also .xml coding was demonstrated with example code and execution. Registration application was created and showed to students, in parallel students were able to do the same. Student's doubts were handled very efficiently. Session ended with thanks giving to Mr. Ankit Agarwal and went up to 12:30pm.

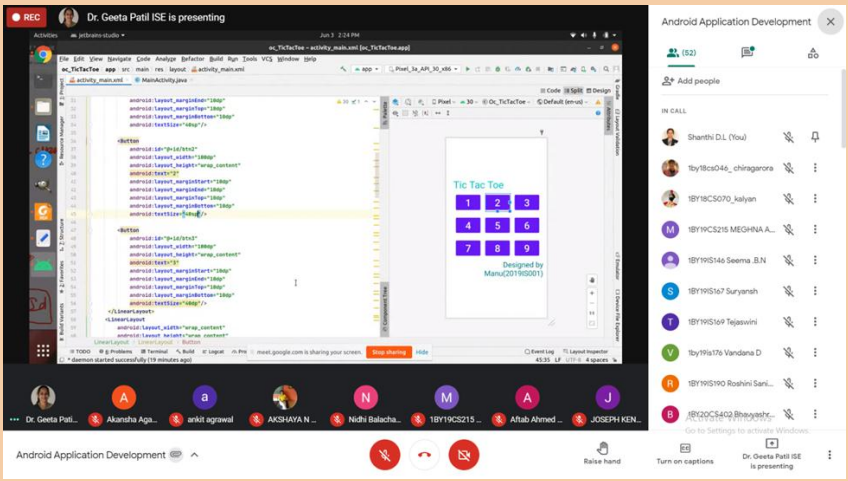




AFTERNOON SESSION: -

Afternoon session started at 1:30pm by Dr. Geeta Patil, Tic-Tac-Toe application was designed and demonstrated with practical context. All the code in xml, Java, and Android implementations were carried, simultaneously students were also did practiced and developed the application. Debugging and optimization of code part with respect improving the game playing strategy. Extra features like dialogue were added to the game application. Activity is ported to students to do and submit to GCR.

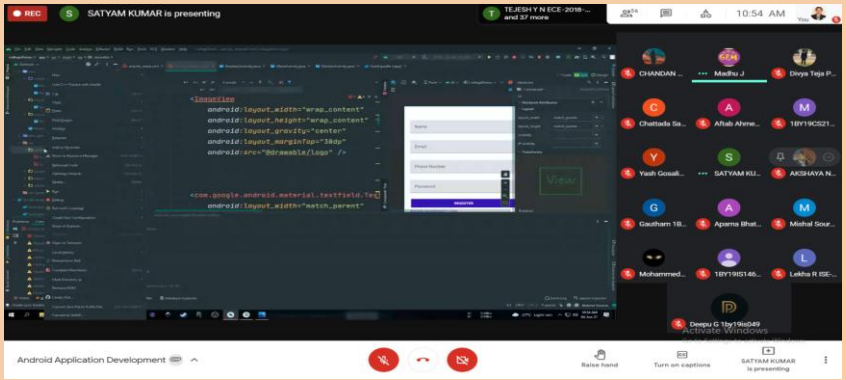


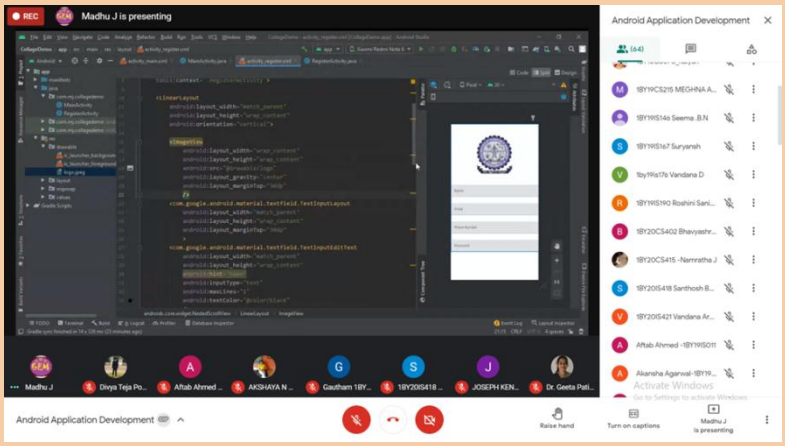


Day 4:

MORNING SESSION: -

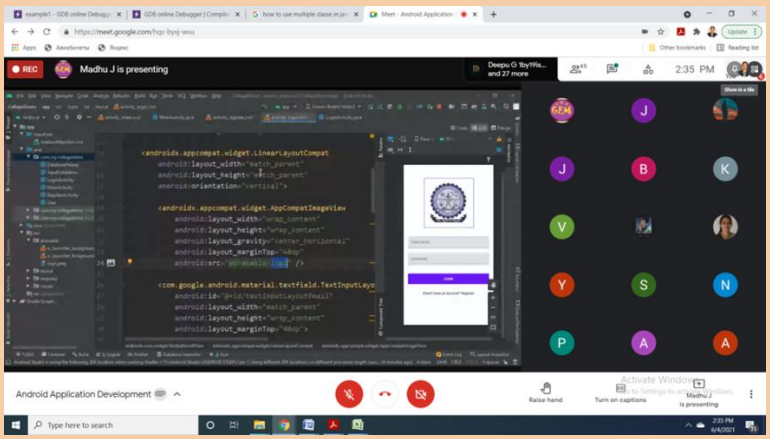
Session started at 9:30am by Mr. Madhu J, Software Engineer, Capgemini and Freelancer and he been associated by Mr. Kiran Kumar S, Android App Developer, parents Digital Advertisements Pvt. Ltd. In this session a complete Android App for college details is carried from beginning to end. All that required for the entire Application like layout design, forms, front activity and other are demonstrated. Students also coded the entire design along with the resource person. Forms were designed for college Application. Session break was given for lunch at 12:40pm.

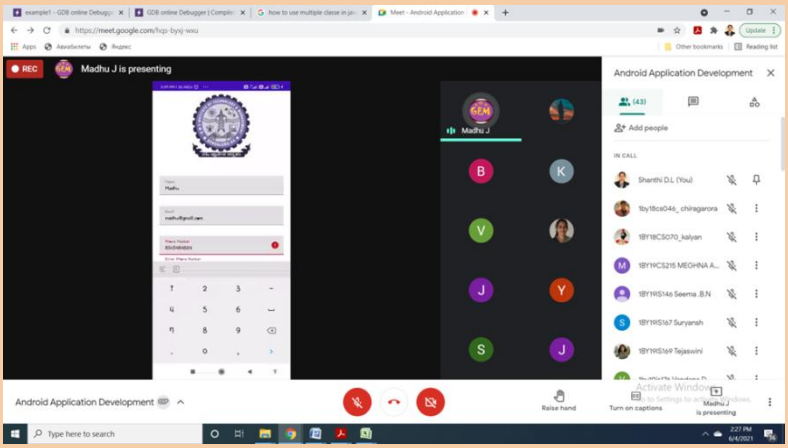




AFTERNOON SESSION: -

Afternoon session started at 1:45pm by Mr. Madhu J, DBMS connectivity to the designed android app was demonstrated and all the supporting design is done. SQL commands were used to create tables and other commands to access the data from the view of the app from registration, validating the forms also taken care with hands-on. All the design issues for students also addressed individually in order to cover the design from students part. Also demonstrated that how to publish the app through Google AppStore. The common errors that occur during developing the app for publishing the App. The session was concluded with an activity testing at 4:30 pm.



