



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara



Criterion 7 – Institutional Values and Best Practices

Key Indicator – 7.2 Best Practices

7.2.1 - Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual.

Sr.No.	Documentary Evidences / Sample Documents	Page No.
1	Sample documents for best practices successfully implemented by the Institution	1 – 48



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Computer Science & Engineering

Academic Year 2023-24

Class:- Third Year

Semester-VI

Name of the Course: Computer Networks

Course Code: BTCOC602

Innovative Pedagogical Activities

Course: Computer Networks

Course Code: BTCOC602

Pedagogy refers to a student centered **teaching** and learning (SCL) approach where educators are reflective in their theory, practice and policy implementation in **teaching/learning**, resulting to positive impacts in the learners.

Having a well-thought-out **pedagogy** can improve the quality of your **teaching** and the way students learn, helping them gain a deeper grasp of fundamental material. Being mindful of the way we **teach** can help us better understand how to help students achieve deeper **learning**.

Keeping in mind the importance of pedagogical approach we designed a pedagogy activity for the students. Pedagogy activity was posted on what's app group & On Gnomio Moodle Site and sufficient time was given to the students to solve the activity.

Following are the day wise details of pedagogy activities conducted during the refresher program:

Pedagogy Activities Details:

Sr. No	Name of the Activity	Unit	WhatsApp/ Online/Gnomio	No of Students Successfully Completed
1	Mind Map Activity	1	Google Classroom /offline	68
2.	Crossword	1	Google Classroom /offline	67
3.	WhatsApp Emoji Activity	1	Google Classroom /offline	70
4.	Case Study	I,II	Google Classroom /offline	70
5.	Think Pair Share Activity	II	Google Classroom /offline	71
6.	Jigsaw Activity	III	Google Classroom /offline	70
7.	Poster Presentation activity	II	Google Classroom /offline	69
8.	PPT Presentation	V	Google Classroom /offline	71
9.	Video Making	IV	Google Classroom /offline	70
10.	Industry Visit Report	I,II,III	Google Classroom /offline	70

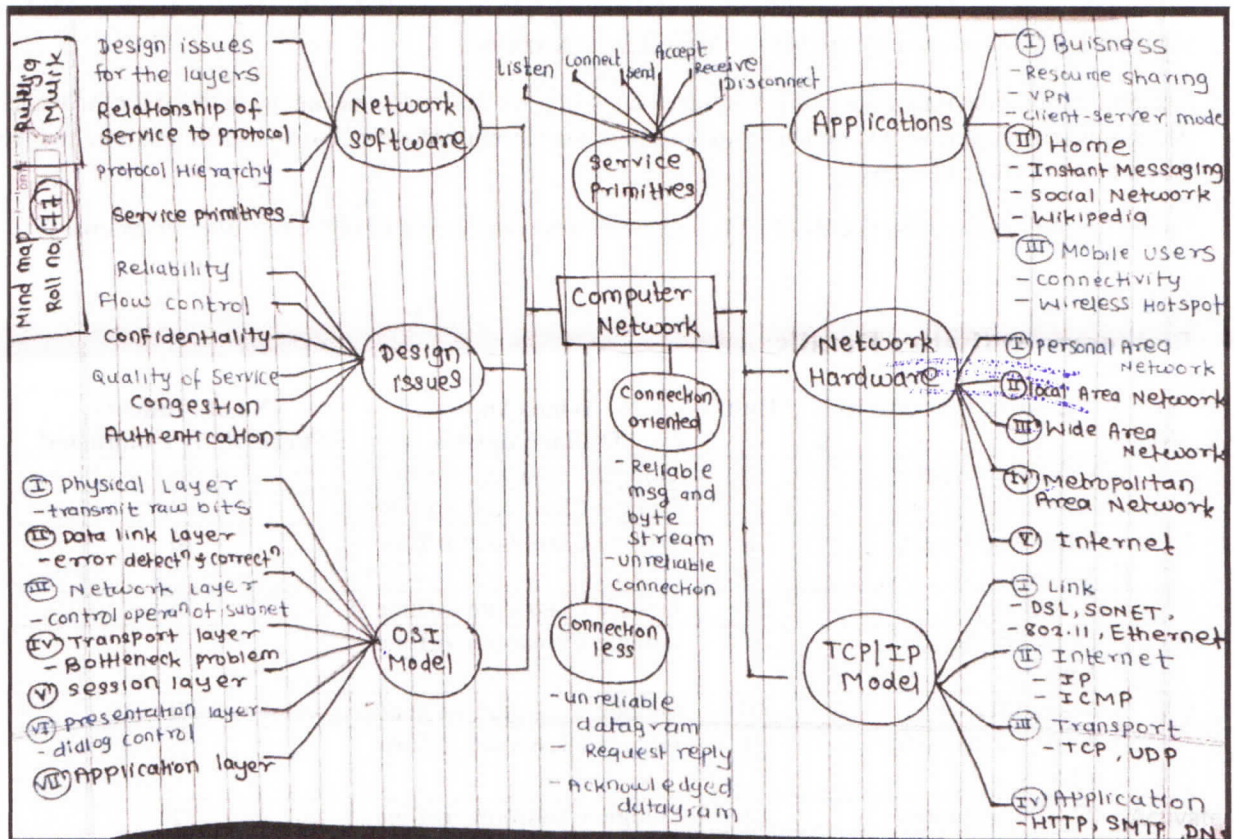
Innovative Tools: Google Classroom as a LMS Tools, Google Form, animated Videos & PPT's

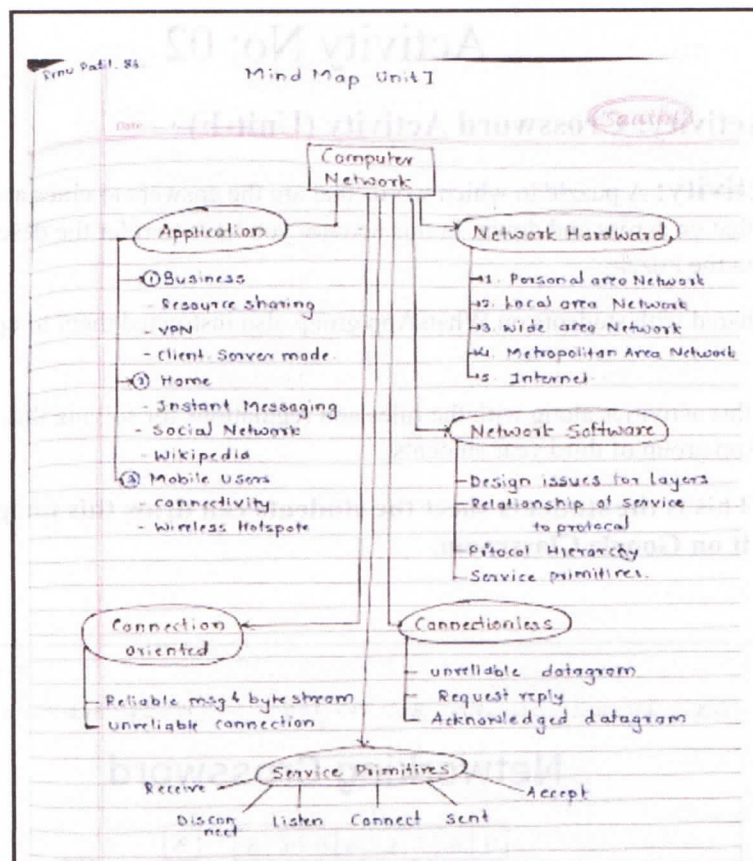
Activity No: 01

Name of the Activity: Min Map Activities (Unit-I)

Mind mapping — 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. It is an creative activity where the technical concepts can be explained and demonstrated in simplified fashion. A map or drawing or visual image is used to imagine the conceptual scenario of any topic with the scenario faced in the real world. Number of analogies can be used to create a mind map of any technical concept.

Sample document were given on Gnomio Moodle for reference purpose.





Sample Document shared with the students .

Activity No: 02

Name of the Activity: Crossword Activity (Unit-I)

Crossword Activity: A puzzle in which words that are the answers to clues are written into a pattern of numbered squares that go across and down. In this activity you have to refer the description and fill up the appropriate words in the Puzzle .

This activity was shared with students on WhatsApp group also instructed them to upload this on Google Classroom

Notification about this activities along with the rules and regulations for solving this activity was shared with students on whatsApp group of third year students.

Students Sheet: This is the students sheet the students can draw this image on plain paper and they can submit it on Google Classroom.

Answer Sheets

T.Y.B

Name: Adil Ismail Shaikh Roll No. 115 Date: 27th Feb 2024 Period: _____

Networking Crossword

Across

1. What are any devices that connect network environments that are not alike?
4. What indicates your computer's virtual location in a network?
6. What is the data rate supported by a network connection or interface?
10. What physically connects computers to one another in a network?
14. What sends out a message to all devices on the same network segment?
15. What is SMTP's (Simple Mail transfer Protocol) most common form?

Down

2. What sends signals over different frequencies at once?
3. What kind of network cable is most commonly used?
5. What is a special electronic circuit inside any computer attached to a network?
7. What is used to centralize data and share it or save it in a network?
8. What is a device that can connect multiple network segments?
9. What is the part of a company's network that allows access to employees?
11. What are two or more computers connected by a wireless radio connection so that they can exchange information a part of?
12. What is another name for 1 byte?



