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MithBunder Road, Near Hume Pipe, Kopri, Thane (E)-400603

Department of Electronics and Telecommunication

A.Y. 2021-22

Sr.No.	Name of faculty	Semester	Class	Subject	Methodology used
1	Ms. Paurnima Vadak	IV	S.E. EXTC	Principles of communication Engineering	Inquiry based learning
2	Ms. Shubhangi Verulkar	IV	S.E. EXTC	Microcontroller	Screen casting and mind mapping
3	Mr.Rahul Naware	IV	S.E. EXTC	LIC	Screen casting
4	Christina Bage	IV	S.E. EXTC	SS	Experiment based Learning
5	Christina Bage	V	B.E.EXTC	DTSP	Future Aspect of DSP
6	Ms.Aarti Bakshi	V	T.E.EXTC	Data Structure and Algorithm	Power Point Presentation
7	Ms.Aarti Bakshi	V	T.E.EXTC	Digital Communication	Case Study
8	Ms. Shubhangi Verulkar	VI	T.E. EXTC	Electromagnetics and antenna	Poster making
9	Ms.Aarti Bakshi	VI	T.E.EXTC	VI	Neural Network and Fuzzy Logic
10	Mrs. Anupama Chaurasia	VII	B.E.EXTC	Microwave Engineering	Video making, QUIZ making
11	Ms. Shubhangi Verulkar	VII	B.E.EXTC	Mobile communication system	Screen casting and video making
12	Dr. Baban U. Rindhe	VII	B.E.EXTC	Optical communication	Screen casting and video making
13	Ms.Sowmya kini	VII	B.E.EXTC	Big data analytics	Self mind mapping

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					activity
14	Ms. Riya Pal	VII	B.E.EXTC	**NMT**	Screen Casting or Video making
15	Mrs. Anupama Chaurasia	VIII	B.E. EXTC	RF Design	Industrial Visit at EMI EMC Division Kharghar, Navi Mumbai
16	Dr. Baban U. Rindhe	VIII	B.E.EXTC	Wireless Networks	Screen Casting or Video making,

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Name of Faculty: Paurnima Vadak

Subject: Principles of Communication Engineering

Class: S.E.EXTC SEM: IV

Methodology followed: Google classroom, PPT, Written Notes, Classroom teaching

Difficulty faced: Students used to get the things explained in the classroom and also the notes directly for preparation. Students were facing difficulty in answering the high blooms level questions as their analyzing skills or finding the solution for the problem on their own were not addressed much.

New method identified: Inquiry based Learning

Activity report:

Inquiry based learning is basically a form of active learning and more of students engagement and participation. In traditional teaching learning the teacher teaches and provides whatever knowledge they have, however in this method the teacher gives a topic, a problem statement or something like that on which the student has to do the research or find the solution on his own or even with the help of teacher/ facilitator. The inquiry-based instruction is principally very closely related to the development and practice of thinking and problem solving skills.

For the PCE subject this concept of Inquiry based learning was applied with a small modification. The topic for inquiry and hence learning was allotted to a group instead of an individual. Students were asked to use find out the information related to given topic through at least three different information gathering tools from the following:

1. Research Papers
2. Research articles/Technical articles/ Technical Magazine
3. Reference books
4. Internet
5. Any other

After gathering the information the group was asked to undertake detailed discussion on the topic within the group, to note the points of discussion and to prepare a report on the same.

Outcome: This activity improved the student's engagement in the learning process as they were actively involved in learning rather than getting everything ready. As it was a group activity it made the group members to work differently on the same topic and have a discussion on it to reach to a conclusion thus improving team building. After the activity students were asked to prepare the report or a video for the discussion. This contributed a bit to the communication skills of the students

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Name of Faculty: Shubhangi Mangesh Verulkar

Sub: **Microcontroller**

Class: S.E.EXTC SEM:IV

Methodology followed: Google Meet,Google classroom, ppt and classroom teaching Offline

Difficulty faced: Students faced difficulty sometimes with internet issues, presentation of models.

New method identified : Screen Casting or Video making

Activity report: Screencasts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Screencasts enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of screen casting is that **the viewer can watch the screencast at a time when it's best for them** because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions.

Students can use Screen casting to explain what they know in their own words. The students can record a video on explaining the steps of difficult numerical or summarizing a concept.

There are many ways we can use screencasting in our teaching.

- Answer a question
- Record a lecture
- Demo how to use an application

SAMPLE VIDEO LINKS:
Link 1:
https://drive.google.com/drive/folders/1S-FZkydqmxYvVwpOsyrSAzw-Q5luJcq5?usp=sharing

Outcome: This video can be uploaded on youtube or on drive links or on website so that other students can watch it any time and learn the concept. In this subject students made video on presentation and demonstration for mini-projection of MCA .

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter learn from one another. This is best option for peer-to-peer learning.

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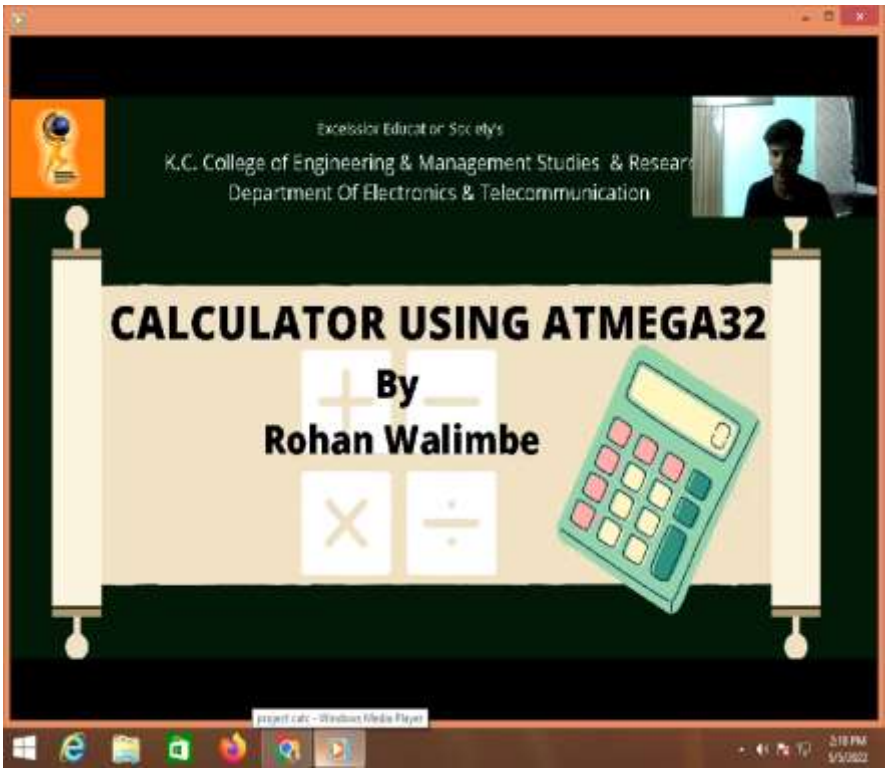

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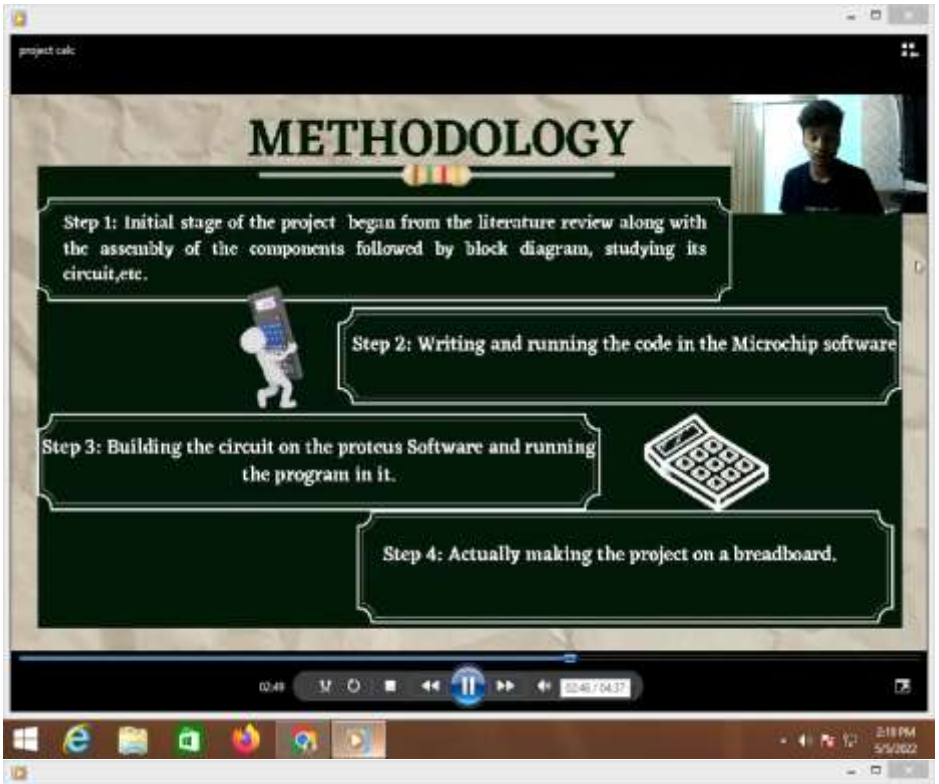

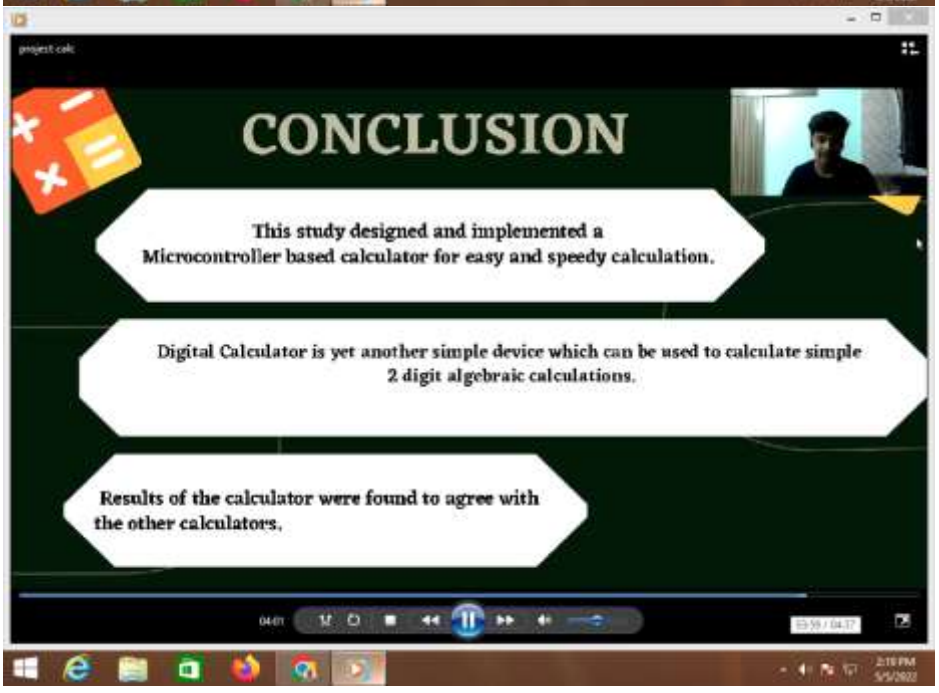

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Department of Electronics and Telecommunication

Name of Faculty: Rahul Naware

Sub: **LIC**

Class: S.E.EXTC SEM:IV

Methodology followed: Google Meet, Google classroom, ppt and classroom teaching Offline

Difficulty faced: Student faced difficulty sometimes with internet issues, presentation of models.