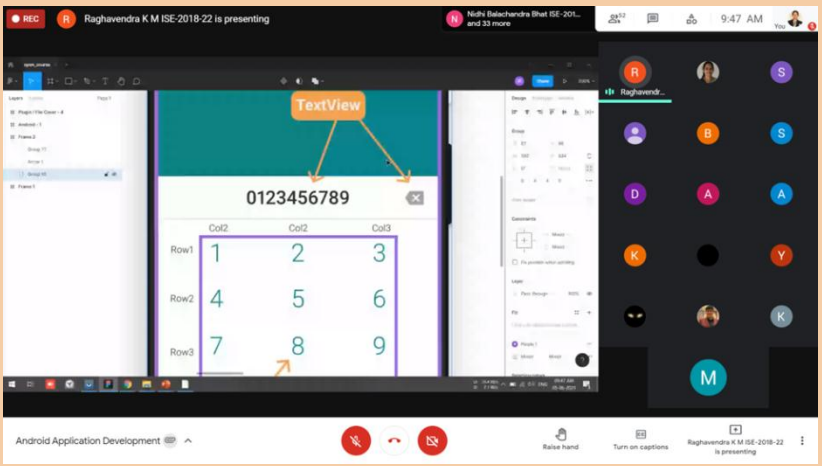


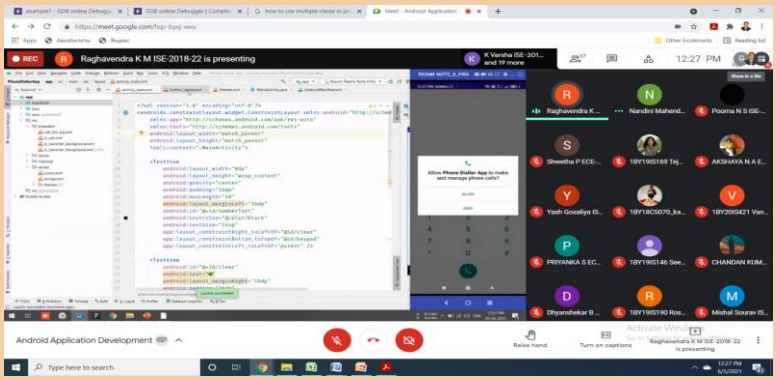
Day 5:

MORNING SESSION: -

Session started at 9:30am by Mr. Raghavendra K M, ISE 6th semester, B section.

The topic of today's' session was Phone Dialer APP development from problem statement to all logic building to designing. He explained about what are the requirements of the phone dialer app and what constrains need to be taken into consideration to develop. More important note given during the session was on the simple and effective design. The designs have to be made very clear and neat. If in the problem how to search in stackoverflow was shown. Participants parallel executed all the code and experimented on many design alternatives. Code was explained step by step and also eventListeners were explained. The session ended at 12:45PM.





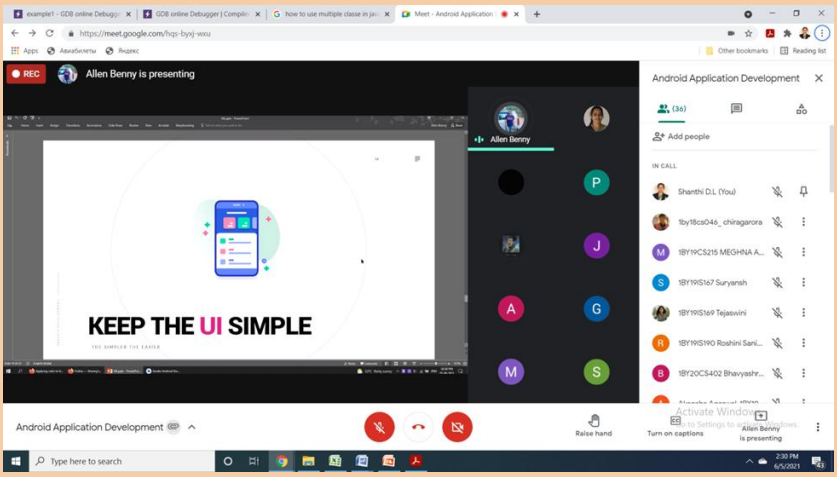
AFTERNOON SESSION: -

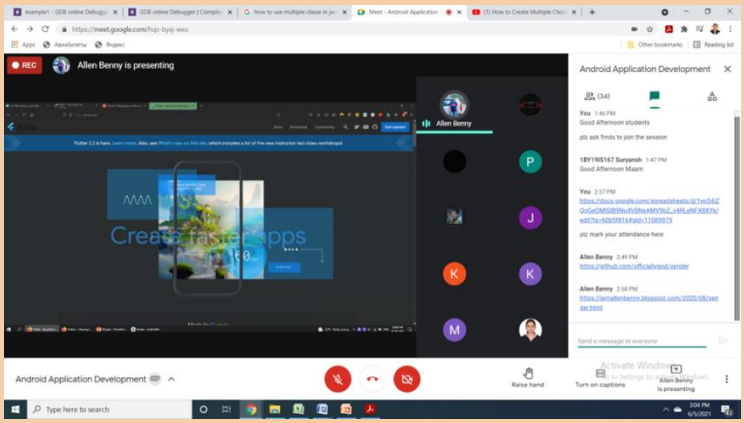
Afternoon session started at 1:45pm by Allen Benny, 6th semester, CSE dept. working as Android App developer few Apps and also working as freelancer gave a very good initiative points regarding Android App development. He explained about the importance of App development and key points to be remembered to develop good apps.

Material guidelines and dependencies and the document to be referred to know more about android documents. APP should be started with simple ideas and then can move onto develop complex developments. Every time an app is built the code need to be made as simple and clean as possible. Need to add comments in the code in order to understand the code better.

Also given information about Constraint Layout 2.0, along with linear layout importance is specified. Explained about Recycler view, responsiveness of the app is important to consider. Rendering of the items through the screen.

The session ended at 4:00pm with vote of thanks to all the resource persons, coordinators and participant.





Robotics with Artificial Intelligence

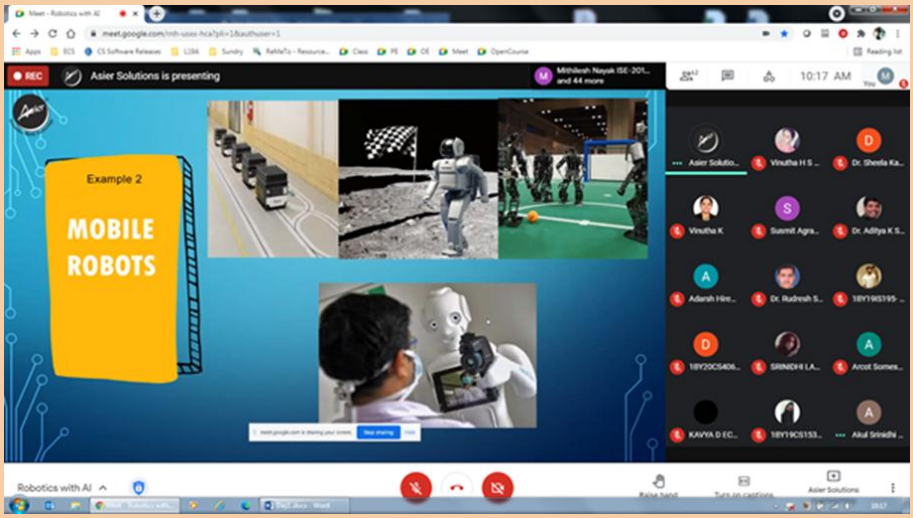
Day 1:

MORNING SESSION 1:

The session started with the introduction of external resource members, faculty and student coordinators. **Ms. Sunaya** started with the features of robotics and AI and their components along with a simple example of identifying sea creatures. Next, different ways to train a ML model such as supervised, unsupervised and reinforcement learning were discussed. Several AI and ML experiments such as cleverbot and quickdraw were demonstrated. Finally, the session ended with our own training model using Google teachable.

MORNING SESSION 2:

The session started with **Mr. Ketan** introducing various electrical components and their classification. Certain basic components such as resistors, potentiometers, capacitors, inductors and diodes were discussed in detail. The various types of transistors and their functions were also discussed. Next, relays were discussed along with their functions. Finally, the tinkercad simulation software was introduced and a basic circuit was simulated using the same.