Activity No 1

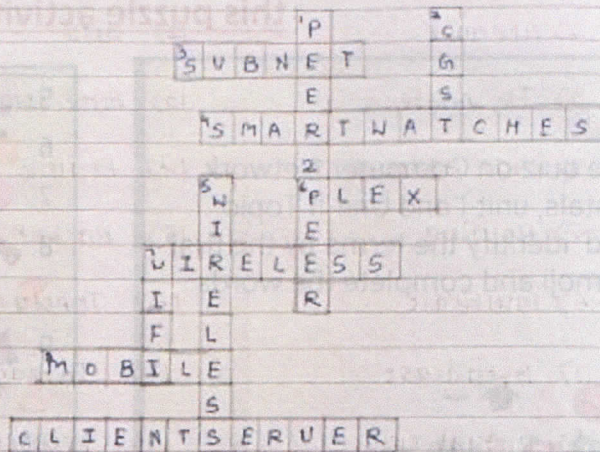
* Computer Network Introduction *

Name : Shreya Anil shete.

Roll No. 119

Div 1 - TY (B)

(Network crossword)



Sample Response of Crossword activity on Unit-I

Activity No: 03

Name of the Activity: WhatsApp Emoji Activity(Unit-I)

The students has to identify the terms by the first letter of Emoji and complete the words.

Notification of WhatsApp Emoji Activity along with the rules for solving this puzzle activity.

Dear all

Here is the quiz on Computer Network fundamentals, unit-I and Unit-II Topic you should identify the terms by the first letter of Emoji and complete the words

1. 🍌 🍌 🍌 🍌 🍌 🍌
2. 🍌 🍌 🍌 🍌 🍌 🍌
3. 🍌 🍌 🍌 🍌 🍌 🍌
4. 🍌 🍌 🍌 🍌 🍌 🍌
5. 🍌 🍌 🍌 🍌 🍌 🍌
6. 🍌 🍌 🍌 🍌 🍌 🍌
7. 🍌 🍌 🍌 🍌 🍌 🍌
8. 🍌 🍌 🍌 🍌 🍌 🍌
9. 🍌 🍌 🍌 🍌 🍌 🍌
10. 🍌 🍌 🍌 🍌 🍌 🍌

5. 🍌 🍌 🍌 🍌 🍌 🍌
6. 🍌 🍌 🍌 🍌 🍌 🍌
7. 🍌 🍌 🍌 🍌 🍌 🍌
8. 🍌 🍌 🍌 🍌 🍌 🍌
9. 🍌 🍌 🍌 🍌 🍌 🍌
10. 🍌 🍌 🍌 🍌 🍌 🍌
11. 🍌 🍌 🍌 🍌 🍌 🍌
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18. 🍌 🍌 🍌 🍌 🍌 🍌
19. 🍌 🍌 🍌 🍌 🍌 🍌
20. 🍌 🍌 🍌 🍌 🍌 🍌

Sub:- Computer Network

Pedagogical activity 2 : Emoji activity

Name :- Rutuja Navnath Mulik

Roll no :- 77

Div :- TY (B)

- | | |
|-------------------|-----------------|
| ① Subnet | ⑪ Bytes |
| ② Arpanet | ⑫ Bits |
| ③ IP Address | ⑬ Error Control |
| ④ Mac Address | ⑭ Frame |
| ⑤ Routing | ⑮ Packet |
| ⑥ Multicast | ⑯ Topology |
| ⑦ Broadcast | ⑰ Intranet |
| ⑧ virtual circuit | ⑱ Protocol |
| ⑨ Datagramnetwork | ⑲ Hub |
| ⑩ Host Address | ⑳ OSI Model |

Sub - computer Network

Pedagogical activity 2 : Emoji activity

Name - Vasudha Subale - 108 - TY B

- | | |
|-------------------|-----------------|
| ① Subnet | ⑪ Bytes |
| ② Arpanet | ⑫ Bits |
| ③ IP Address | ⑬ Error Control |
| ④ Mac Address | ⑭ Frame |
| ⑤ Routing | ⑮ packet |
| ⑥ multicast | ⑯ Topology |
| ⑦ Broadcast | ⑰ Intranet |
| ⑧ virtual circuit | ⑱ protocol |
| ⑨ Datagramnetwork | ⑲ Hub |
| ⑩ Host Address | ⑳ OSI model. |

Sample Responses of WhatsApp Emoji Activity on Unit-I & II

Activity No: 04

Name of the Activity: Case Study Activity (Unit-I)

Name of Organisation: Karmaveer Bhaurao Patil College of Engg.

Date of Visit:

No. of Students Present:



Name: Prabhune Sarika Dilip **Class :** TY CSE (B) **Roll No :** 101

Title:

Enhancing Network Infrastructure in KBPCOE's IT Cell

Introduction:

In the IT cell of KBPCOE, a robust network infrastructure is in place to manage all networking-related operations. This report provides an overview of the components and functionalities of the IT cell's network setup.

Network Connectivity:

The connection between the service provider and the Sophos firewall is established using high-speed fiber-optic internet connection. Fiber optic connections offer increased bandwidth and faster data transfer compared to traditional broadband options like CAT-6 cable. This ensures a robust and reliable link between the external internet service and the Sophos firewall, with bandwidth measured in Gigabytes.

Sophos Firewall:

The Sophos firewall plays a vital role in ensuring network security by acting as a barrier between the college's internal network and external threats from the internet. It performs packet filtering, examining data packets entering or leaving the network, and making decisions based on predefined rules. This prevents unauthorized access and filters out potentially harmful traffic. The firewall also maintains records of active connections, allowing only legitimate and established connections to pass through.

Optical Network Terminal (ONT):

An ONT is used in fiber-optic communication networks to convert optical signals into electrical signals. It serves as an interface between the service provider's fiber-optic network and the college's internal network, facilitating seamless communication.

Software Development Switch:

The software development switch acts as a central point for network connectivity, facilitating efficient communication and data transfer between different departments such as mechanical, computer, civil, and humanities. The network topology varies, with a star topology used for departmental connections and bus topology for connecting the library and administration office.

Lab Connections:

In each department, including the computer department, a star topology is used for connectivity. From the IT cell, connections are extended to all eight labs, with each lab equipped with a switch to connect all PCs.

Uninterruptible Power Supply (UPS):

A UPS device provides battery backup power to connected electronics in case of power outage or fluctuation. This ensures uninterrupted operations, especially during online examinations and critical tasks.

Online Examination Setup:

For online examination purposes, an online exam LAN switch is deployed to provide connections to eight labs exclusively used for online exams.

Conclusion:

The implementation of an efficient network infrastructure, complemented by UPS devices, underscores our commitment to seamless communication and uninterrupted operations across diverse departments. With a total investment of up to 6 lakh in IT cell equipment, KBPCOE is well-equipped to meet the networking needs of its academic and administrative functions.

Activity No: 05

Name of the Activity: **Think Pair Share Activity (Unit-II)**

Session plan for conducting the Think Pair Share Activity on Google Meet

Program: Computer Science and Engineering	Course: Computer Networks
Class: T.Y. (CSE)	Course Code:
Unit No.: 2	Lecture No.: 4
Duration: 1 Hr.	Date: 4/3
Objective: To elaborate the concept of wireless LAN using Example	
Outcomes: Students get a clear understanding of wireless LAN	

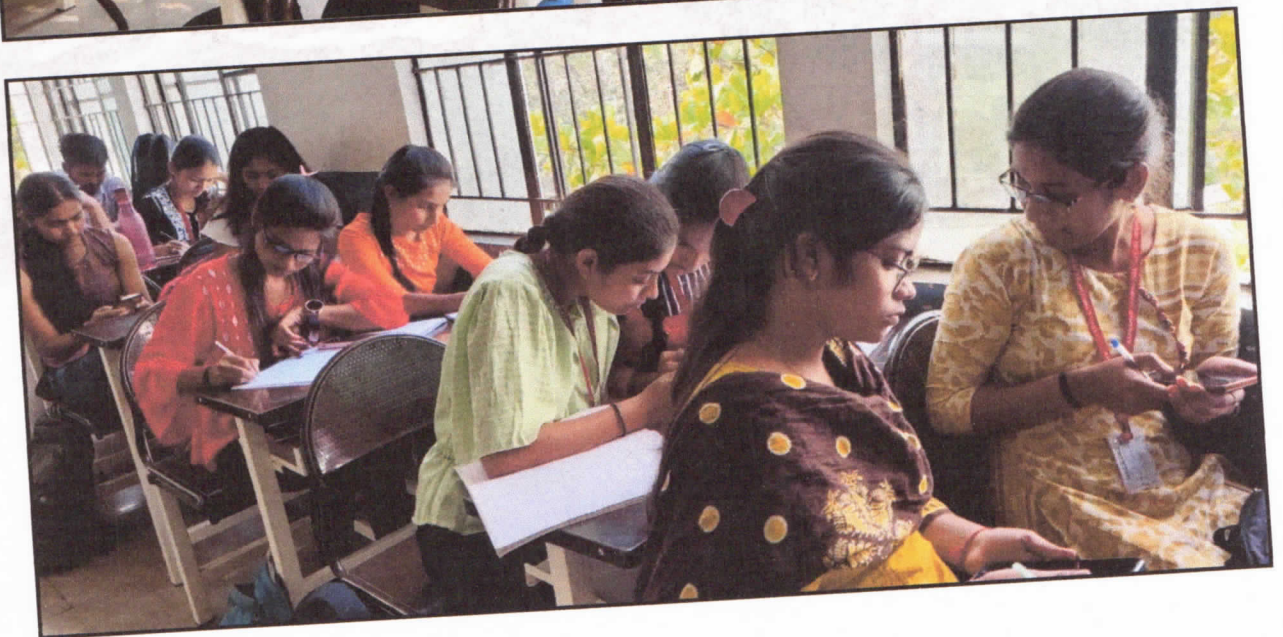
Session Plan

Time	Teacher Activity	Student Activity	Teaching Tool / Assessment Method / Resource used
20 min.	Conducting discussion on Wireless LAN	Listening and noting down	Lecture method along with PPT
20min.	Discussion on various types of Wireless LAN	Participating in Discussion on various types of Wireless LAN and sharing their opinion	Think – Pair - Share
15 min.	Summarizing output of discussion	Listening and noting down	Lecture method along with PPT
5 min.	Summarizing the lecture	Listening and noting down	