New method identified: Screen Casting or Video making

Activity report: Screen casts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Screen casts enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of screen casting is that **the viewer can watch the screen cast at a time when it's best for them** because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions.

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There are many ways we can use screen casting in our teaching.

- Answer a question
- Record a lecture
- Demo how to use an application

SAMPLE VIDEO LINKS:
Link 1: https://www.youtube.com/watch?v=i0SNb__dkYI

Outcome: This video is uploaded on you tube so students can watch it any time and learn the concept.

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter learning from one another. This is best option for peer-to-peer learning.

Innovative Part

IC 555 as astable multivibrator with 50% duty cycle with output taken across sinking load & sourcing load is a circuit that can drive two loads (for eg. LED) alternately is a Single Pole Double Throw (SPDT) switching

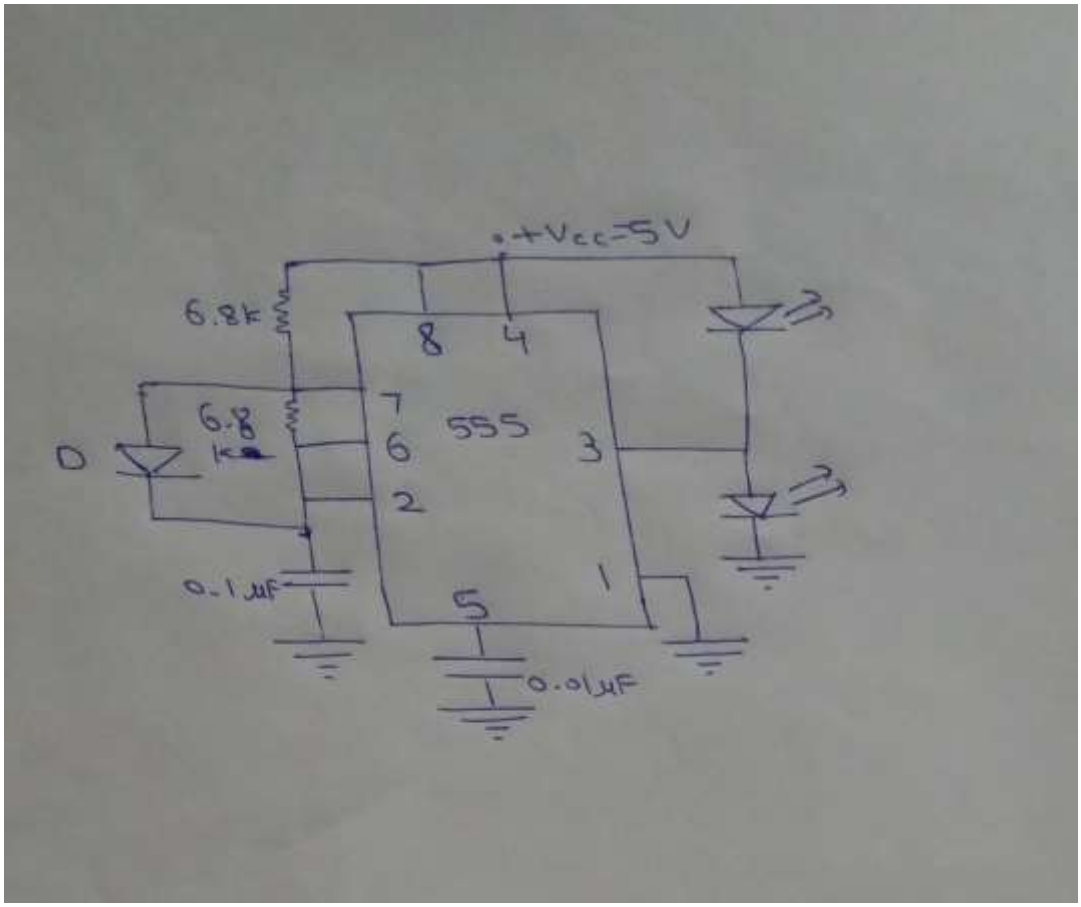
circuit. With this circuit two loads can be driven which is the advantage over astable multivibrator using BJT that requires more components & using opamp not possible in a perfect manner as an ideal SPDT switch.

Advantage:- Ideal SPDT switch can be realised using this circuit with 200mA current sourcing & sinking capability .

Disadvantage:- Current carrying capacity of output loads is limited up to 200mA only .

Innovative part is realization of SPDT switch using IC 555 as Astable multivibrator with 50% duty cycle.

Circuit diagram



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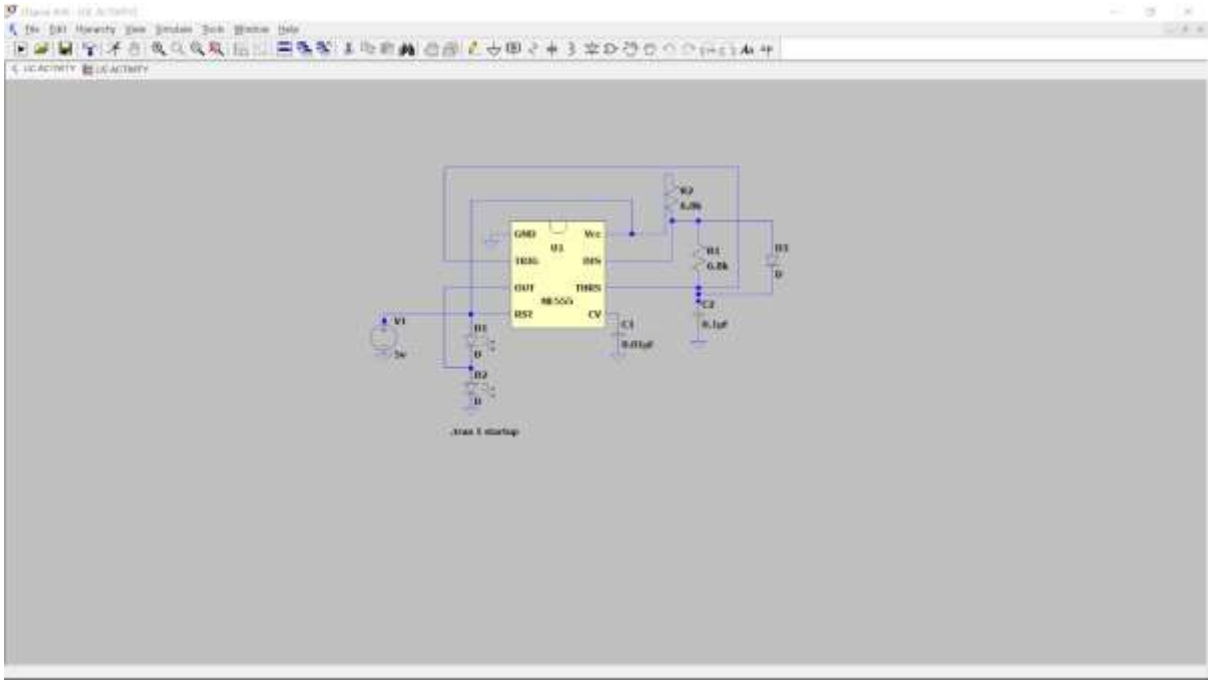

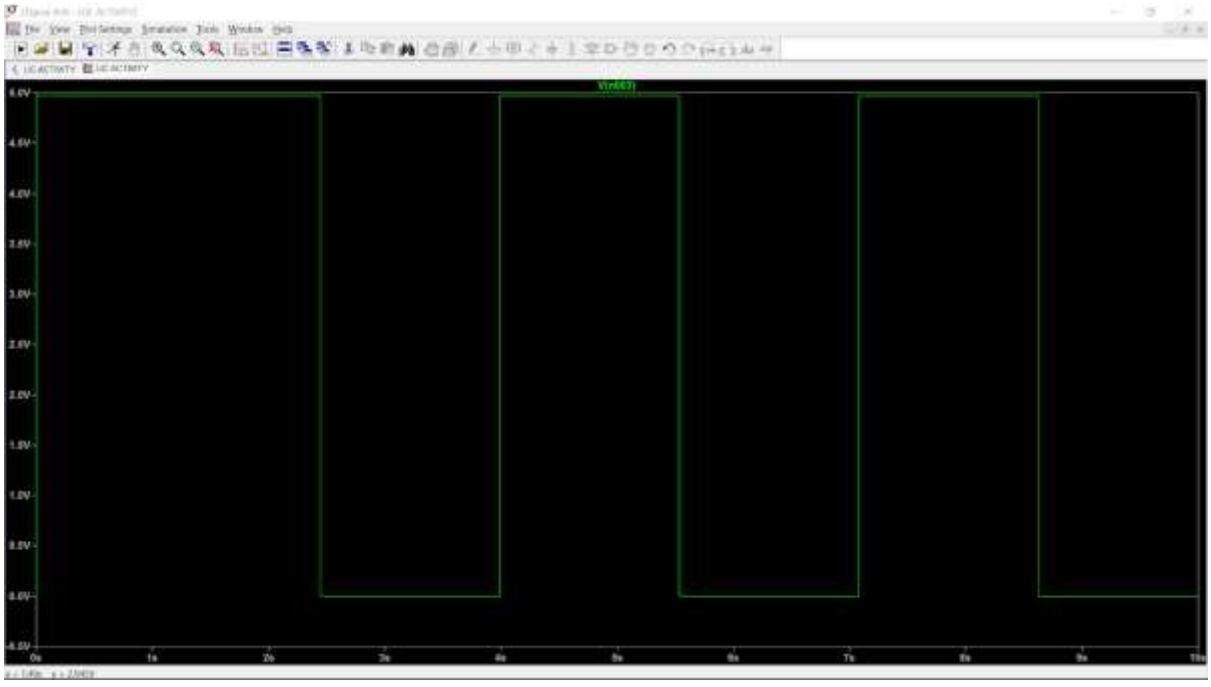

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Class: SE (EXTC)

SEM: IV

Subject: SS

Subject In charge: Christina Bage

Methodology followed: Google classroom, PPT, Written Notes, Classroom teaching Python IDLE

Difficulty faced: Students were not able to understand the applications of Signals & systems in modern technology or in practical application, so this Experiment based learning helped them to understand the right application of SS concept in various methods and ways.