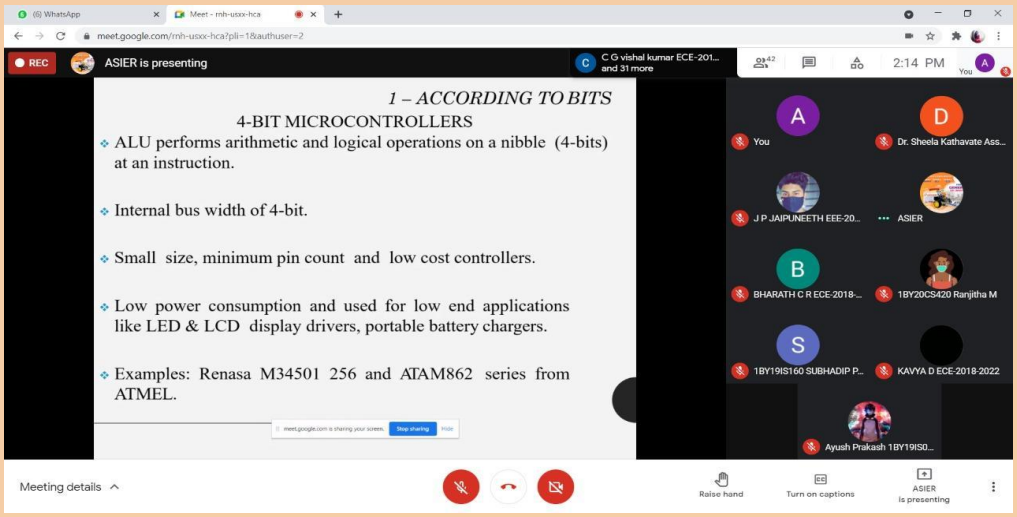


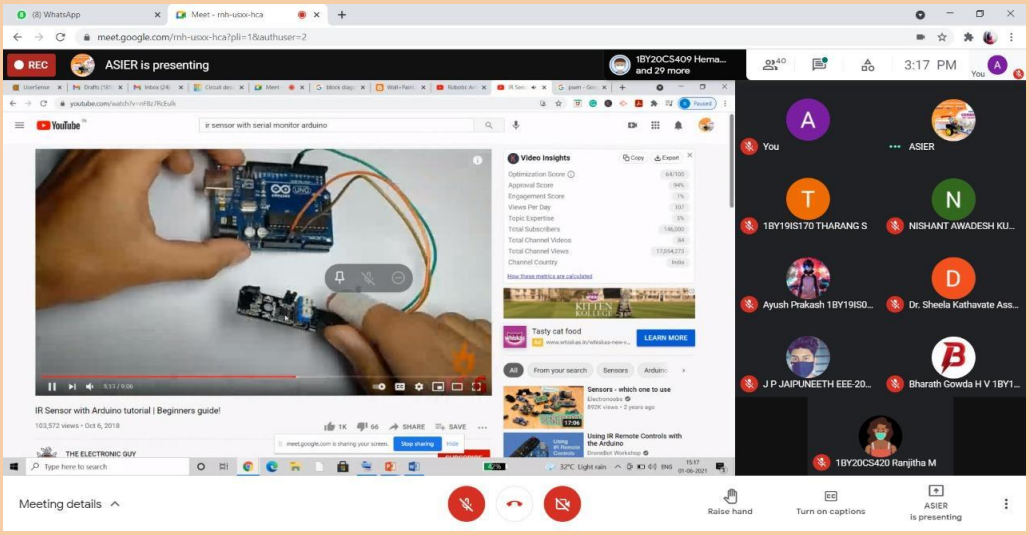
AFTERNOON SESSION 1: -

The session started by **Mr. Ketan** with the introduction and definition of microcontrollers along with a brief definition of different microcontrollers. 4 – bit, 8 – bit, 16 – bit and 32 – bit microcontrollers were addressed with examples. Arduino programming and architecture was discussed. Arduino PWM pins along with the various aspects of the Arduino board were discussed along with basic debugging and its features. Then the method of choosing the right microcontroller was also discussed. Finally, the interaction between Arduino and input/output devices were demonstrated.

AFTERNOON SESSION 2: -

Mr. Ketan gave a hands-on session on Arduino programming. The session started with a simple blinker program for Arduino using tinkercad simulation. The same was replicated on Arduino IDE and then implemented into an actual Arduino. Following this, analog inputs were demonstrated using a potentiometer. Finally, analog outputs were demonstrated using a servo as the output device. The students were made to execute the same on their own systems and made to understand the execution and the working.





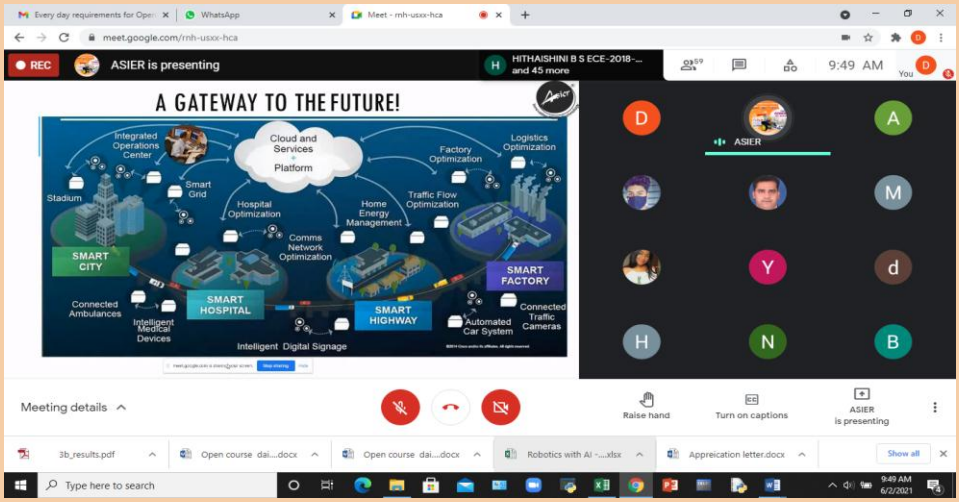
Day 2:

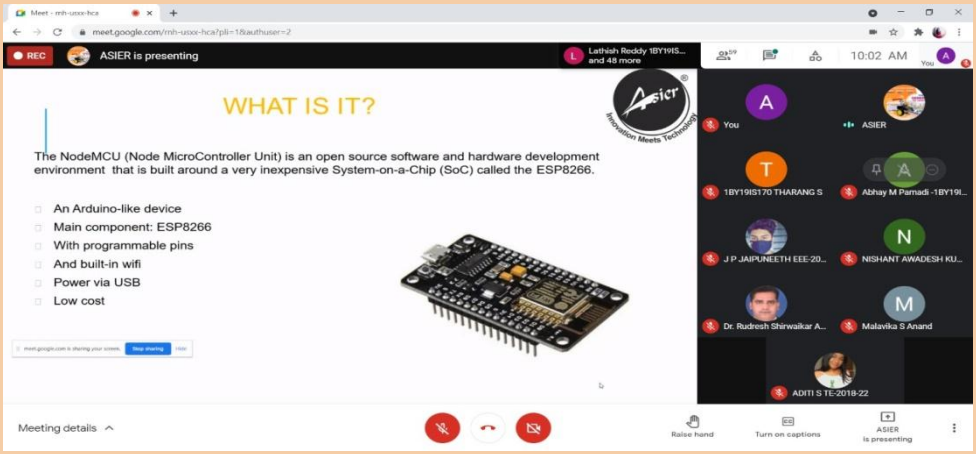
MORNING SESSION 1:

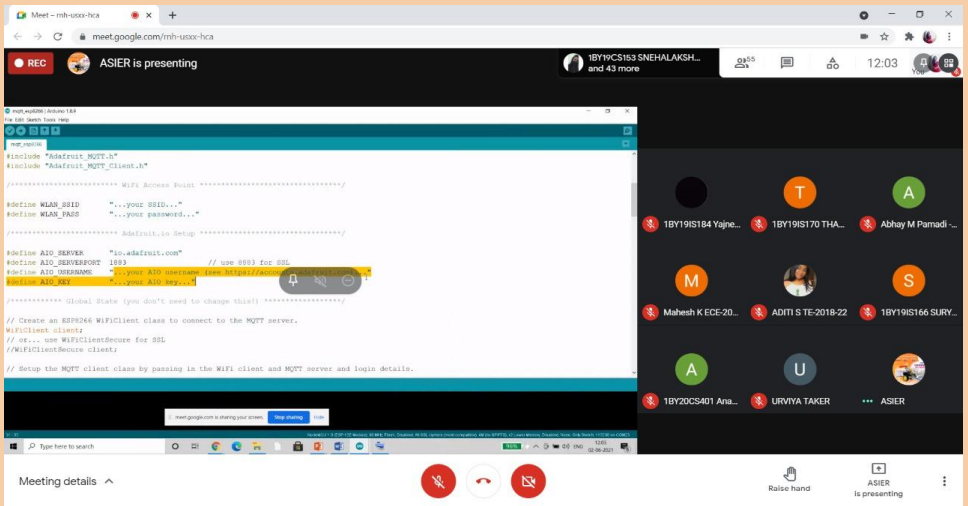
The session started with **Mr. Ketan from ASIER Solutions** introducing IoT, starting with what it was and its applications. NodeMcu, an open-source development kit that helps to create IoT prototypes was introduced. The pin details and configuration of NodeMcu like ESP8266 were discussed along with its specifications and pros and cons. Next, the Blynk App was introduced and its installation was discussed. Finally, a demonstration was showed using the Blynk application and the Arduino software. He ended the session by giving tips and tricks to use the platforms discussed in the session.