Activity No: 06

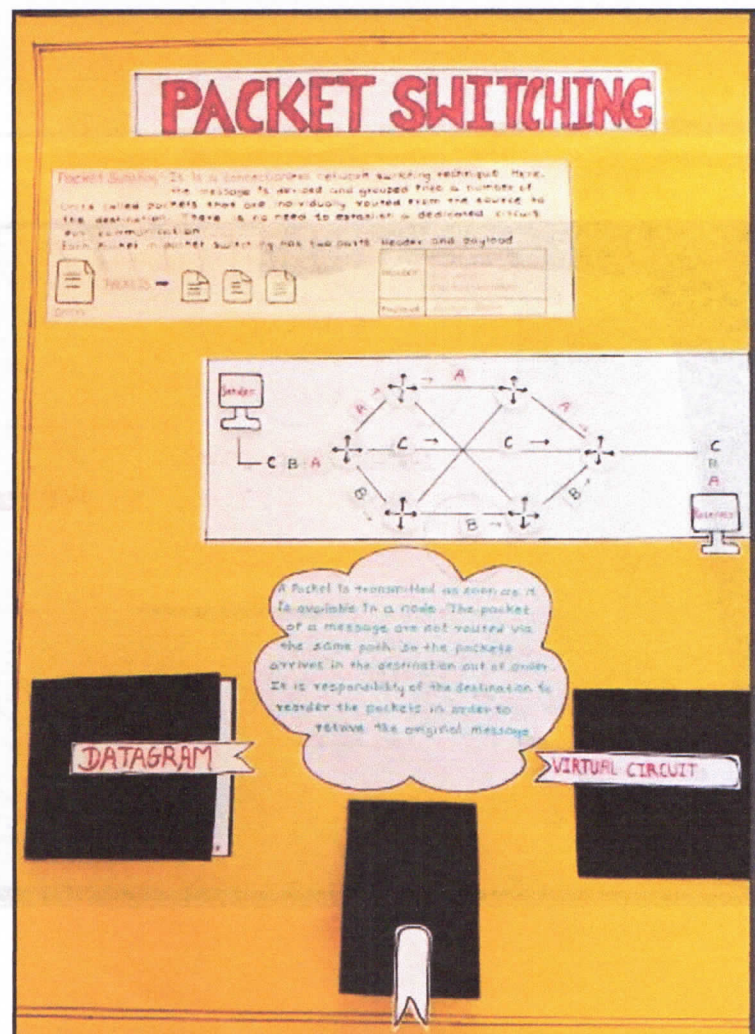
Name of the Activity: **Jigsaw Activityy (Unit-III)**





Activity No:07

Name of the Activity: **Poster Presentation Activity (Unit-II)**

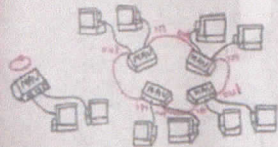


Evolution of LAN Technologies from Token Rings to Wi-Fi

THE LAN REVOLUTION: A WIRED AND WIRELESS JOURNEY

TOKEN RING (1980s)

A Foundational wired LAN technology where computers take turns transmitting data using a special "token" that circulates on the network ensuring orderly data flow.

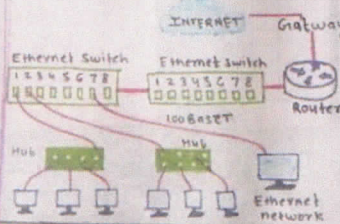


Token Ring MAN
Key Points

Feature	Description
Ordered data flow	Ensures efficient data transmission by avoiding collisions.
Slow speed	Limited by the token passing mechanism.
Complex Setup	Requires more configuration compared to Ethernet.
Single point failure	A failure in the token or ring can disrupt the entire network.

ETHERNET (1970s)

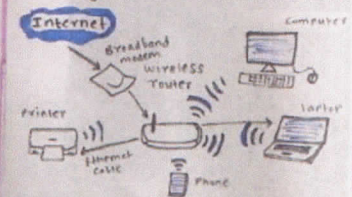
The Dominant Wired LAN technology. Uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD). Computers check for free space before transmitting data and handle collisions by retrying randomly.



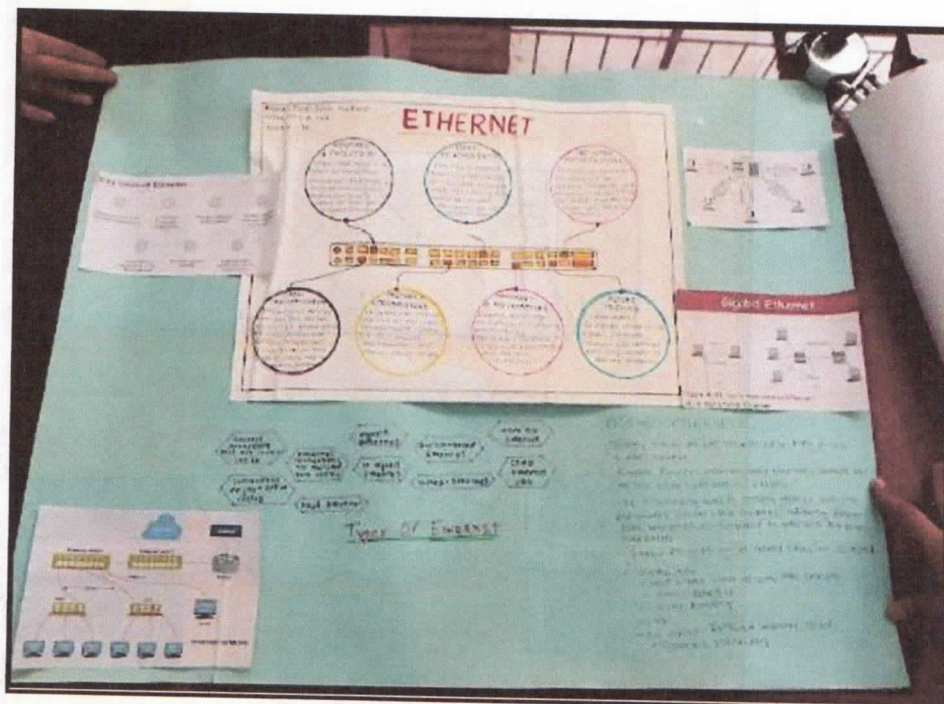
Feature	Description
Simplicity	Easier to set up and manage compared to token ring.
Cost effectiveness	More affordable to implement and maintain.
Faster speeds with advancements	Achieved significant speed improvements over time.
Potential network due to collisions	Collisions can occur when multiple devices transmit simultaneously, reducing overall speed.

Wi-Fi (1990s)

Wi-Fi is a family of wireless network protocols based on the IEEE 802.11 family of standards which are commonly used for local area networking of devices and internet access, allowing nearby digital devices to exchange data by radio waves.



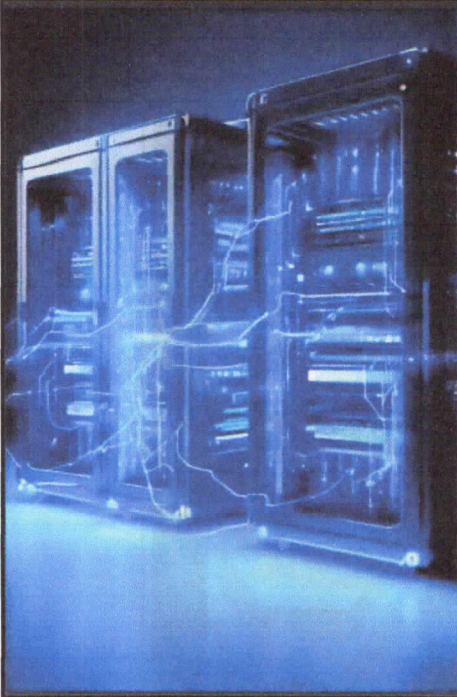
Feature	Description
Mobility	Enables devices to connect to the network without wires.
Easy Setup	Relatively simple to configure compared to wired networks.
Convenience	Provides greater flexibility and freedom of movement of users.
Security concerns	More susceptible to security breaches compared to wired networks.





Activity No: 08

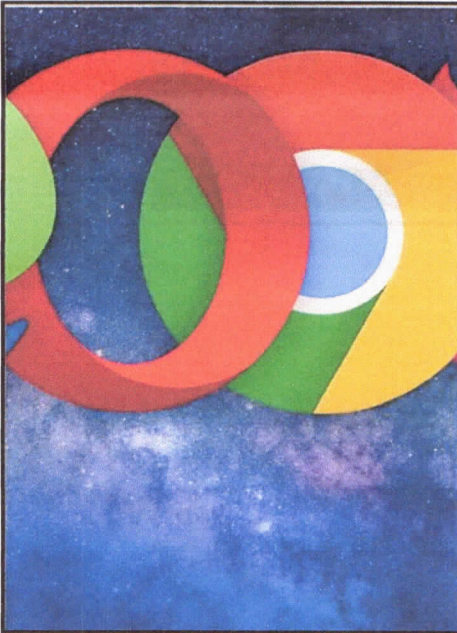
Name of the Activity: **PPT Presentation Activity (Unit-V)**



 Dr. Rajesh Chakrabarti
KARMAVEER BHAURAO PATIL COLLEGE OF ENGINEERING, SATARA
Approved By AICTE, New Delhi, Govt. of Maharashtra (DTE: EN-570), Affiliated to DRTU, Lonere
Accredited With B++ Grade by NAAC 

Introduction to FTP (File Transfer Protocol)

FTP is a standard network protocol used for transferring files between computers over the internet. It provides a secure and efficient way to upload, download, and manage files on remote servers, making it a crucial tool for web development, content management, and file sharing.