New method identified: Experiment based Learning

Activity report:
Activity Report: An activity on SS was given to have an overall understanding and knowledge of SS on python programming. On how the Python codes and SS concepts are interrelated to each other there by making the students clear about the right approach of SS

Outcome: The activity gave the studentsthe opportunity to understand the concept of S with python codes and programming

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Class: TE (EXTC) **Academic year (2021-22)** **SEM**: V

Subject: DTSP

Subject Incharge: Christina Bage

Activity: Future Aspect of DSP

Methodology followed: Google meet, Google classroom, ppt.

Difficulty faced: Student faced difficulty understanding the practical aspects of DTSP in future.

New method identified : PPT on Future Aspects of DTSP was given

Activity Report: An activity on DTSP was given to have an overall understanding and knowledge about the future aspects of DTSP in the files of medical, RADAR and many more. The students came up with advance version of application on DTSP and gave an insight about the same through PPTs.

Outcome: The activity gave the studentsthe opportunity to understand the concept and the future aspects in more broader way with PPTs and explanations.

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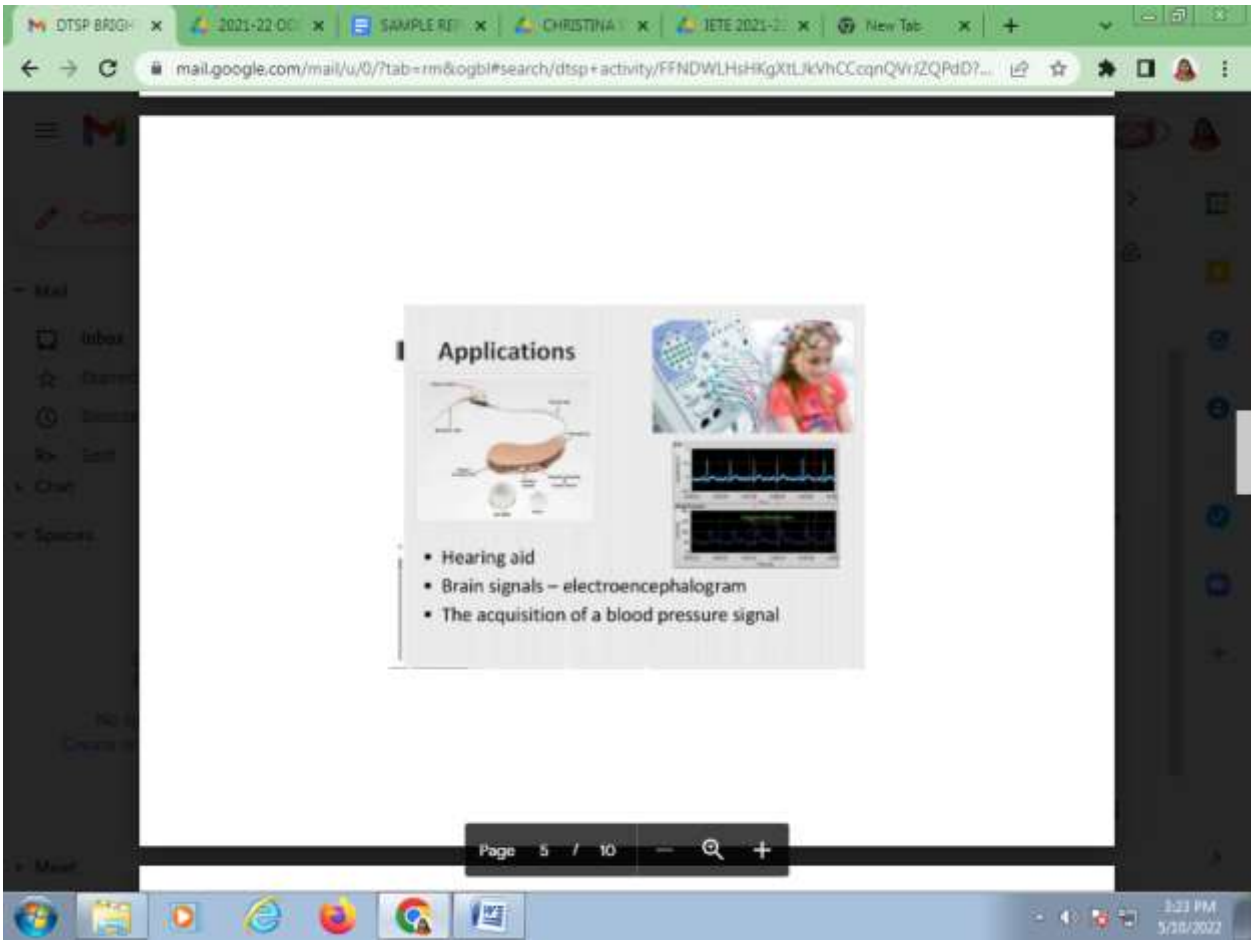

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Class: TE (EXTC) **Academic year (2021-22)** **SEM**: V

Subject: Data Structure and Algorithm

Subject Incharge: Aarti Bakshi

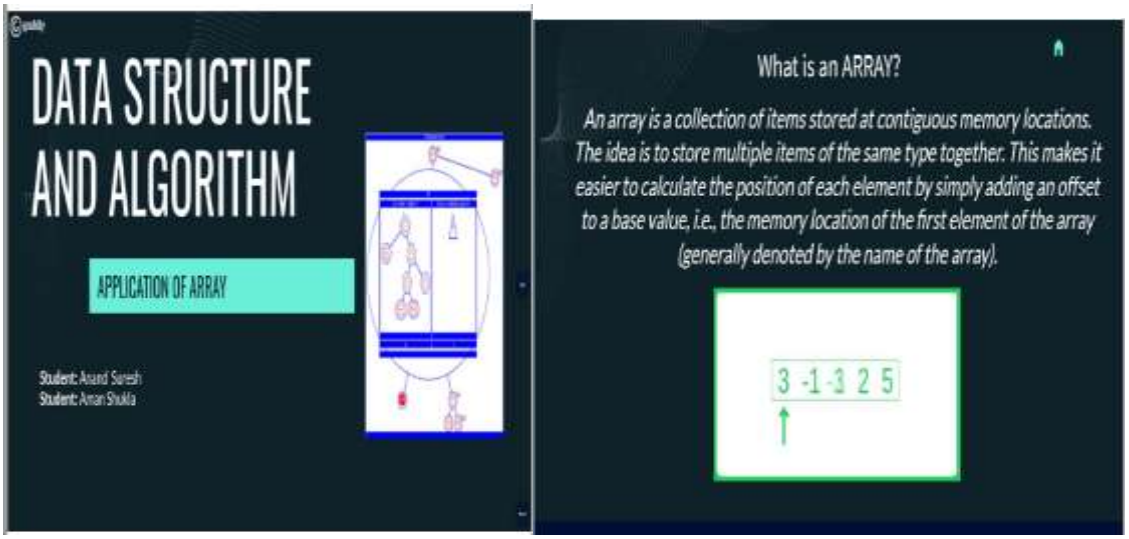
Methodology followed: Google Meet, Google classroom, ppt and classroom teaching Offline

Difficulty faced: Students do not have exposure for application of digital communication subject.

New method identified : Power Point Presentation

Activity Report: This Power point presentation allows students to present advanced topics- content beyond the syllabus by applying the concept of pointer, array, structures, link list. Also the students will be able to explore the application of the topics they have studied.

Outcome: This provided student with the knowledge of the current advanced domain for the subject learned and gave the vision to think in that domain.



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Class: TE (EXTC) Academic year (2021-22) SEM: V

Subject: Digital Communication

Subject Incharge: Aarti Bakshi

Methodology followed: Google Meet, Google classroom, ppt and classroom teaching Offline

Difficulty faced: Students do not have exposure for application of digital communication subject.

New method identified : Case Study

Activity Report: A case study is an appropriate design to gain in-depth knowledge about a specific real-world subject. It allows a student to explore the key characteristics, meanings, and implications of the case. In this case study, students explored modulation techniques used in television.

Outcome: The case study helps students do an intensive, systematic investigation of a particular topic.

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Class : TE
(EXTC) **SEM**: VI

Subject: E AND A

Methodology followed: Google meet, Google classroom, ppt.

Difficulty faced: Student faced difficulty sometime internet issues, presentation of models.

Activity: Poster making

Subject Incharge: Shubhangi Mangesh Verulkar

Activity Report: Posters can **motivate students to learn a specific topic**. They can help learners to focus on a certain idea, fact, event or process. They are convenient both for pupils and teachers as they help students to absorb the material faster. In these activity students has given prior intimation for topic which they have to read. Students discussed about the questions given by instructor with their partner. Then they discussed their points with other classmates and instructor.

Outcome: Students can develop **creative thinking and extensive research and reading**. It provides students with an opportunity to learn by doing, in turn strengthening the learning.