MORNING SESSION 2:

Mr. Ketan from ASIER Solutions continued the session by introducing MQTT, Adafruit IO and its applications. A hands-on session on LED automation was taken using the Adafruit IO cloud service. Steps to install the application and its connection to the Arduino software was demonstrated. The connection between the different software and platform was shown and how to code it was also demonstrated. The session concluded by showing a live example of how to control a LED light using Adafruit IO services.





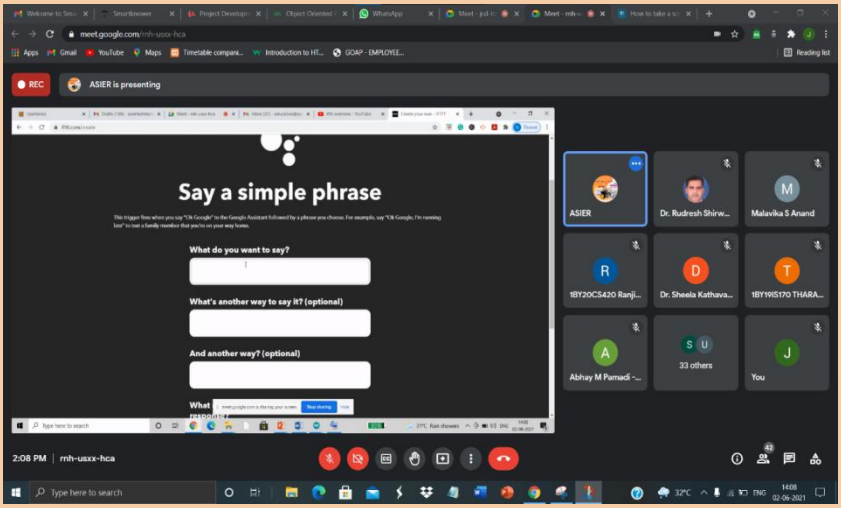


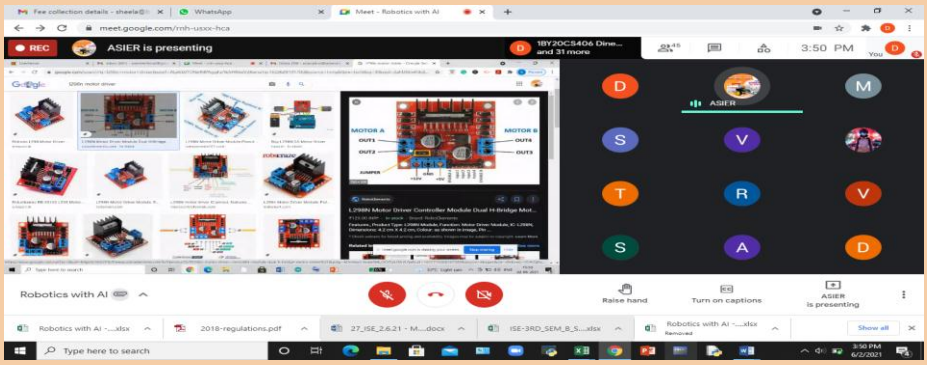
AFTERNOON SESSION 1: -

Mr. Ketan from ASIER Solutions started the hands-on session by introducing IFTTT service that connects to Google Assistant to give voice commands and by sending the data to and from the mobile using Adafruit IO. A demonstration was given on how to connect Adafruit IO to IFTTT. A student volunteer was chosen to demonstrate the process of connecting the software and how to set up the voice command to do the specific task of asking the Google Assistant to "Turn the light on" and to send the data "1" via IFTTT to Adafruit IO. The hardware components required for this model to work physically were also explained.

AFTERNOON SESSION 2: -

The hands-on session resumed with **Mr. Ketan from ASIER Solutions** discussing about IoT based Fire Fighting Robot. Their uses and advantages over a human-driven firetruck were discussed. The hardware components required to build this robot, like ESP8266 module - NodeMCU, L298N motor were discussed in detail. The circuit and the circuit connections were explained. Then, the connections to be made to connect the hardware to the Wi-Fi was discussed. The code required to run the robot was discussed in detail. The Android based application prototype was also shown and explained. The session ended with the video presentation and explanation of 'Thingspeak' a cloud service on IOT.





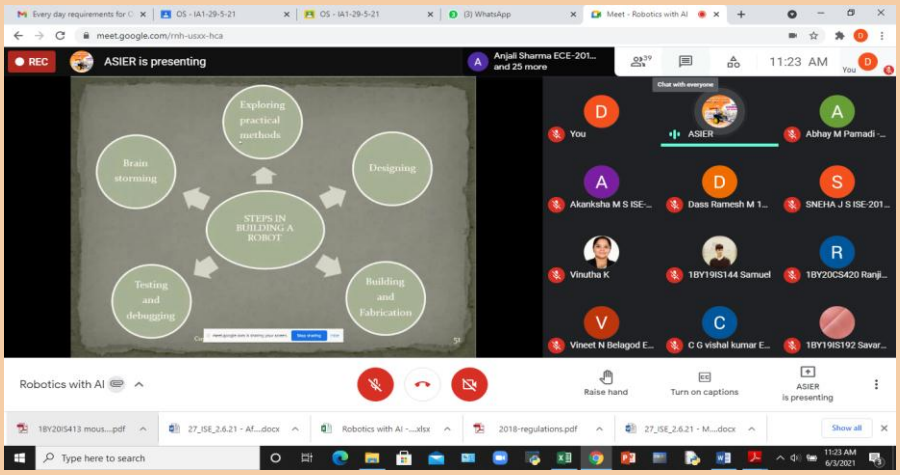
Day 3:

MORNING SESSION 1:

The session started with **Mr. Ketan from ASIER Solutions** giving a brief introduction to input and output devices. He discussed the different parts of building mobile robots. The various aspects of general robots were also discussed. The different types of motors along with the different situations where they are used were elaborated. The L298N IC motor driver was then discussed in order to connect motors to NodeMCU. Different types of voltage converters were also discussed along with their parts and functions. The H-bridge used in motor drivers were also discussed.

MORNING SESSION 2:

The session started with **Mr. Ketan from ASIER Solutions** providing a brief explanation on stepper motors and ROS (Robot Operating System). The features and applications of ROS were detailed. The uses of stepper motors and actuators were discussed in detail. Geared motors and servo motors were also discussed as motors with variable output. The use of Brushless DC motors in various places such as drones were explained. Then, the various sensors such as IR sensors, ultrasound sensor, LDR and the situations in which they can be used was taught. Next, voltage regulator ICs were explained to manage the voltage in robots. Finally, the different power sources available and selection of these power sources was discussed.

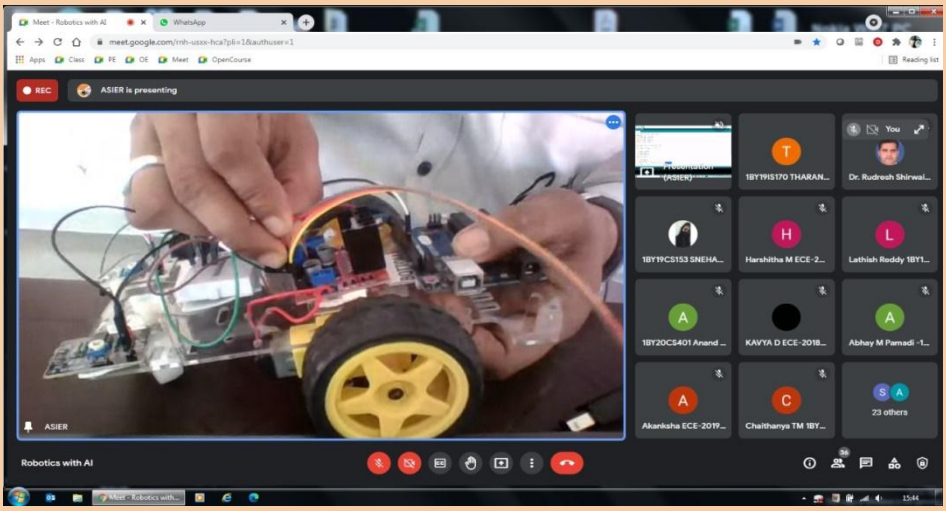


AFTERNOON SESSION 1: -

The session started with **Mr. Ketan from ASIER Solutions** giving the description and uses of LEDs. The basics and variety of Arduino boards along with choosing the right board and using the Arduino IDE was discussed. The more commonly used Arduino code and the working of the Arduino programming language was explained in detail. Next, a basic program to blink a light was developed. The session ended by developing code for a line follower robot using 2 IR sensors and 4 motors with the LM298 motor driver.