Introduction to HTTP

HTTP (Hypertext Transfer Protocol) is the foundation of data communication on the World Wide Web, enabling the exchange of web pages and other digital content.

●

◀ **Topic Name :-**

POP (POST OFFICE PROTOCOL)

◀ **Guide Name :-**

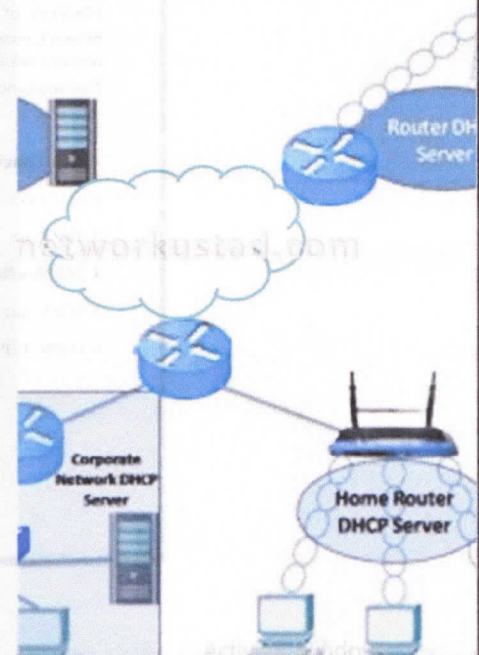
DR. SHABINA MODI

◀ **Student Name :-**

POONAM MANE (TY B - CSE)

DHCP: Dynamic Host Configuration Protocol

DHCP is a fundamental protocol in computer networking that dynamically assigns IP addresses and other configuration parameters to devices on a network. It simplifies network administration and ensures efficient utilization of IP addresses.



Activity No: 08

Name of the Activity: Case Study (Unit-V)

Case Study

Tutorial No.4

Name : Aayan Javid Sayyad

Roll No. 114 Division : B (T.Y.C.S.E.)

PRN No. 2162701242011

Course Name : Computer Networks

Course Guide: Prof. Shabina Modi

Case Study: Congestion Control Algorithms

Introduction :

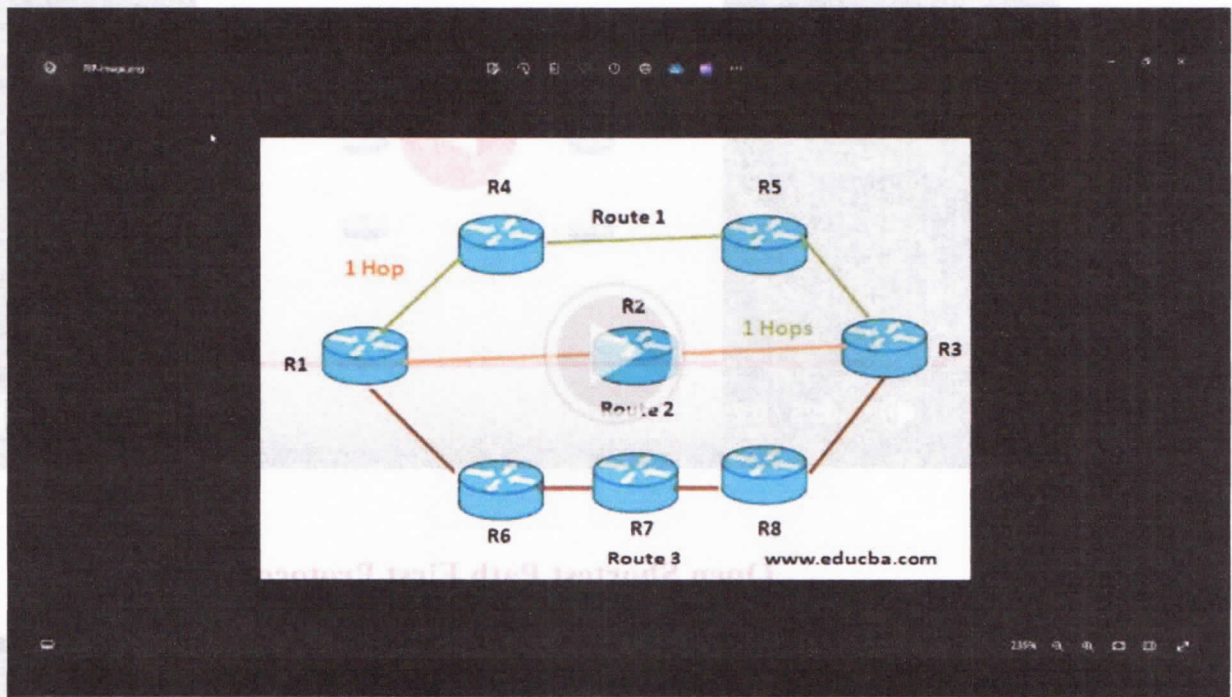
Congestion control algorithms are essential for maintaining the stability and efficiency of network communication. They manage traffic entry into the network, ensuring that network congestion is minimized and data transmission remains reliable. A well-known example of congestion control in practice is the Transmission Control Protocol (TCP) in computer networks.

➤ Key Congestion Control Algorithms

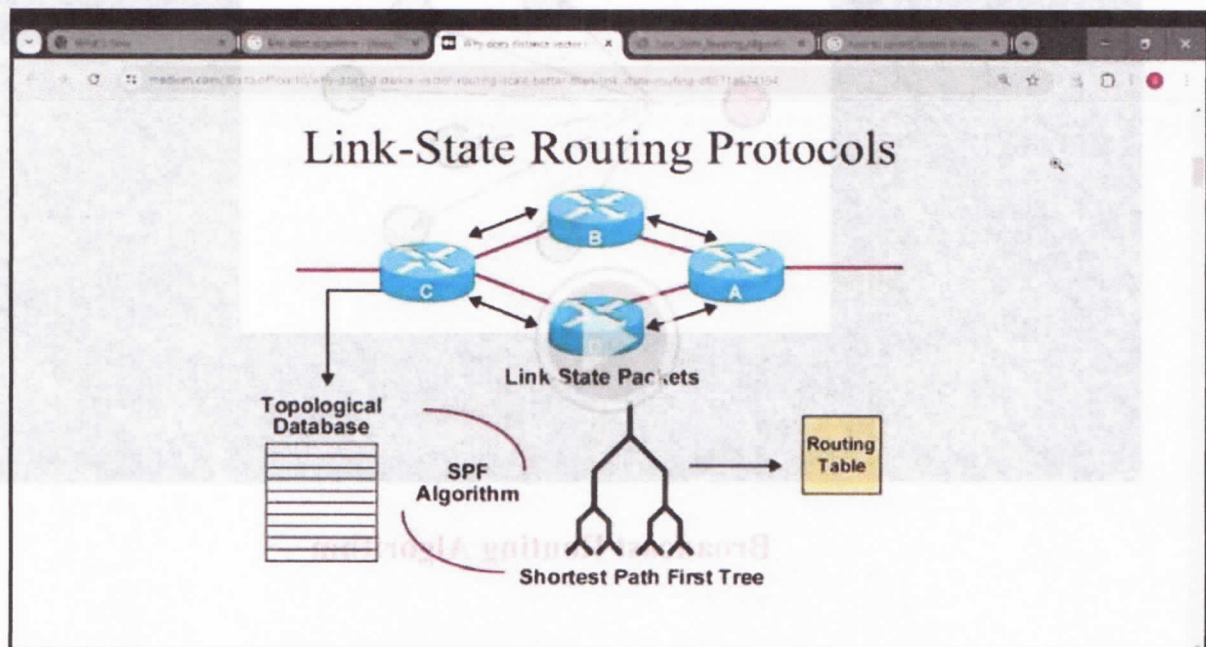
1. TCP Tahoe
2. TCP Reno
3. TCP NewReno
4. TCP Vegas
5. CUBIC TCP

Activity No: 09

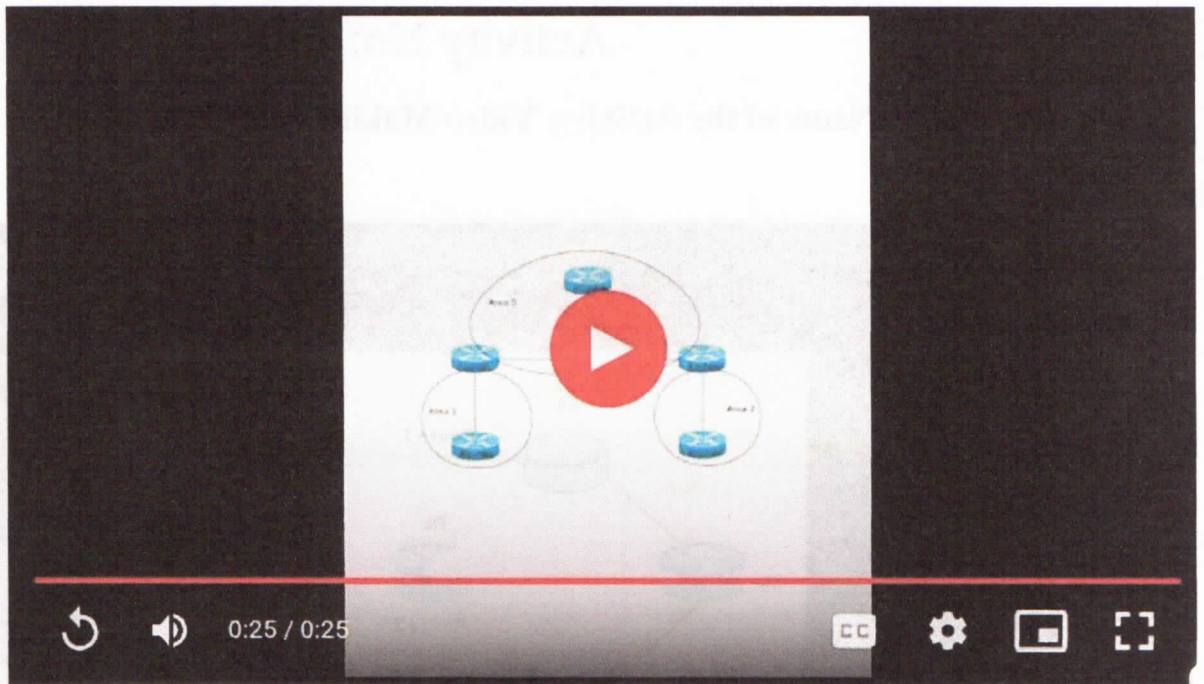
Name of the Activity: **Video Making Activity (Unit-IV)**