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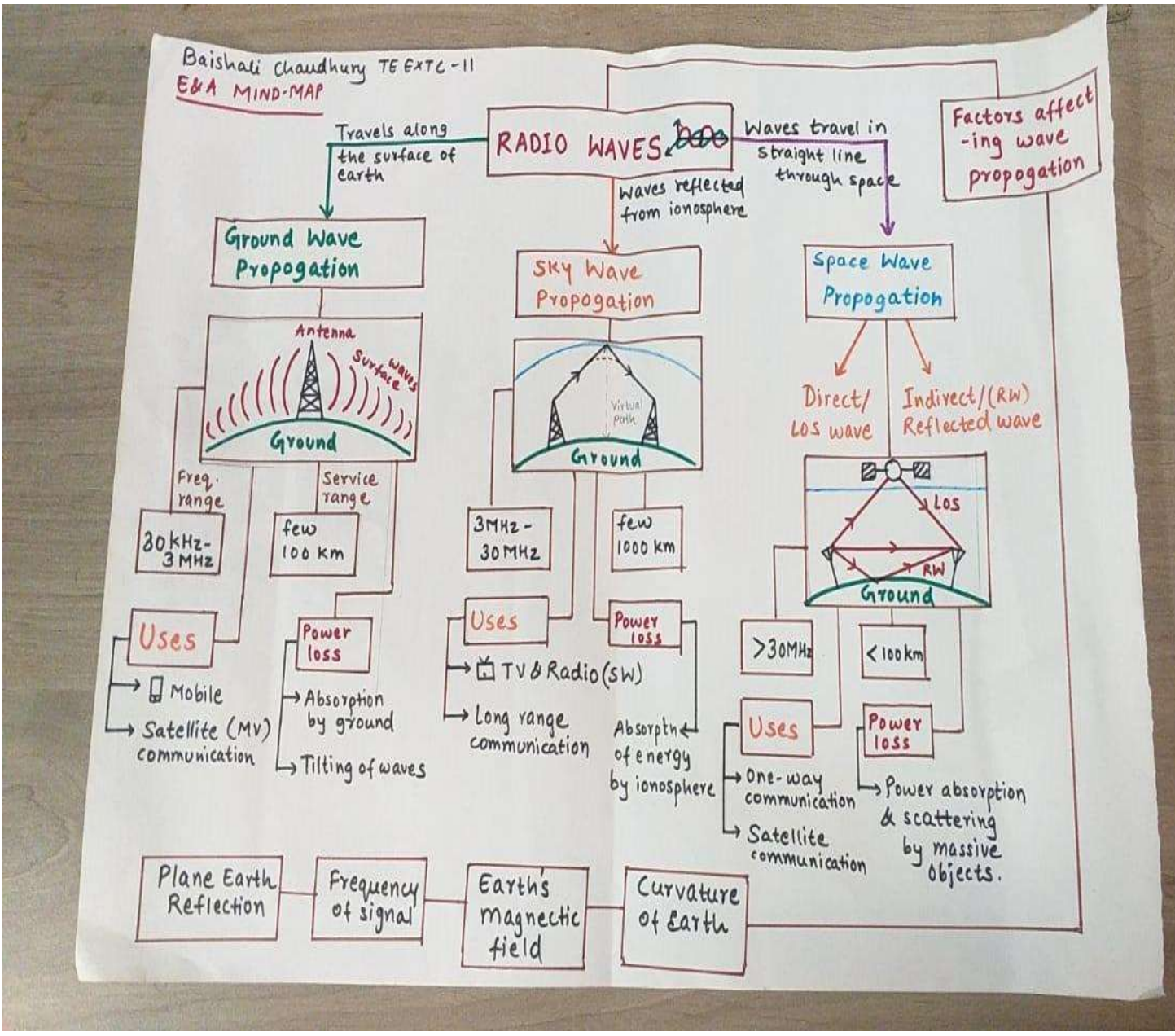

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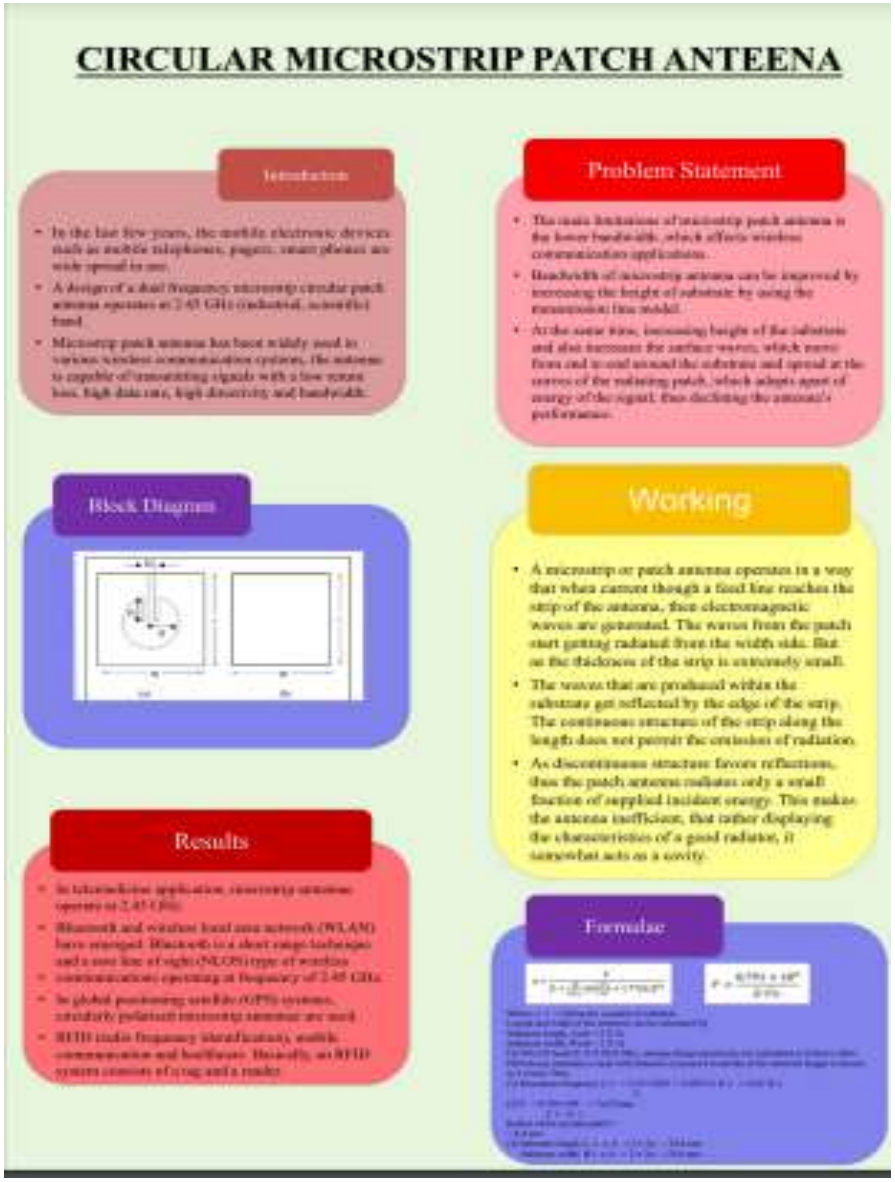

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Class: TE (EXTC) **Academic year (2021-22)** **SEM**: VI

Subject: Artificial Neural Network & Fuzzy Logic

Subject Incharge: Aarti Bakshi

Methodology followed: Black Board, Google classroom, ppt.

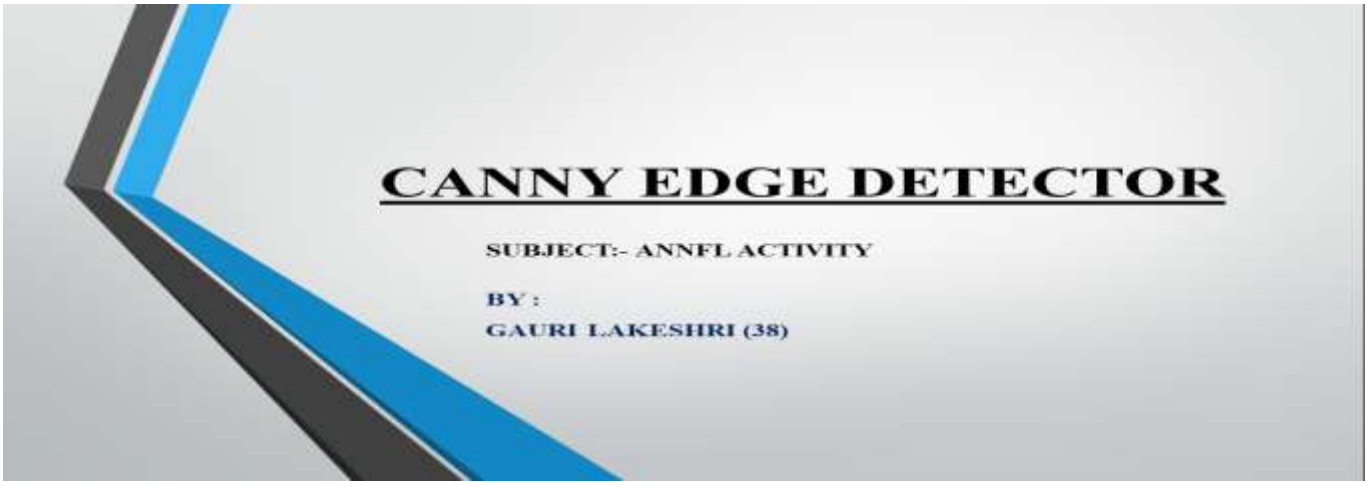
Difficulty faced: Students should know use of artificial neural network in real time application.

New method identified : Power Point Presentation

Activity: Power Point Presentation

Activity Report: This PowerPoint presentation allows students to present advanced topics- content beyond the syllabus by applying the concept of image processing and machine learning. It helps a student to learn applications of subjects in Machine learning domain.

Outcome: This provided student with the knowledge of the current advanced domain for the subject learned and gave the vision to think in that domain.



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Department of Electronics and Telecommunication

Name of Faculty: Mrs. Anupama Chaurasia

Sub: **Microwave Engineering**

Class: B.E.EXTC SEM: VII

Methodology followed: Google Class Room Teaching, Written Assignments, Remedial lectures

Difficulty faced: Students do not get the exact understanding of the topic through regular online or offline classroom teachings and basic written subject assignments.

New method identified: Video making, quiz making

Video making

Activity report:Video making can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Video making enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of video making is that the viewer can watch the screencast at a time when it's best for them because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace.

The students can record a video on explaining the steps of difficult numerical or summarizing a concept.

Outcome: This video can be uploaded on YouTube or on drive links or on website so that other students can watch it any time and learn the concept.

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matterlearning from one another. This is best option for peer-to-peer learning.

Quiz Making

Activity Report: Quiz Making is technique to brainstorm and come with the correct answer identification in a fun way.

Outcome: This activity helped Students to remember key words and their definition

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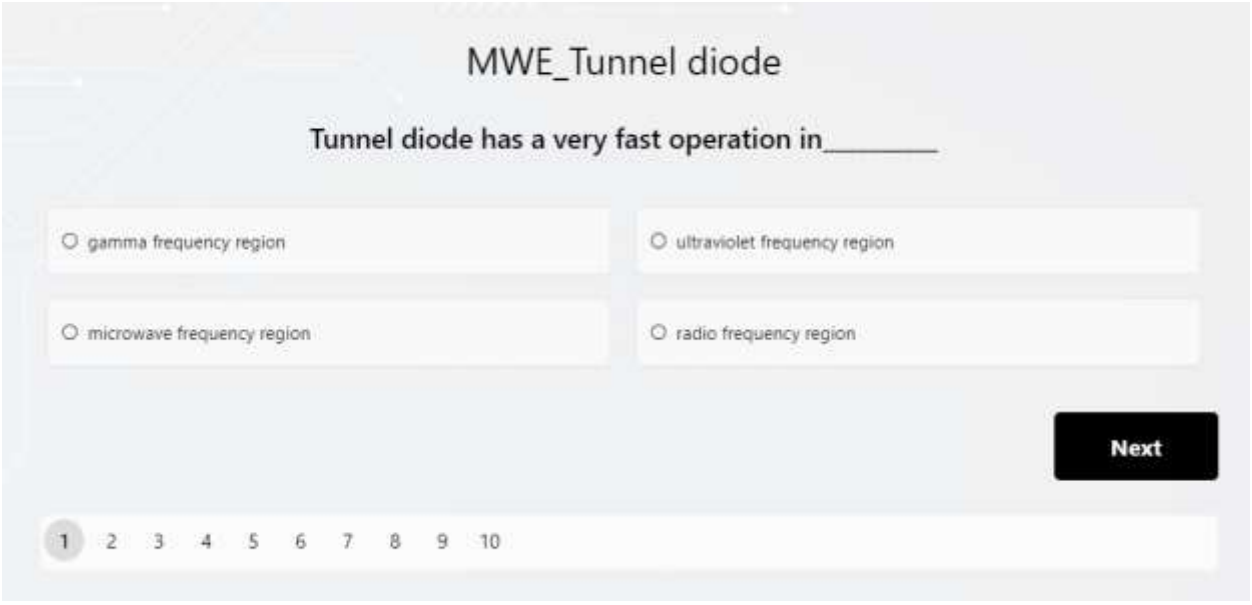

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1.Tunnel diode has a very fast operation in

Ans: microwave region

2. The Tunnel diode is best suited for

Ans: Amplifiers

3. The tunnel diode is mainly used

Ans: For very high speed of switching

4.The tunnelling phenomenon is also known as

Ans: Auto electronic phenomenon

5.From the following statements pick the correct statement about tunnel diode

Statement 1: It uses the property of negative conductance

Statement 2: In forward bias the fermilevel of p side becomes higher than the n side It operates at high frequency

Ans: 1 and 3

6.Which among the following is the reason for the depletion layer of the tunnel diode to be very small?