AFTERNOON SESSION 2: -

The session by **Mr. Ketan from ASIER Solutions** was about the combined use of hardware and software to create a Line Following Robot. This used a chassis, 2 motors and an IR sensor to determine the black line. Writing the code for the model using the Arduino IDE and then to upload it to the model was explained. Wire connections were done and the model was tested on a mat having a circular black line by Mr. Ketan in his lab. The model worked excellently and students were taught how to identify and correct certain errors which arise during execution.



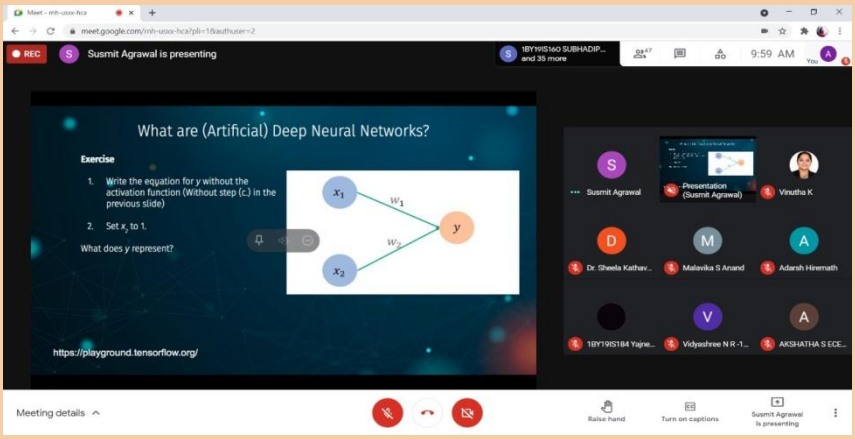
Day 4:

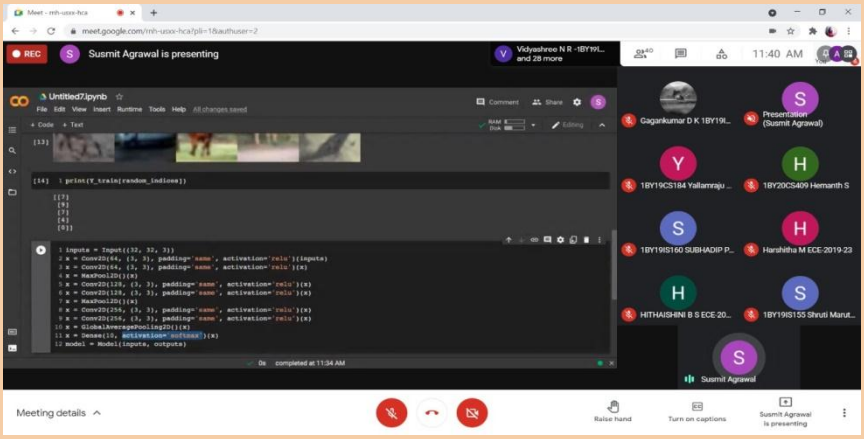
MORNING SESSION 1:

The session was taken by **Mr. Susmit Agrawal from IISc** about Computer Vision. The session started with the definition and aspects of computer vision. Concepts such as object identification, object detection and segmentation were discussed. Then applications of computer vision were discussed, which included features such as noise removal, super resolution, and random noise to image generation. The Neural Network along with Tensor Flow model for computer vision was explained. The Convolutional Neural Network (CNN) was introduced along with its working and its applications such as Google lens and self-driven cars.

MORNING SESSION 2:

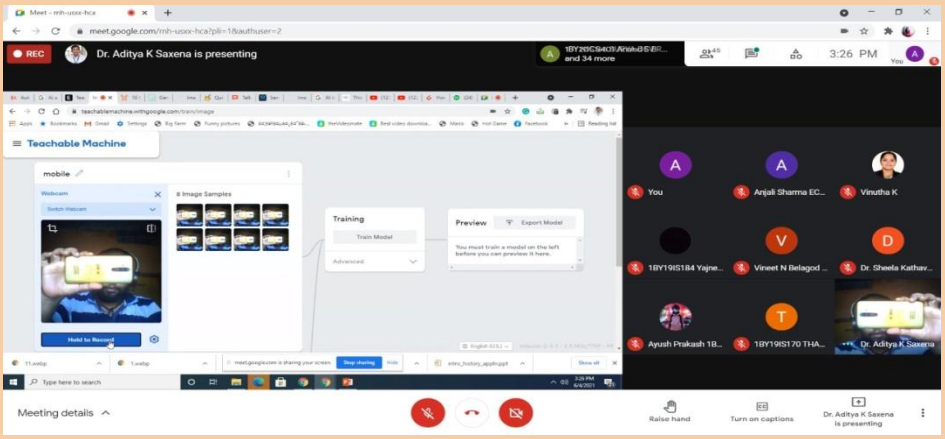
Mr. Susmit Agrawal continued the session with an in-depth explanation of Neural Networks and an introduction to Cost Functions. Next, the Tensor Flow model was demonstrated using the Tensor Flow and Keras libraries to set up a simple training model with an in-built data set. The model was summarized and the use of convolution layers were demonstrated using images as an example. The gradient of a Tensor Flow model was explained along with the loss function using probability distribution.

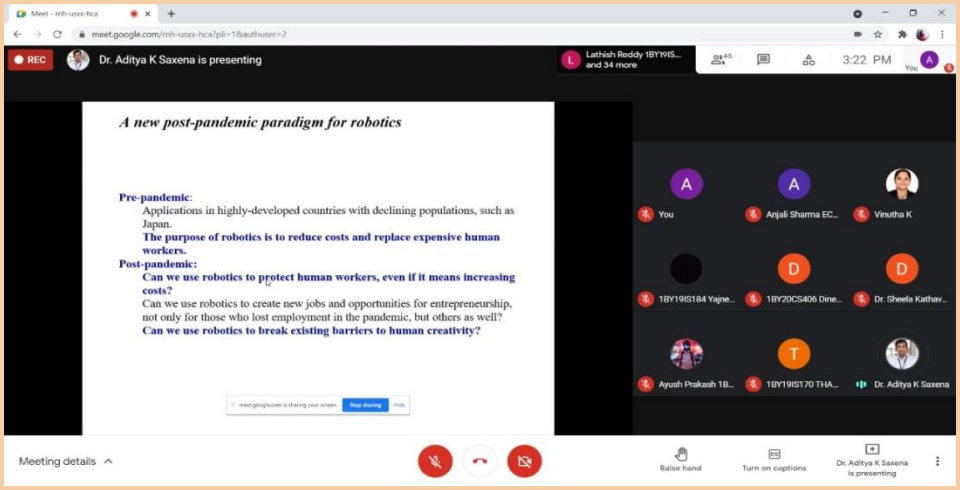




AFTERNOON SESSION: -

The session was taken by **Dr. Aditya K Saxena from Presidency University** about Artificial Intelligence and Robots. The session started with the definition of Artificial Intelligence and the various features of AI system. Next, the different agents of AI were discussed defining the different architectures for AI. The definition and applications of learning in machines and robots in specific was explained in detail. Implementation of AI in robotics was discussed which included various topics such as robot locomotion, problem solving scenarios, etc. The uses of robots in the current pandemic situation were discussed in detail. Finally, there was a demonstration on training the Machine Learning models with various categories and applications using various tools available on the Internet.