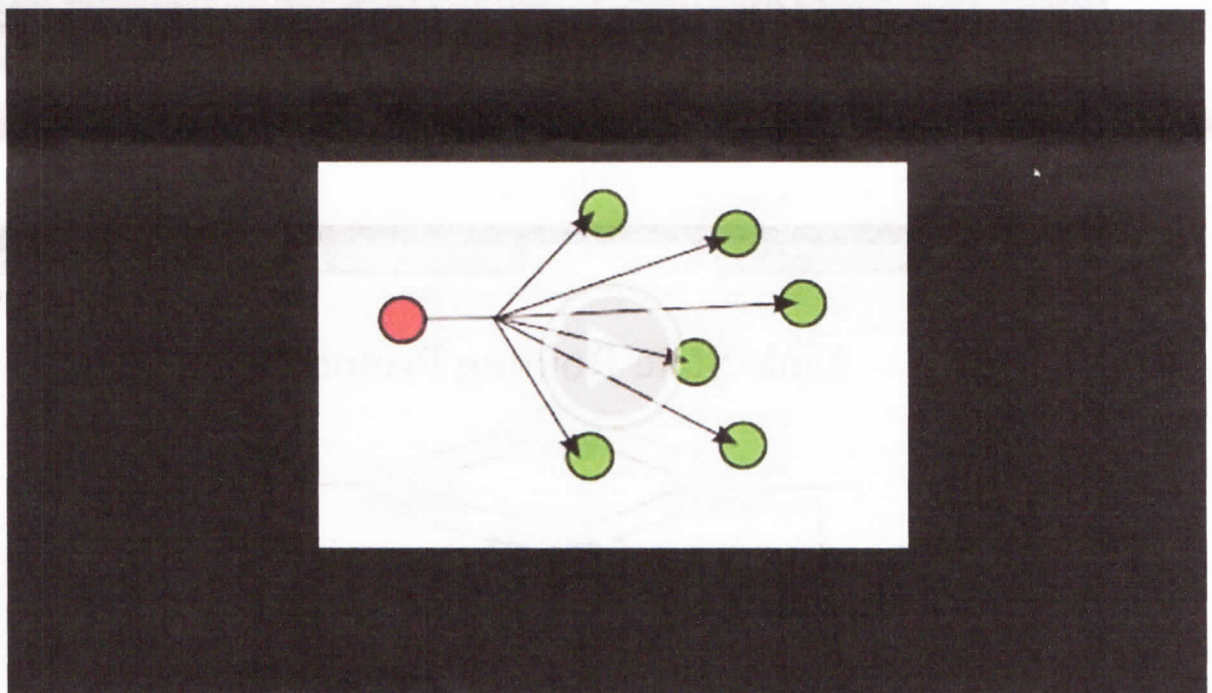
RIP Protocol



Routing Algorithm Video



Open Shortest Path First Protocol



Broadcast Routing Algorithm

Activity No: 10

Name of the Activity: **Industry Visit**



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Industrial Visit Report

Computer Science & Engg.
Department

Purpose of Industrial Visit:

Industrial visits are recognized as a strategic teaching method, primarily because they enable students to understand concepts practically through direct interaction, observation of working methods, and exposure to employment practices. These visits offer significant academic benefits by providing students with a firsthand experience of the professional environment. The main objective of industrial visits is to familiarize students with the real-world working environment, thus enhancing their understanding of industrial practices.

Through these visits, students gain valuable insights into the latest technologies and concepts, which is crucial for their technological proficiency. Additionally, industrial visits facilitate the development of professional relationships with companies, which can be beneficial for future employment opportunities. By experiencing the industry setting, students can integrate theoretical knowledge with practical application, thereby enriching their overall learning experience. This practical exposure motivates students to focus more on career opportunities and helps them better prepare for the job market.

Details of Industrial Visit:

Visit to First Venue :- Veetrag Computers Private Limited, Sangli (Agro Industries)

Owner of the Agro industries : Mr. Praveen Naik

Date of Visit: 17.05.2024

Day: Friday

Time: 9:00 pm to 4:30 pm

Visit to second Venue :- Chitale Industries Private Limited in Bhikewadi Sangli

Date of Visit: 17.05.2024

Day: Friday

Time: 6:00 pm to 8:00 pm

Faculty during visit: Dr. Shabina Modi, Mrs. Tarannum Shaikh, Mr. Ganesh Dangat and Mr. Anuradh Kohliwagar

Class during Visit: 3rd year, Computer Science & Engineering

Total Students: 91

Courses for which Visit is arranged: Computer Networks

References required:

Request letter sent to company: Request Mail send

Permission Letter from company: Received mail

Request letter to Sanstha

Permission letter from Sanstha

Any other letter: Permission letter by HOD & Principal

2. Chitale industries



Chitale Industries Pvt.Ltd.



Chitale Industries Pvt.Ltd.

1. Dr. Shabina Modi
2. Mrs. Tarannum Shaikh
3. Mr. Ganesh Dangat
4. Mr. Anuradh Kohliwagar

Industrial Visit Coordinators

Head of the Department

Industrial Visit Report Made By : Aayan Javid Sayyad (TY -B)

Roll no : 114 PRN: 2162701242011

Activity No: 11

Name of the Activity: **Computer Networks Course Completion (online)**

Additional



Certificate of Course Completion

Arati Pawar

has successfully achieved student level credential for completing the Networking Basics course.

The student was able to proficiently:

- Explain important concepts in network communication, network types, components, and connections.
- Explain the importance of standards and protocols in network communications.
- Explain how communication occurs on Ethernet networks.
- Explain the features of an IP address and IPv4 addresses are used in network communication.
- Explain features of IPv6 addressing.
- Explain how routers connect networks together.
- Use various tools to test and troubleshoot network connectivity.
- Configure an integrated wireless router and wireless client to connect securely to the internet.



Scan to Verify

May 09, 2024

Laura Quintana

Laura Quintana
Vice President and General Manager
Cisco Networking Academy



CERTIFICATE OF COMPLETION

Presented to

PARTH VIVEK MUCHANDI

For successfully completing a free online course
Basics of Computer Networking

Provided by
Great Learning Academy

(On May 2024)

Dr. Shabina Sayyed
Course Coordinator



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Computer Science & Engineering



Academic Year 2023-2024

Class:- Final Year

Semester-VII

Name of the Course: Cloud Computing

Course Code: BTCOE702

Innovative Pedagogical Activities

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2.	Mind Map Activity	1 ,2 & 3	Offline/ Google Classroom	74
3.	Mind Map Activity	1,2 & 3	Offline/ Google Classroom	74
4.	Poster Presentation Activity	4	Offline/ Google Classroom	74
5.	Case Study activity	5	Offline/ Google Classroom	74

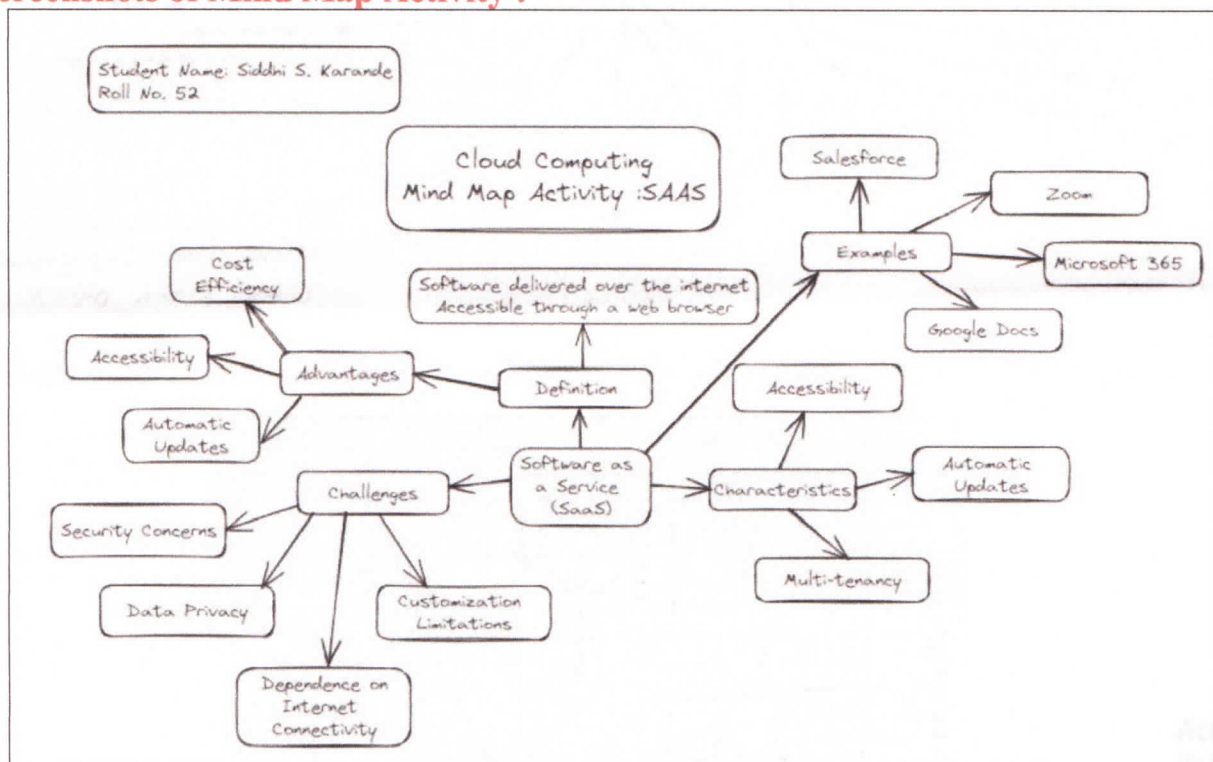
Innovative Tools: Google Classroom as a LMS Tools, NPTEL Videos Link , PPT's.