Ans: Dopants are high and it is abrupt

7.The tunnelling involves movement of electrons from the n-side of the conduction band to the p-side of the valance band.

Ans: True

8.What are the materials used to make the Tunnel diode?

Ans: Silicon and germanium materials

9.In the construction of tunnel diode, why is the pellet soldered to anode contact and a tiny dot to the cathode contact via a mesh screen?

Ans: For heat dissipation and reduce induction respectively

10.For a tunnel diode, when p is the probability that the carrier crosses the barrier 'W' is the width 'e' is energy

Ans: $p \propto e^{(-A^*e^*w)}$

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Department of Electronics and Telecommunication

Name of Faculty: Shubhangi Mangesh Verulkar

Sub: Mobile Communication System

Class: B.E.EXTC SEM:VII

Methodology followed: Google meet, Google classroom, ppt.

Difficulty faced: Student faced difficulty sometime internet issues, presentation of models.

New method identified : Screen Casting or Video making

Activity report: Screencasts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Screencasts enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of screen casting is that **the viewer can watch the screencast at a time when it's best for them** because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions.

Students can use Screen casting to explain what they know in their own words. The students can record a video on explaining the steps of difficult numerical or summarizing a concept.

There are many ways we can use screen-casting in our teaching.

- Answer a question
- Record a lecture
- Demo how to use an application

SAMPLE VIDEO LINKS:

Link1: https://drive.google.com/file/d/1Itku_rKPeybHHRj7XG9ug_Y_ne92B70f/view?usp=sharing

Link2:
https://drive.google.com/file/d/11-SwFHEVmyOsgdg1eX4EOar60sORqIxx/view?usp=sharing

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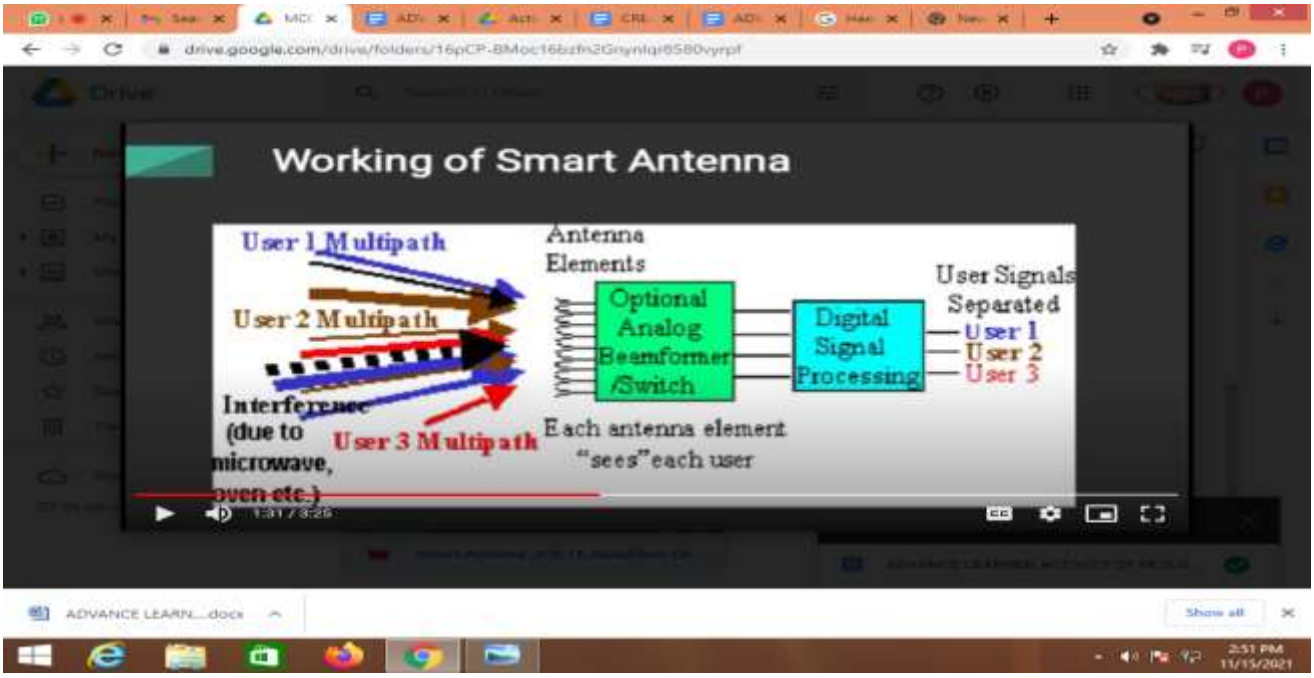

Outcome: Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter and learn from one another. This is best option for peer to peer learning.

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Name of Faculty: Dr. Baban U. Rindhe

Sub.: - **Optical Communication**

Class: B.E., Sem: VII, EXTC

Methodology followed: Google Meet, Google Classroom, PPT and Classroom Teaching in Online Mode.

Difficulty faced: Student faced difficulty sometimes with internet issues, presentation of models.

New method identified: Screen Casting or Video making,

Activity report: Screencasts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Screencasts enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of screen casting is that **the viewer can watch the screencast at a time when it's best for them** because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and re watching portions.

Students can use Screen casting to explain what they know in their own words. The students can record a video on explaining the steps of difficult numerical or summarizing a concept.

There are many ways we can use screen casting in our teaching.

- Answer a question
- Record a lecture
- Demo how to use an application

SAMPLE VIDEO LINKS:
Link 1:

https://docs.google.com/presentation/d/1TaHBs-Ot80QXu1nN1RZddvkyKs1CGe3t/edit#slide=id.p1

Outcome: This video can be uploaded on YouTube or on drive links or on website so that other students can watch it any time and learn the concept. In this subject students made video on presentation and demonstration for mini-project of Optical Communication.

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter learning from one another. This is best option for peer-to-peer learning.

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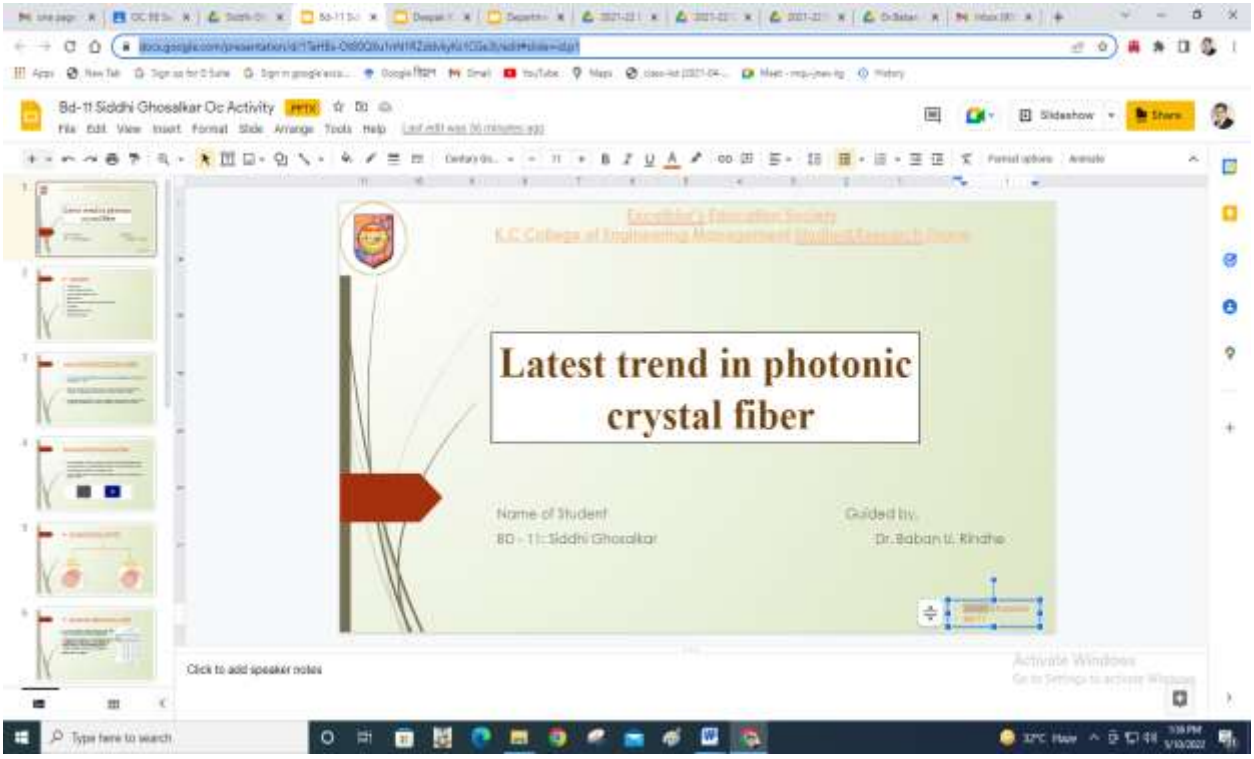