Day 5:

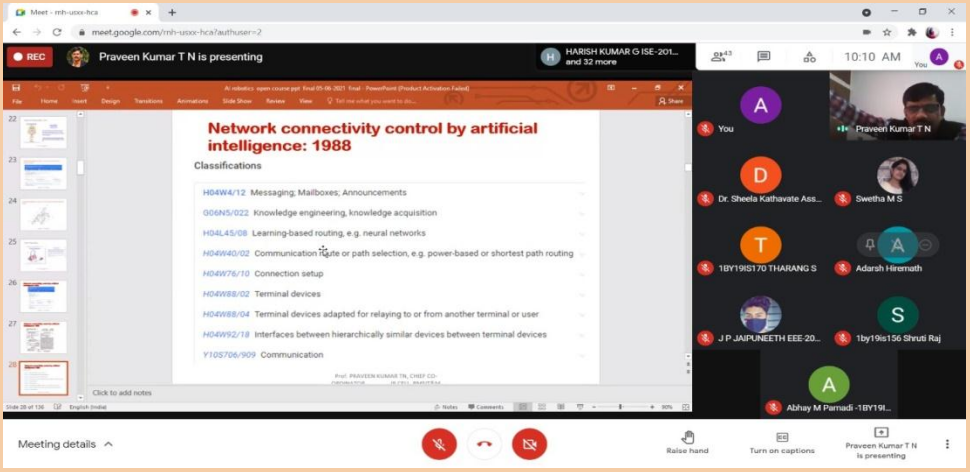
MORNING SESSION 1:

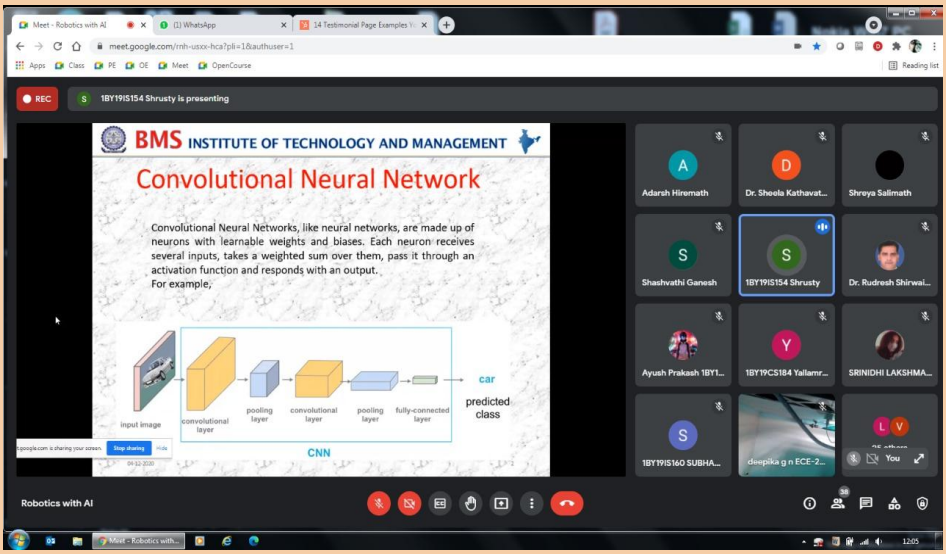
The session was conducted by **Mr. Praveen Kumar T N, Associate Profesoor, Dept. of Mech. Engineering and Chief Co-Ordinator, IP Cell, BMSIT&M**. The session started with the necessity of patents with examples including the first robot patented. Various patents along with the criteria to file a patent and examples of recent patents was discussed. The purpose of trademarks was also explained. Next, the greatest number of patents granted company-wise over the past few years was explained. The use of patent searches in google was also explained with an approximate of the number of patents under AI&ML. Finally, the patents filed by our university were discussed and respective faculty for filing them were congratulated.

MORNING SESSION 2:

The session started with a case study for machine learning by the **students of 4th semester, Dept. of ISE, BMSIT&M**. They explained the working and design of their project – Waste Segregation using CNN. The various libraries and the data set used in

this project were explained. The CNN model and tensor flow model were explained in this scenario. The model was run and the accuracy and loss after training was obtained. After the model was trained, it was tested with the test data set and the accuracy of the model was obtained. Further, the uses and advantages of the project was explained in detail.

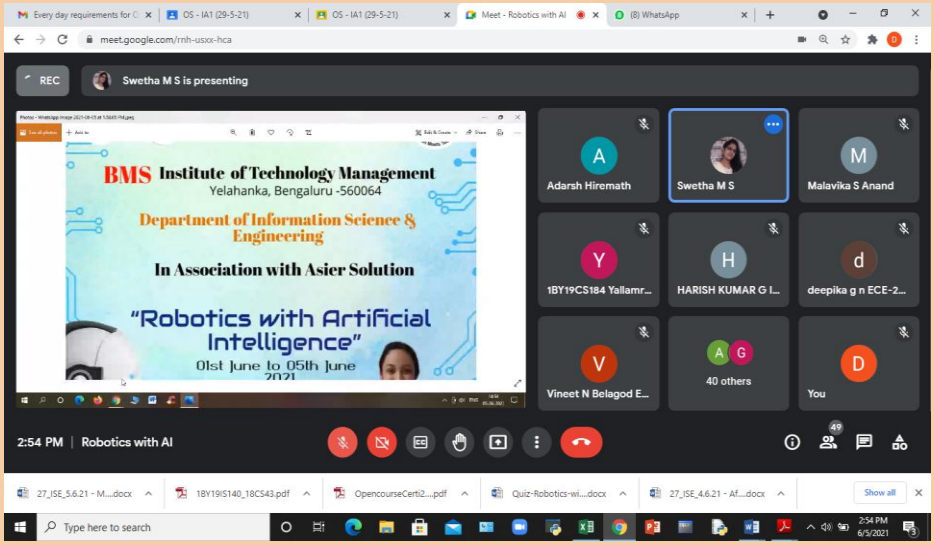


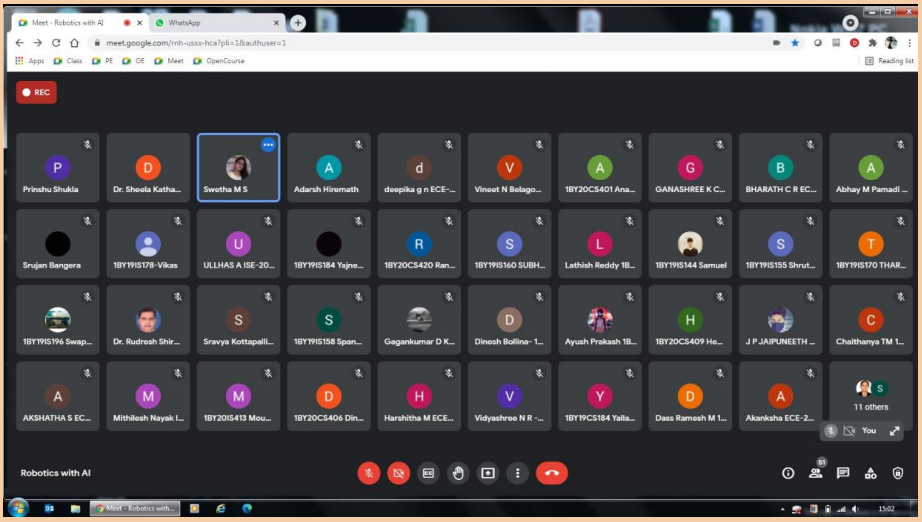


AFTERNOON SESSION: -

The Robotics with Artificial Intelligence Open Course came to an end in this session with **Prof. Swetha M S, Assistant Professor, Dept. of ISE** issuing the Vote of Thanks. She thanked the Principle, Dean Academics, The Open Course Coordinator, Faculty Coordinators, Student Volunteers, the Resource Persons and all the participants for taking part actively in the Open Course and gaining valuable knowledge. The participants were

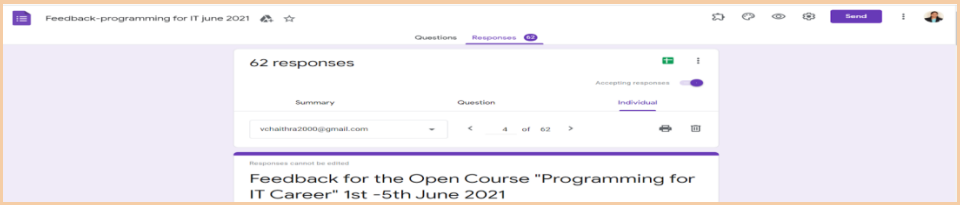
asked to take a quiz on the topics taught throughout the week in the Open Course and to provide feedback with the help of Google Form. **Dr. Sheela Kathavate, Associate Professor, Dept. of ISE and the open course coordinator** thanked all the external and internal resource persons. The certificates were given to the participants after the completion of the quiz and the feedback form.