Activity No: 03

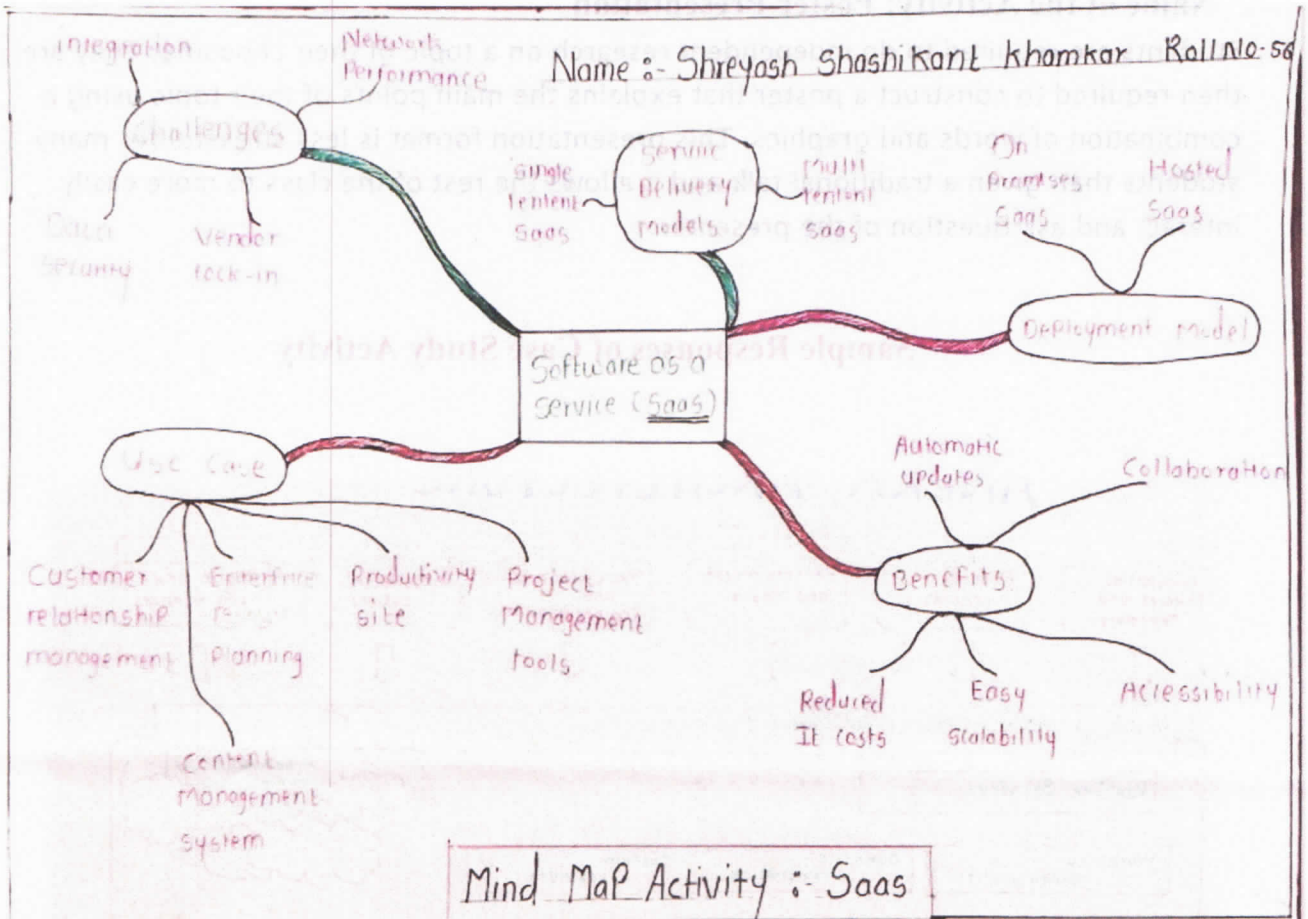
Name of the Activity: Mind Map Activity

Mind Map Activity: 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. It is an creative activity where the technical concepts can be explained and demonstrated in simplified fashion. A map or drawing or visual image is used to imagine the conceptual scenario of any topic with the scenario faced in the real world. Number of analogies can be used to create a mind map of any technical concept.

Screenshots of Mind Map Activity :



Name of Student: Sidhi Karande Roll No: 52

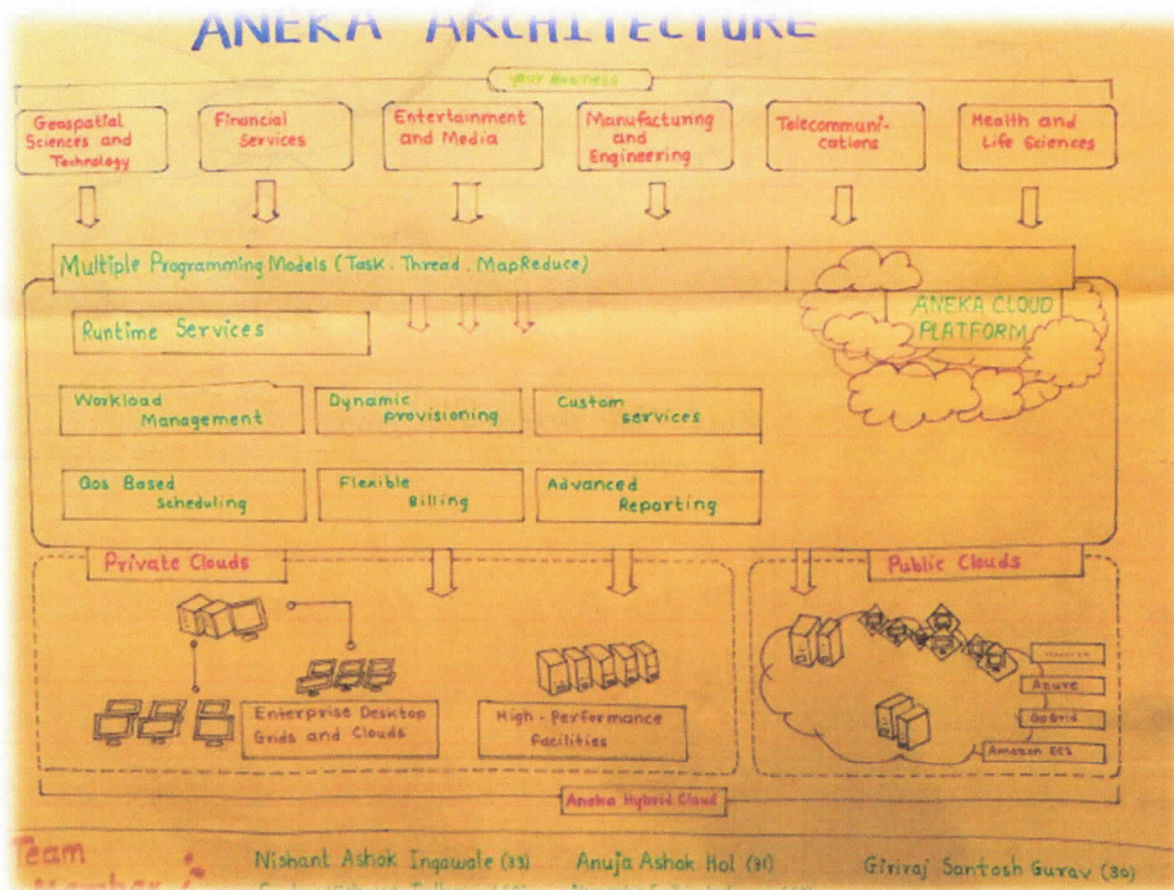


Activity No: 04

Name of the Activity: Poster Presentation

Students are required to do independent research on a topic of their choosing. They are then required to construct a poster that explains the main points of their topic using a combination of words and graphics. This presentation format is less stressful for many students than given a traditional talk and it allows the rest of the class to more easily interact and ask question of the presenter.

Sample Responses of Case Study Activity



ANeka ARCHITECTURE

Aneka is:

- Aneka is a software platform for developing cloud applications.
- In Aneka, cloud applications are executed.
- Aneka is a cloud-based solution for cloud computing.
- Aneka is a cloud infrastructure provider.
- Aneka can be deployed on a variety of hardware, in the cloud, or on a virtual cloud infrastructure.