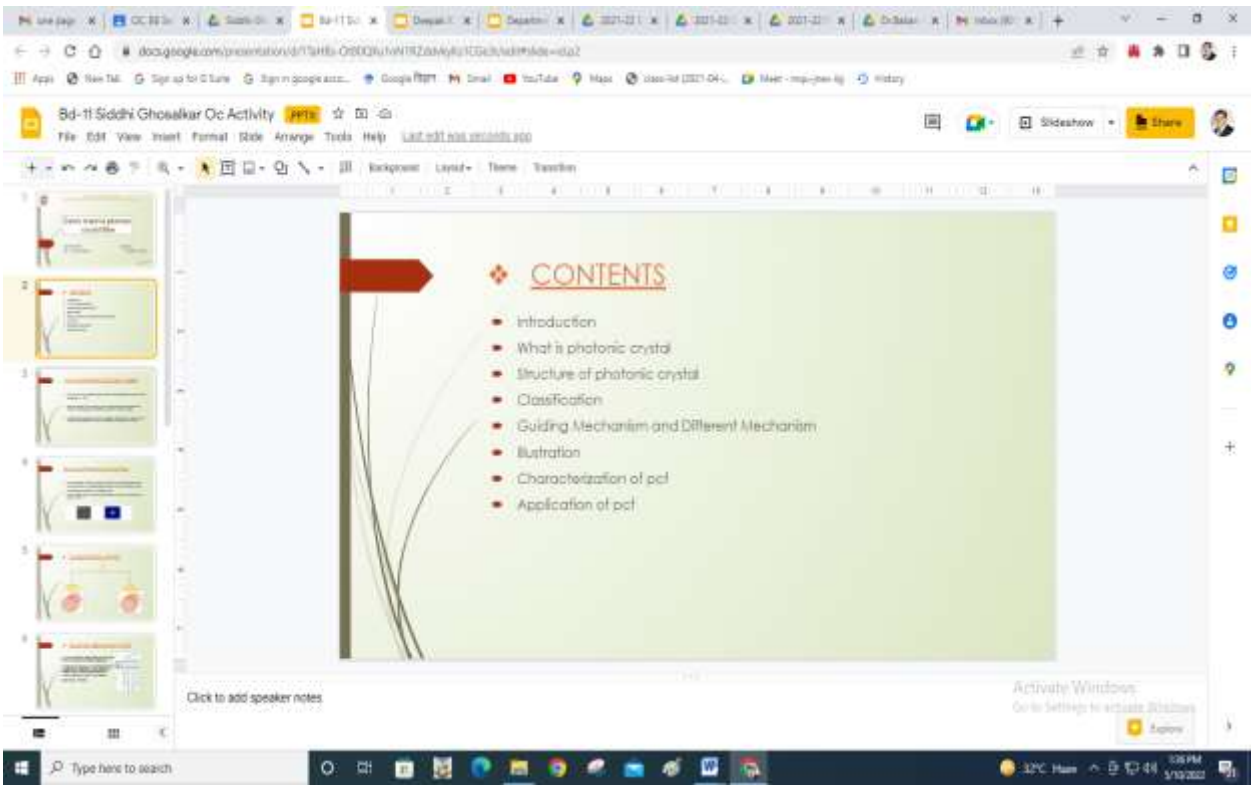

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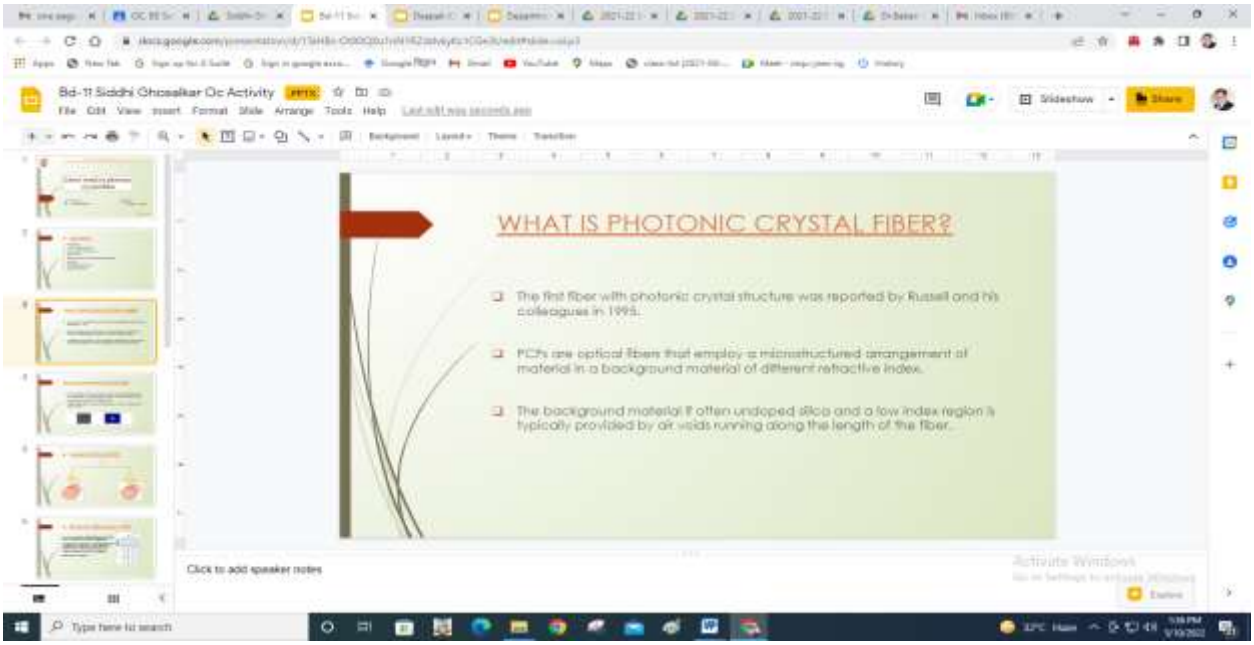

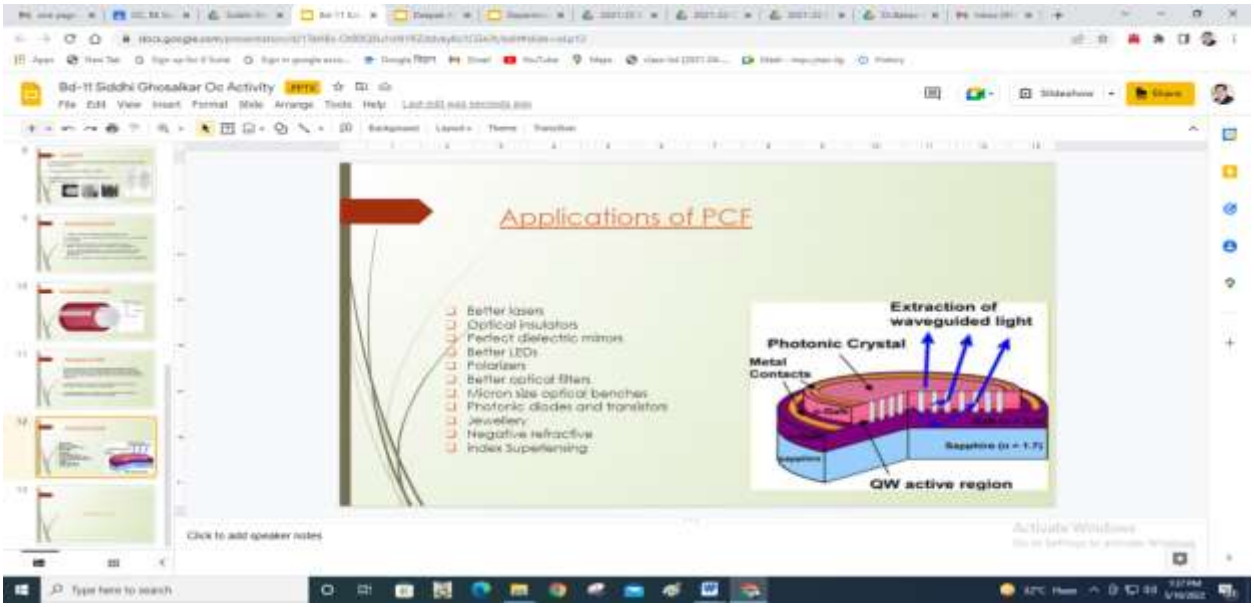

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Department of Electronics and Telecommunication

Name of Faculty: Sowmya Kini M

Sub: Big Data Analytics

Class: B.E. EXTC SEM: VII

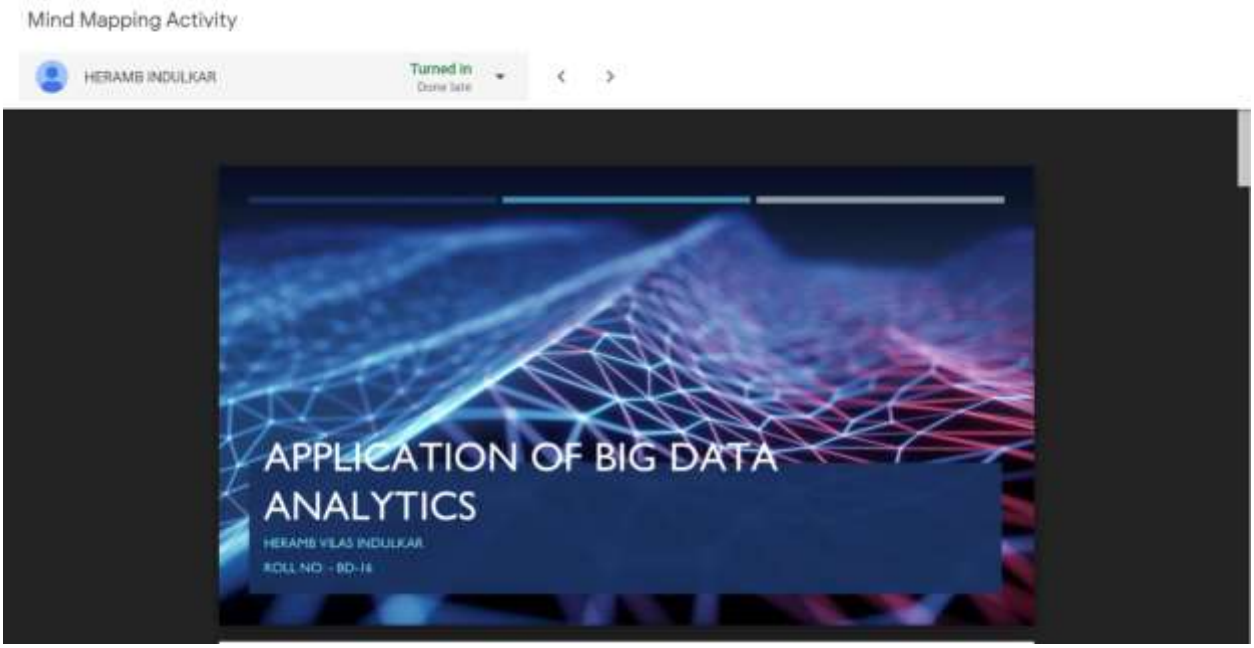
Methodology followed: Google meet, Google classroom, PPT.

Difficulty faced: Student faced difficulty due to internet issues

New method identified: Self Mind Mapping activity

Activity report: **A visual representation of information** — is a versatile tool that can assist students with many aspects of their learning. It can help them map out new ideas, explore concepts in more detail and facilitate a better understanding of relationships and connections.