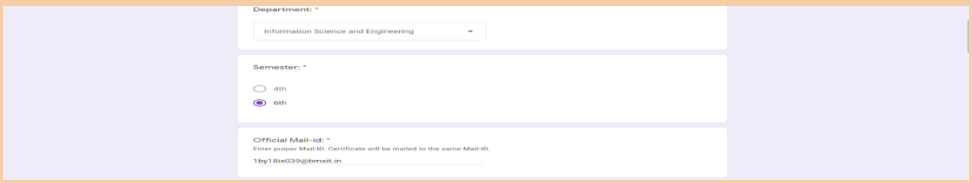


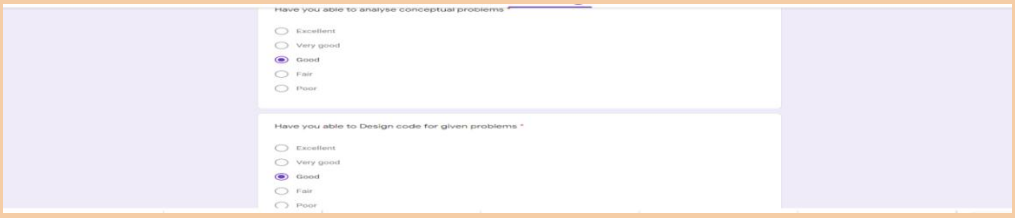


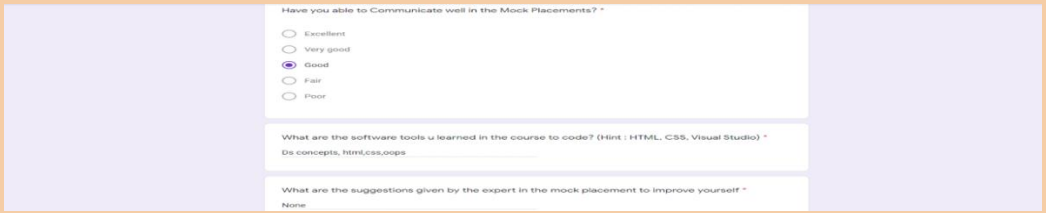
Feedback

Programming for IT Career

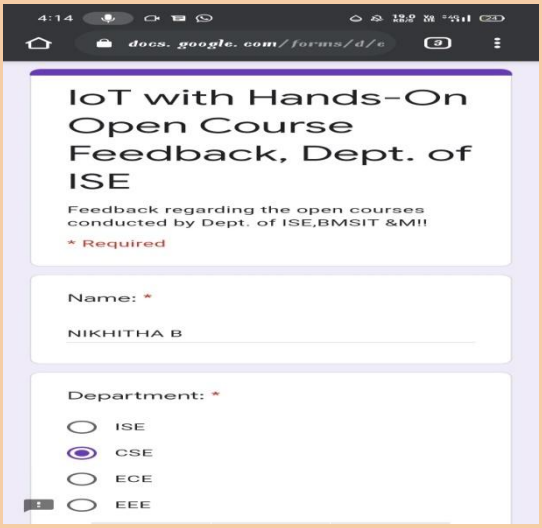


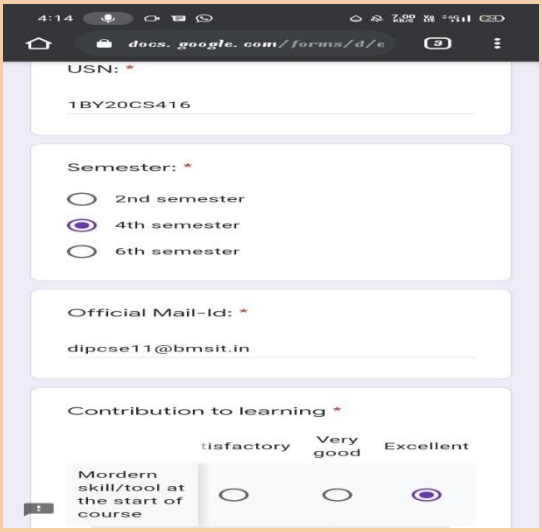


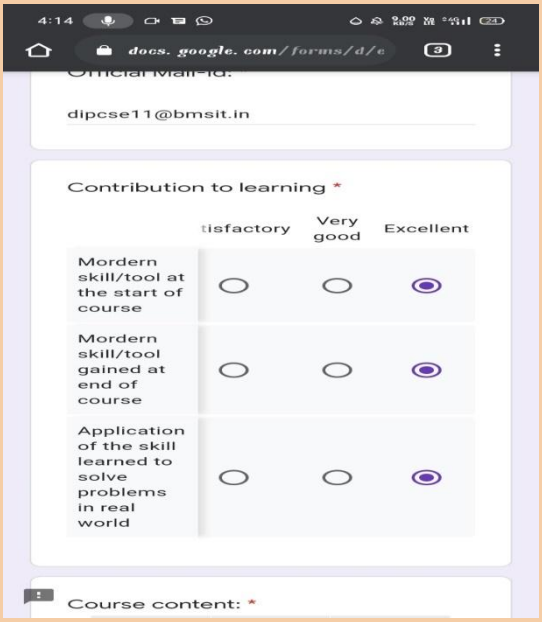


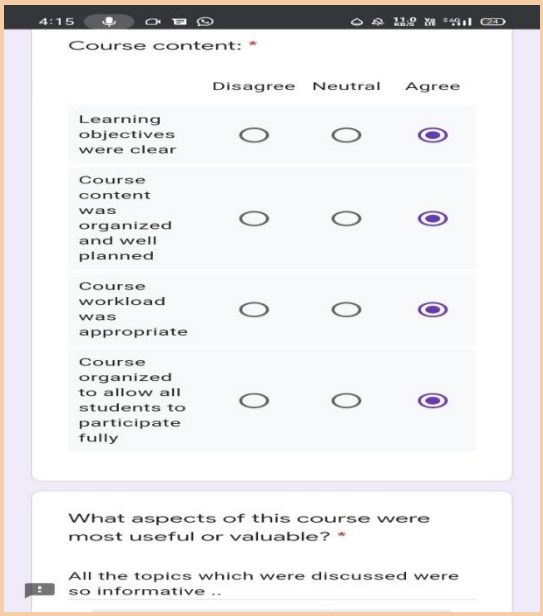


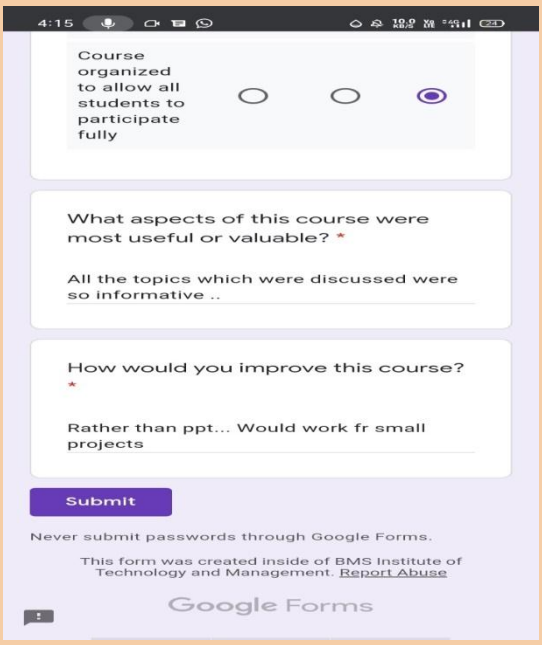
Internet of Things(IOT)

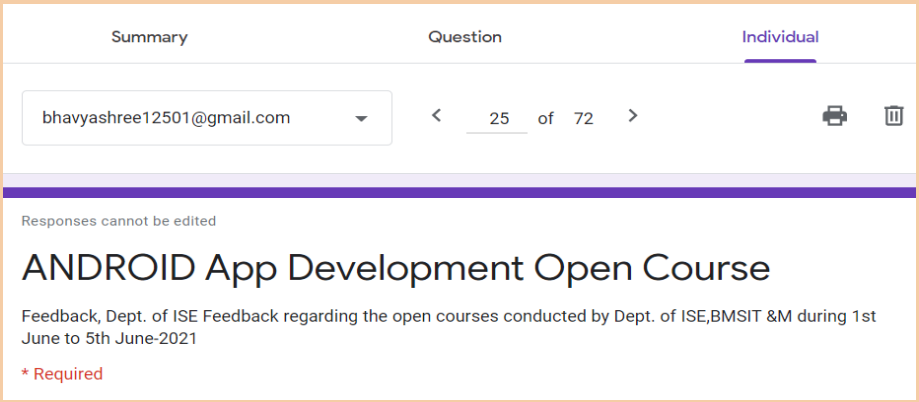











Summary Question Individual

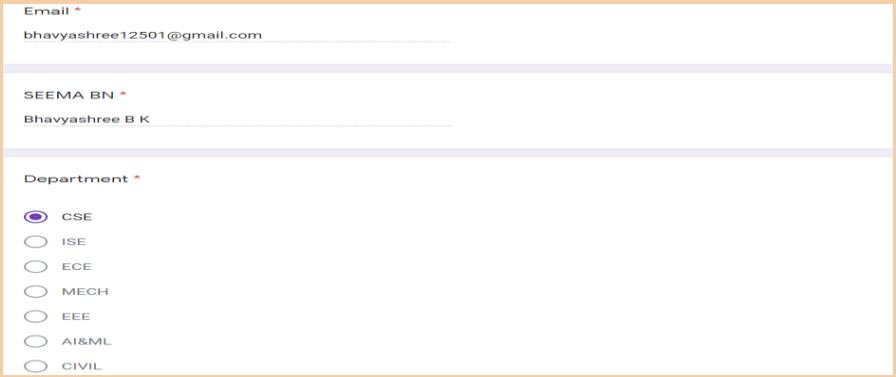
bhavyashree12501@gmail.com 25 of 72

Responses cannot be edited

ANDROID App Development Open Course

Feedback, Dept. of ISE Feedback regarding the open courses conducted by Dept. of ISE,BMSIT &M during 1st June to 5th June-2021