Aneka and cloud:

- Aneka fits into the cloud architecture at the platform layer.
- This means that it provides a programming-based interface for developing distributed applications and a virtual execution environment in which the applications developed according to the published APIs can run.

Aneka Architecture:

The Aneka architecture is built on a cloud infrastructure, which is represented by a stack of layers:

- PAL (Platform Abstraction Layer):** Provides a uniform and platform-independent interface for accessing the hosting platform.
- Core infrastructure:** Provides a management interface for accessing the hosting platform.
- Hosted applications:** Provides a management interface for accessing the hosting platform.

Fabric services:

- Fabric services define the lowest level of the software stack representing the Aneka Container.
- So fabric services directly interface with the hosting resource and are responsible for low-level operations.
- Fabric services contain:
 - The resource provisioning subsystem.
 - The hardware profiling services.

Foundation services:

- Foundation services provides runtime support for execution services and applications.
- Directory and Membership.
- Resource reservation.
- Storage management.
- The current release of Aneka provides a storage implementation based on the File Transfer Protocol (FTP) service.
- Licensing, accounting, and pricing.

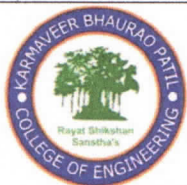
Execution services:

- Execution services identify the set of services that are directly involved in the execution of distributed applications on the Aneka Cloud.
- Execution services contain:
 - Scheduling Service:** It is responsible for coordinating and dispatching the collection of jobs generated by applications to the compute nodes.
 - Extension Service:** It is in charge of managing all the data required for execution, monitoring the progress of the job, and collecting the results.

Transversal services:

- Termination:**
 - The termination layer provides a complete solution for recording the status of the Cloud.
 - All the applications running in the Cloud and their status.
 - The topology, information of the Cloud and the current execution status.
- Security:**
 - The implementation relies on cloud providers.
 - It is possible to run Aneka on different security infrastructures according to specific requirements of the Cloud.
 - Third parties can set up their own security providers by implementing the interfaces defined in the Aneka security APIs.

Group members: 1.Shriyasha jagadale 2. Priti shitole 3.Sakhi gosavi 4.Rohini kumbhar



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Computer Science & Engineering



Rayat Shikshan Sanstha's

Karmaveer Bhaurao Patil College of Engineering, Satara

Case Study Report

Class: Btech CSE (A)

Semester: VII

Academic Year: 2023-24

Course: Cloud Computing

Course Code: BTCOE702

Group Members:

Name	Roll No
Vikrant Bhadange	06
Atharv Bagade	03
Shreyash Khambkar	56
Saurabh Gole	143
Rajvardhan Patil	149

1. Introduction:

Storage services have become an essential element in today's digital world. With the ever-increasing amount of data being generated and stored, businesses and individuals alike are constantly seeking reliable and efficient solutions to manage their data. This report provides an overview of the storage services landscape, highlighting key trends, emerging technologies, and the different types of storage solutions available.

2. Market Trends:

Cloud Storage Dominates: The cloud storage market is experiencing explosive growth, driven by its scalability, cost-effectiveness, and ease of deployment. Cloud giants like Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) are leading the market with comprehensive offerings.

Storage as a Service (STaaS): STaaS models are gaining traction, allowing organizations to pay for storage resources as they need them, eliminating upfront capital investments and offering greater flexibility.

Data Locality and Edge Computing: Data locality and edge computing are becoming increasingly important as organizations strive to reduce latency and improve data accessibility. This is driving the demand for distributed storage solutions and regional data centers.

Emerging Technologies: Emerging technologies like NVMe over Fabrics (NVMe-oF) and Software-Defined Storage (SDS) are poised to revolutionize the storage landscape, offering greater performance, scalability, and automation.

2. Types of Storage Services:

- **Object Storage:** Ideal for storing large, unstructured data like images, videos, and archival data.
 - **Block Storage:** Provides block-level access to storage, similar to traditional hard drives, making it suitable for database applications and virtual machines.
 - **File Storage:** Offers a hierarchical file system for storing and managing files, similar to local file systems.
 - **Archiving Storage:** Designed for long-term data retention and accessibility, often with lower storage costs.
- Backup and Disaster Recovery (BDR):** Provides solutions for backing up data and recovering it in case of disasters or data loss.



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Rayat Shikshan Sanstha's
"Karmaveer Bhaurao Patil College of Engineering, Satara
Computer Science and Engineering Department

Academic Year: 2023-24
Semester-I

**Case Study for Cloud Based application
Development on Aws**

Names of Project group members :-

- 1) Kamble Pratiksha (151)
- 2) Katkar Ashish (54)
- 3) Bhingare Mitali (07)
- 4) Yadav Vaibhavi (13)
- 5) Kadam Vaishnavi (47)

Name of the Guide:- Dr.Shabina Modi

1. Problem Statement:

Client XYZ, a rapidly growing e-commerce platform, faced scalability challenges with their existing on-premise infrastructure. As their user base expanded, the infrastructure struggled to handle increased traffic during peak times, leading to performance issues and downtime. Additionally, the client sought improved flexibility and cost-effectiveness in managing their IT resources.

Dr. Shabina Modi
Course Coordinator



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Computer Science & Engineering

Objectives:

1. Scalability: Develop a scalable solution to accommodate the growing user base and handle peak loads without compromising performance.
2. Reliability: Ensure high availability and minimize downtime to enhance the overall user experience and maintain customer trust.
3. Flexibility: Provide a flexible infrastructure that allows easy adaptation to changing business requirements & enables rapid development deployment.
4. Cost Optimization: Optimize resource utilization and reduce overall operational costs by leveraging cloud-based services effectively.

Abstract:

This case study explores the development of an e-commerce application leveraging cloud computing services, specifically on Amazon Web Services (AWS). The study delves into the architectural design, key services utilized, and the benefits gained from employing cloud infrastructure.

1. Introduction:

- Brief overview of the e-commerce application.
- Rationale for choosing cloud computing for application development.

2. Architectural Design:

- Microservices architecture for scalability.
- Use of AWS Elastic Beanstalk for easy deployment and management.

3. Cloud Services Utilized:

- Amazon S3 (Simple Storage Service): Storage for images, product data, and user uploads.
- Amazon RDS (Relational Database Service): Database backend for storing transactional data.
- Amazon EC2 (Elastic Compute Cloud): Hosting application logic and handling server-side processing.
- Amazon SQS (Simple Queue Service): Managing asynchronous tasks for order processing.
- Amazon Cognito: Secure authentication and user management.

Dr. Shabina Modi
Course Coordinator



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Basic Sciences & Humanities Department

Year 2023 – 2024

Sem – II

Course: Engineering Mechanics (BTES203)

Course Coordinator: Mr. A. B. Kadam

Innovative Teaching - Learning Activities

Objectives :-

- i. It provides rich and varied experiences to the students, thereby building their knowledge, boosting creativity skills and increasing cognitive skills.
- ii. Improve students confidence, using their resources, and self-directed work.
- iii. Improve students interest in subjects, learning satisfaction.

Outcomes :-

- i. Student will be able to learn critical thinking skills.
- ii. Student will be able to improve learning and retention of information

Innovative Activity Details :-

Sr. No.	Name of Activity	Unit	Platform	No. of students completed
1.	Project Based Learning	All Units	Offline	48
2.	Crossword Puzzle	All Units	Offline in class	67
3.	Kahoot Quiz	4 & 5	Online	40



Activity :-Crossword Puzzle

Sample Answer Sheets:-

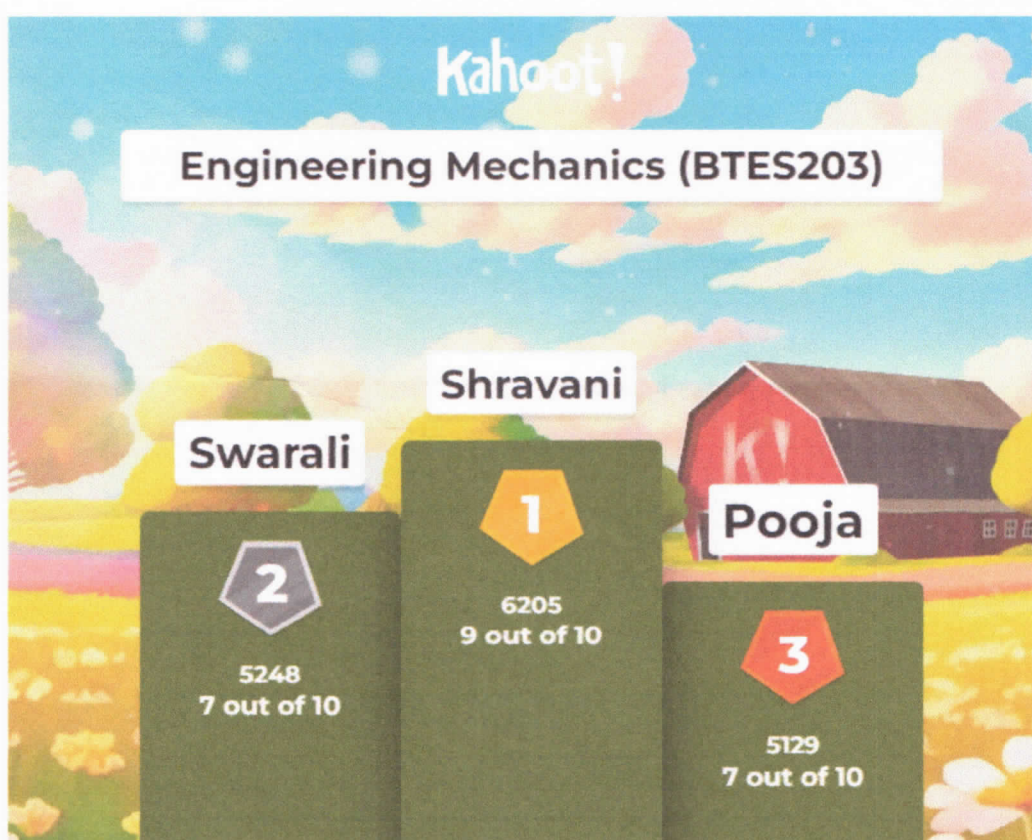


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Karmaveer Bhaurao Patil College of Engineering, Satara

Basic Sciences & Humanities Department

Activity :-Kahoot Quiz

This activity was conducted in classroom on Kahoot website. Students were joined the quiz by Game Pin code. All questions display on screen and students have 20 seconds to answer each question. After completion of quiz winners were displayed on screen.