1. Create a curriculum overview or lesson plan. ...
2. Organize and manage class projects. ...
3. Create engaging presentations in less than three minutes.



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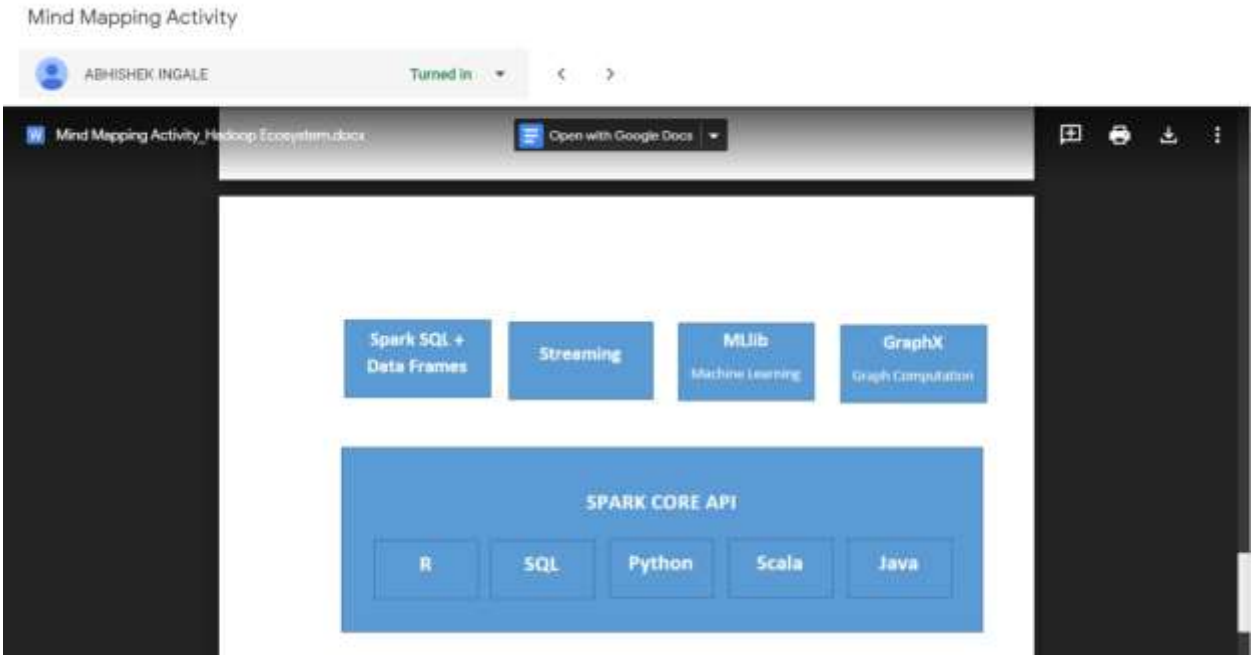

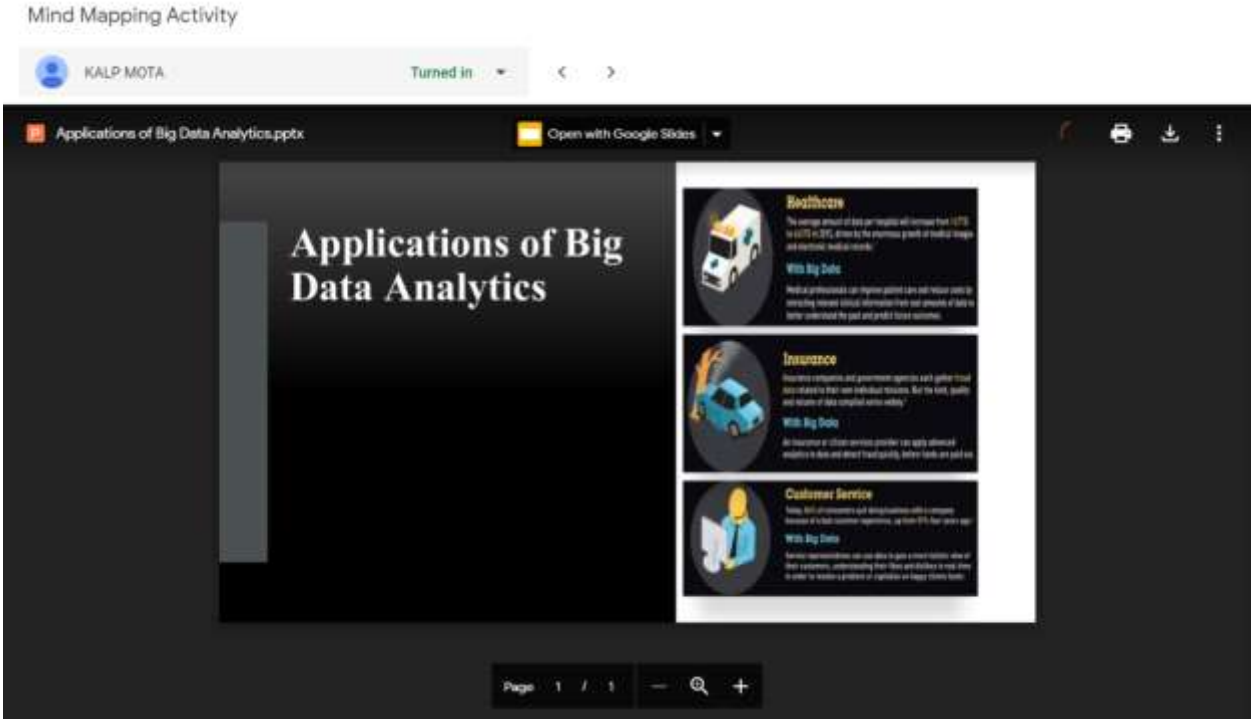

Outcome: Mind Mapping is a useful technique that supports learning, improves information recording, shows how different facts and ideas are related, and enhances creative problem solving.

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Department of Electronics and Telecommunication

Name of Faculty: Ms Riya Pal

Sub: **NMT**

Class: B.E/ EXTC/ SEM:VIII

Methodology followed: Offline

Difficulty faced: Students faced difficulty sometimes with internet issues.

New method identified : Screen Casting or Video making

Activity report: A screencast is a digital recording of computer screen output, also known as a video screen capture or a screen recording, often containing audio narration. Screencasts can help demonstrate and teach the use of software features. Creating a screencast helps software developers show off their work. Educators may also use screencasts as another means of integrating technology into the curriculum. Students can record video and audio as they demonstrate the proper procedure to solve a problem on an interactive whiteboard. In classrooms, teachers and students can use this tool to create videos to explain content, vocabulary, etc. Videos can make class time more productive for both teachers and students. Screencasts may increase student engagement and achievement and also provide more time in which students can work collaboratively in groups, so screencasts help them to think through cooperative learning.

Application of screen casting :
Common examples of screencasts are:
• Tutorials • Training videos • Video lessons • Recorded presentations

Brief Summary of the Screen-Casting :

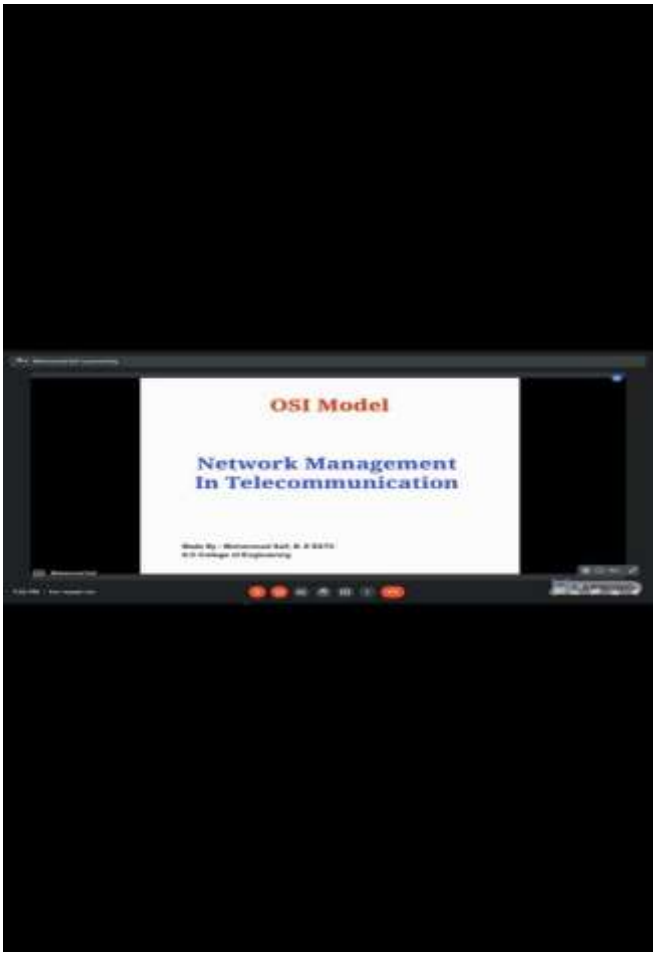
In this subject of NMT (Network Management in Telecommunication) , a student named Mohammad Saif has made a screen-casting on OSI Model and demonstrated its features and working/role in the field of telecommunication.

- The Open Systems Interconnection model (OSI model) is a conceptual model that describes the universal standard of communication functions of a telecommunication system or computing system, without any regard to the system's underlying internal technology and specific protocol suites. Therefore, the objective is the interoperability of all diverse communication systems containing standard communication protocols, through the encapsulation and de-encapsulation of data, for all networked communication.
- The model partitions the flow of data in a communication system into seven abstraction layers, to describe networked communication from the physical implementation of transmitting bits across a communications medium to the highest-level representation of data

of a distributed application. Each intermediate layer serves a class of functionality to the layer above it and is served by the layer below it. Classes of functionality are realized in all software development through all and any standardized communication protocols.

- Each layer in the OSI model has its own well-defined functions, and the functions of each layer communicate and interact with the layers immediately above and below it, unless the layer does not have layers below or above.

Sample Screenshots of videos –



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Outcome: Students learned about OSI model and it's layers . This video can be uploaded on YouTube or on drive links or on any websites so that other students can watch it any time and thus can learn the concept. When conducting distance learning, screencast videos become a great resource for asynchronous whole group or small group instruction.

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Department of Electronics and Telecommunication

Name of Faculty: Anupama Chaurasia

Subject: RF Design

Class: B.E.EXTC SEM: VIII

Methodology followed: Google classroom, PowerPoint Presentation, Written Notes,

Difficulty faced: Student faced difficulty in understanding the practical aspects of the topics in EMI EMC.

New method identified: Industrial Visit at EMI EMC Division Kharghar, Navi Mumbai

Activity report:
Industrial visit has its own importance in a career of a student who is pursuing a professional degree. Main aim of industrial visit is to provide an exposure to students about practical working environment. They also provide students a good opportunity to gain full awareness about industrial practices. Through industrial visit students get awareness about new technologies.