* Required


Email *

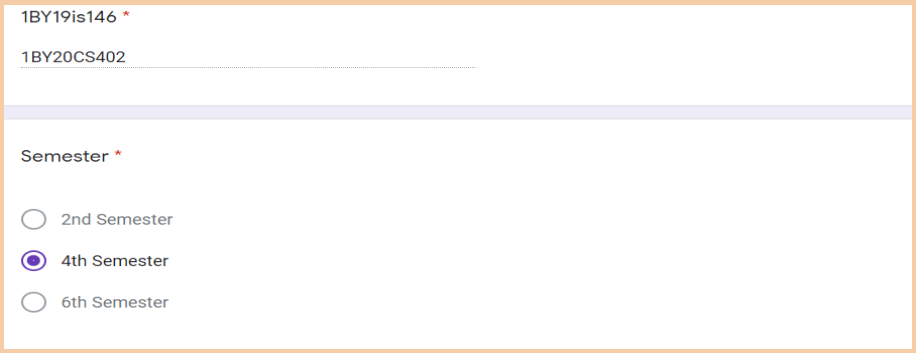
bhavyashree12501@gmail.com

SEEMA BN *

Bhavyashree B K

Department *

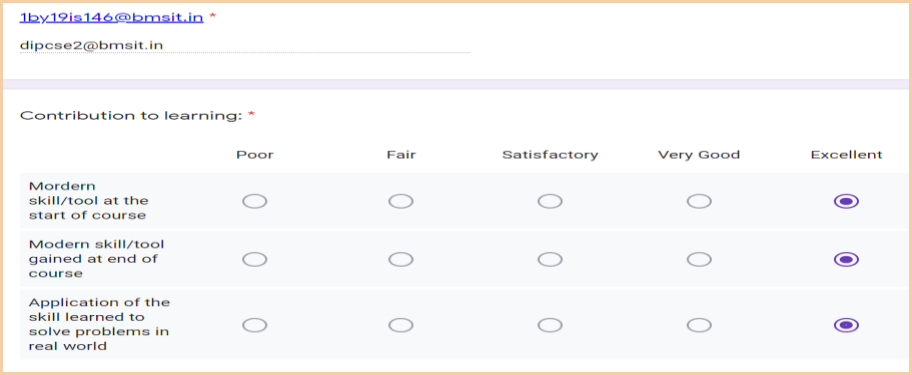
- (•) CSE
- ( ) ISE
- ( ) ECE
- ( ) MECH
- ( ) EEE
- ( ) AI&ML
- ( ) CIVIL


1BY19is146 *

1BY20CS402

Semester *

- ( ) 2nd Semester
- (•) 4th Semester
- ( ) 6th Semester


1by19is146@bmsit.in *

dipcse2@bmsit.in

Contribution to learning: *

	Poor	Fair	Satisfactory	Very Good	Excellent
Mordern skill/tool at the start of course	○	○	○	○	●
Modern skill/tool gained at end of course	○	○	○	○	●
Application of the skill learned to solve problems in real world	○	○	○	○	●

Course content: *

	Disagree	Neutral	Agree
Learning objectives were clear	○	○	◉
Course content was organized and well planned	○	○	◉
Course workload was appropriate	○	○	◉
Course organized to allow all students to participate fully	○	○	◉
Hands on session were easy to understand and was useful	○	○	◉
The content was presented in an organized manner	○	○	◉

Content sharing and evaluation process was motivating to learn more *

◉ YES

○ NO

Untitled Title

○ Option 1

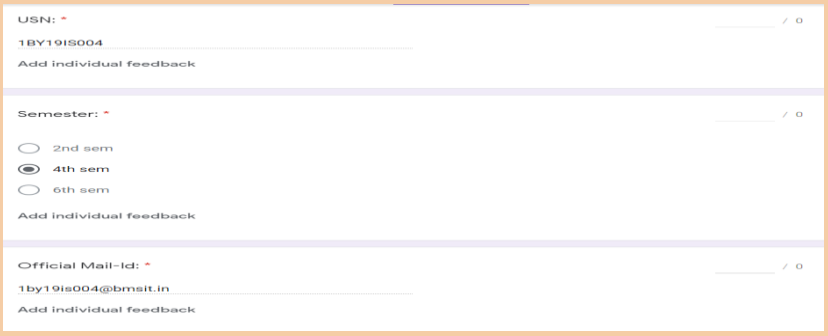
What aspects of this course were most useful or valuable? *

Very much useful,I learnt a lot

How would you improve this course? *

The session was very good,I'm interested to learn more on this ...


Name: *
/ 0
Abhay M Pamadi
Add individual feedback
Department: *
/ 0
CSE
ISE
ECE
EEE
ME
AI &ML
CIVIL
ETE
Add individual feedback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1BY19IS004
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Semester: *
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2nd sem
4th sem
6th sem
Add individual feedback
Official Mail-Id: *
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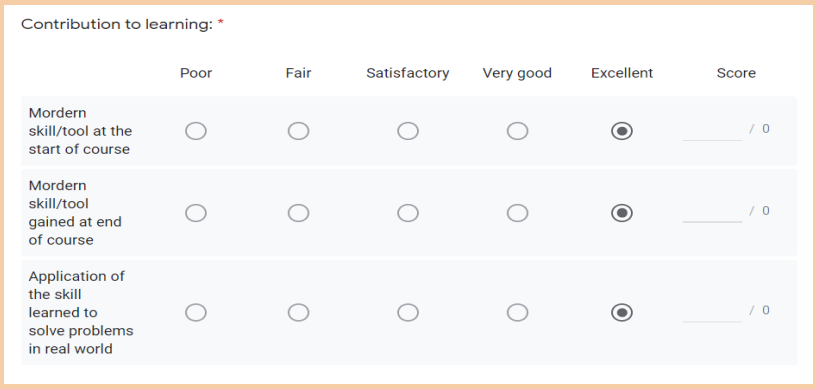
1by19is004@bmsit.in
Add individual feedback


Contribution to learning: *
Poor
Fair
Satisfactory
Very good
Excellent
Score
Mordern skill/tool at the start of course
/ 0
Mordern skill/tool gained at end of course
/ 0
Application of the skill learned to solve problems in real world
/ 0

Course content: *

	Disagree	Neutral	Agree	Score
Learning objectives were clear	○	○	◉	/ 0
Course content was organized and well planned	○	○	◉	/ 0
Course workload was appropriate	○	○	◉	/ 0
Course organized to allow all students to participate fully	○	○	◉	/ 0

What aspects of this course were most useful or valuable? * / 0

All the aspects of the course right from Arduino and microcontrollers to machine learning and AI was very well explained.

Add individual feedback

How would you improve this course? * / 0

None

Add individual feedback

PROGRAMME OUTCOMES (PO'S)

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 (PSO'S)

PSO-1: Apply the knowledge of information technology to develop software solutions.

PSO-2: Design and Develop hardware systems, manage and monitor resources in the product life cycle.


@bryanMMathers
Learning first
START
Learning on your terms
Learning with relevance
YOU ARE HERE
Learning to share
cc
OpenLearn
help yourself :)
FREE
Learning for free
Learning at your convenience
CERTIFICATE
OFFICIALLY BRILLIANT
GO
Learning now
Learning with meaning
Thought: The Open University