Place of Visit: Society of Applied Microwave Electronics Engineering and Research (SAMEER), EMI/EMC Division, Kharghar

Date of Visit: 21 st April 2022 (One day visit)
The EMI/EMC division has expertise in the field of EMC testing for commercial electronic products as well as electronics required for defense and space applications (MIL STD products). It provides Test, Measurement and Design Consultancy services to customers for their satisfaction in achieving Electromagnetic Compatibility in electronic products to comply with National/International EMC Standards. It has ISO/IEC 17025:2005 and ISO 9001:2008. The NABL accredited EMI/EMC Test facility is located at CBD Belapur, Navi Mumbai. EMC testing is done as per various civilian and military standards like CISPR 11, CISPR 22, CISPR 24, IEC 61000-4, MIL-STD-461C/D/E. Design Consultancy and solutions are also offered to customers for making their products compliant with various EMC standards. The test and consultancy service is routinely made available to customers desirous of obtaining CE marking and exporting their products. Details for the EMC services are available in the Services Offered section of the site. The division undertakes both research and test, design consultancy activities. in the area of Electromagnetic Interference and Compatibility.

Outcome: Industrial visit provided students an insight into the real working environment, workstations, plants, assembly lines, machines, systems, and a good interaction with highly trained and experienced personnel. Students got to learn a lot of things that will help in their development and also for the future.

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Department of Electronics and Telecommunication

Name of Faculty: Dr. Baban U. Rindhe

Sub.: **Wireless Networks**

Class: B.E., Sem: VIII, EXTC

Methodology followed: Google Meet, Google Classroom, PPT and Classroom Teaching Offline

Difficulty faced: Student faced difficulty sometimes with internet issues, presentation of models.

New method identified: Screen Casting or Video making,

Activity report: Screencasts can provide learners a student-centered and engaging learning experience in both distance and traditional learning settings. Screencasts enable teachers to create a digital recording of any instructional activity performed on a computer screen, and they can be used as learning resources, learning tasks, and learning support.

A major benefit of screen casting is that **the viewer can watch the screencast at a time when it's best for them** because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and re watching portions.

Students can use Screen casting to explain what they know in their own words. The students can record a video on explaining the steps of difficult numerical or summarizing a concept.

There are many ways we can use screen casting in our teaching.

- Answer a question
- Record a lecture
- Demo how to use an application

SAMPLE VIDEO LINKS:
Link 1:
https://docs.google.com/presentation/d/1WbjXQJ3P6FdhtylY48ujgaAnpHxLrJA-/edit#slide=id.p1

Outcome: This video can be uploaded on YouTube or on drive links or on website so that other students can watch it any time and learn the concept. In this subject students made video on presentation and demonstration for mini-project of WN.

Video is an efficient and memorable way to deliver information to students of all ages. But having students create video projects themselves is also a great way to help them actively engage with subject matter learning from one another. This is best option for peer-to-peer learning.

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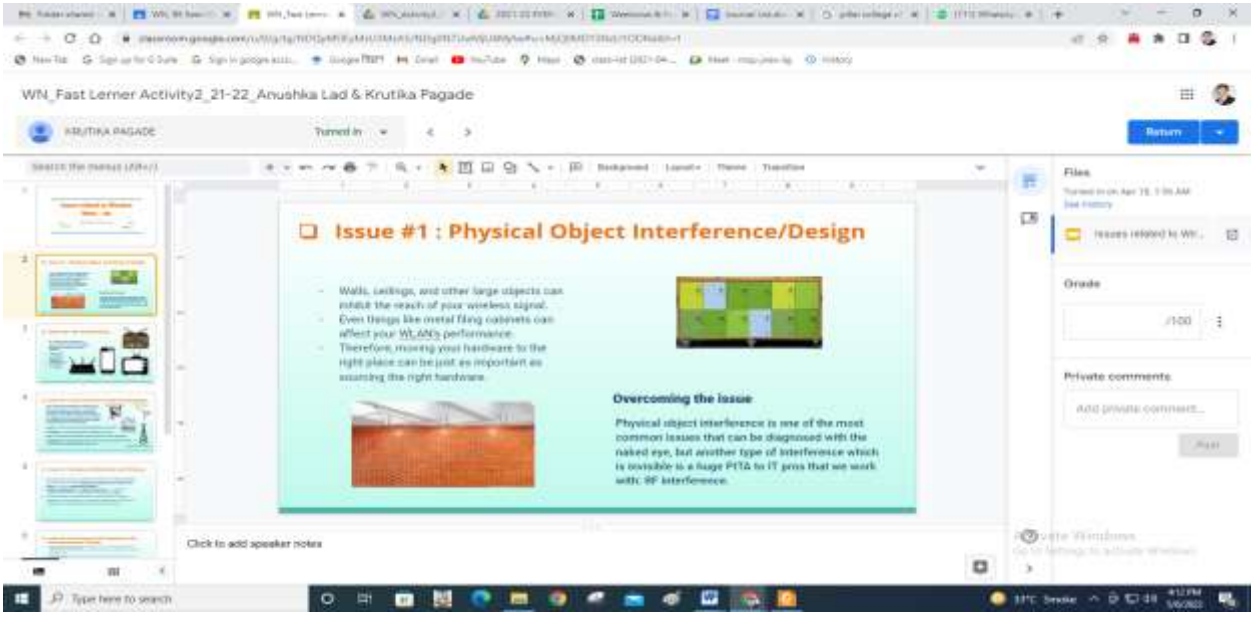

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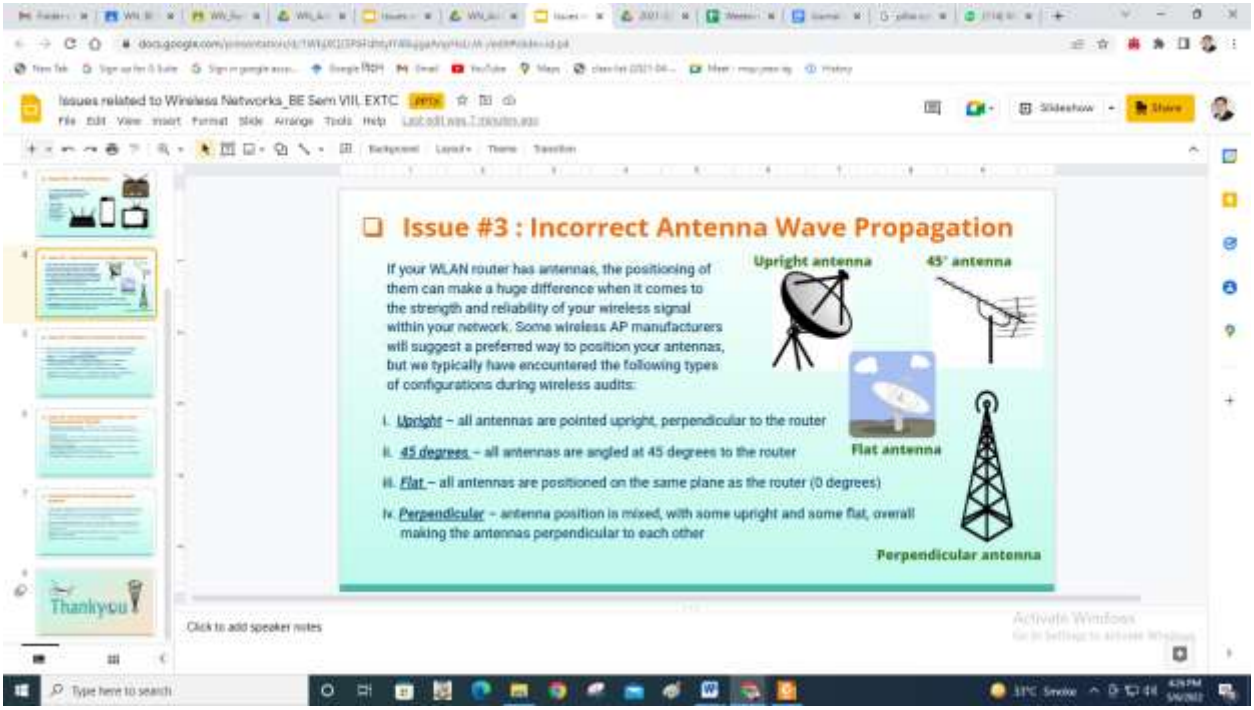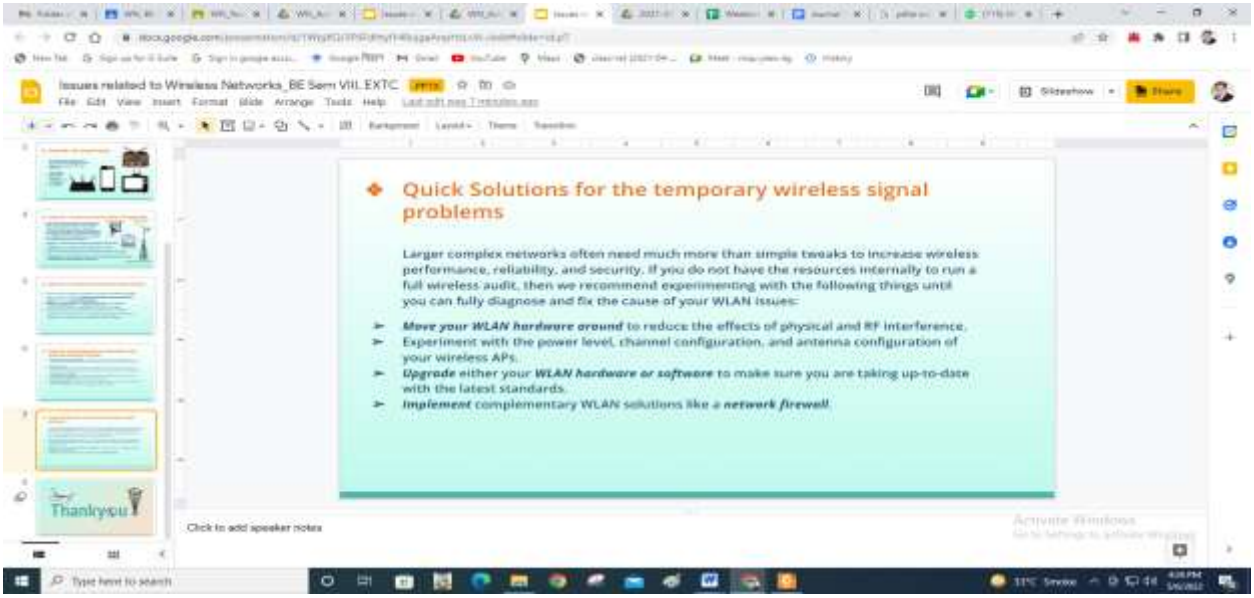
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