Course Coordinator
Mr. A.B. Kadam



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Basic Sciences & Humanities Department

Year 2023 – 2024

Sem – II

Course: Energy and Environment Engineering (BTES205)

Course Co-ordinator: Mr. A.B. Kadam

Innovative Teaching - Learning Activities

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Innovative Activity Details :-

Sr. No.	Name of Activity	Unit	Platform	No. of students completed
1.	Project Based Learning	All units	Offline	136
2.	Crossword Puzzle	All Units	Offline in class	126
3.	Kahoot Quiz	4 & 5	Online	110

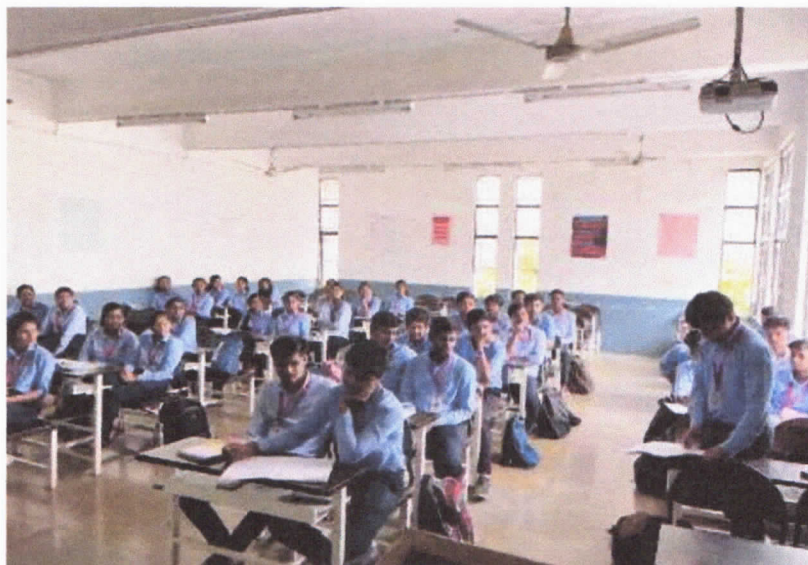
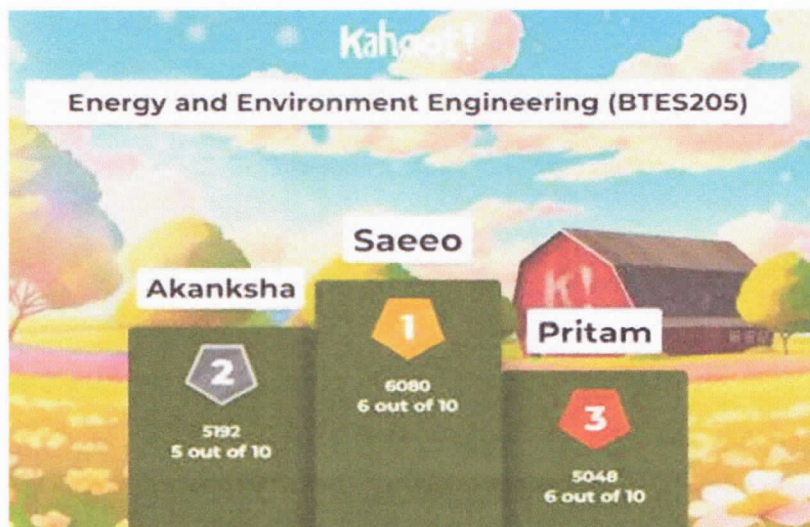


Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Basic Sciences & Humanities Department

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A.B. Kadam

Course Coordinator
Mr. A.B.Kadam



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Basic Sciences & Humanities Department

Year 2023 – 2024

Sem – II

Course: Engineering Mechanics (BTES203)

Course Coordinator: Mr. A. B. Kadam

Innovative Teaching - Learning Activities

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Basic Sciences & Humanities Department

Activity :- Crossword Puzzle

This activity was conducted in classroom & submit hardcopy.

Sample Answer Sheets:-

Crossword - 1

Across:-

- 1) Material point without dimensions but contains definite amount of matter.
- 3) The forces whose line of action are parallel to each other are...
- 5) Force has magnitude of...

Down:-

- 2) Two equal unlike parallel forces form...
- 4) The process of splitting up of given forces into a number of component without changing its effect on body is called...

1. P A R T I C L E

2. U

3. P A R A L L E L

4. L E

5. E S

6. O L

7. U

8. D I R E C T I O N

9. I

10. O

11. N

Crossword - 2

Across

1. State of rest or...
3. Clockwise moment is (sign)...
5. The members whose length increases are subjected to...

Down

2. Lami's theorem is applicable for ... or more forces
4. Structure used for roding...

1. E Q U I L I B R I U M

2. T

3. P O S I T I V E

4. R

5. U

6. S

7. S T E N S I O N



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Crossword - 3

Across :-

- 1) Branch of dynamics related to motion considering force causing motion.
- 2) Motion in which all the points of body are moving uniformly in single direction.
- 3) According to Newton's second law an unbalanced force is directly proportional to the rate of change of ---

Down

- 1) Principle related to dynamics equilibrium.
- 2) Unit of angular displacement.

K I N E M A T I C S

T R A N S L A T I O N

M A G N I T U D E

Crossword - 4

- 1) Motion of straight line /
- 2) Branch of mechanics which deals with bodies in motion.
- 3) Motion affecting each others position is called --- motion.
- 2) Distance / Time
- 4) Rate of change of momentum

R e c t i l i n e a r

K i n e m a t i c s

d e p e n d e n t

Crossword - 5

* Across :-

- 1) When two bodies collide with each other during a very short interval of time causing impulsive force to be exerted betⁿ the bodies is known as ---
- 2) Product of force & displacement
- 3) Force/shock developed betⁿ two bodies during collision is called

Down :-

- 1) Rate of doing work
- 2) Ratio of final to initial relative speed betⁿ two object after they collide is

I M P U L S E

W O R K

I M P A C T

T U T I O N

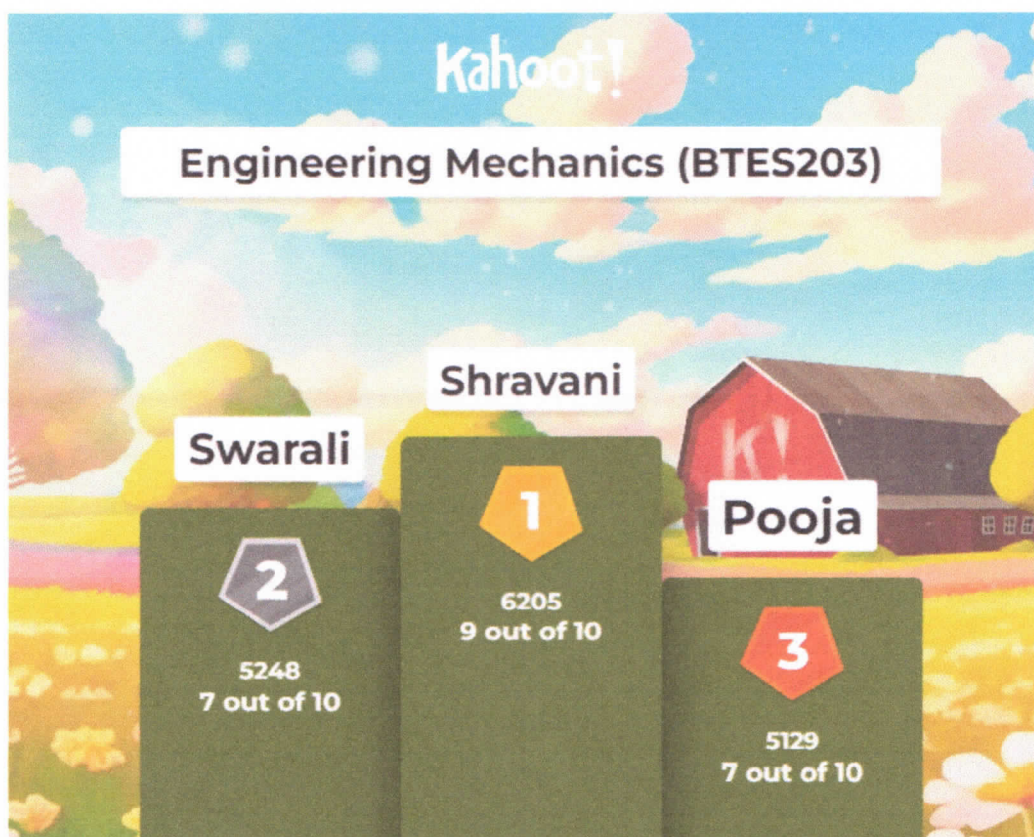


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Course Coordinator
Mr. A.B. Kadam

Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Electronics & Telecommunication Engineering

Academic Year: 2023-24

Course/Subject: Electronic Devices and Circuits

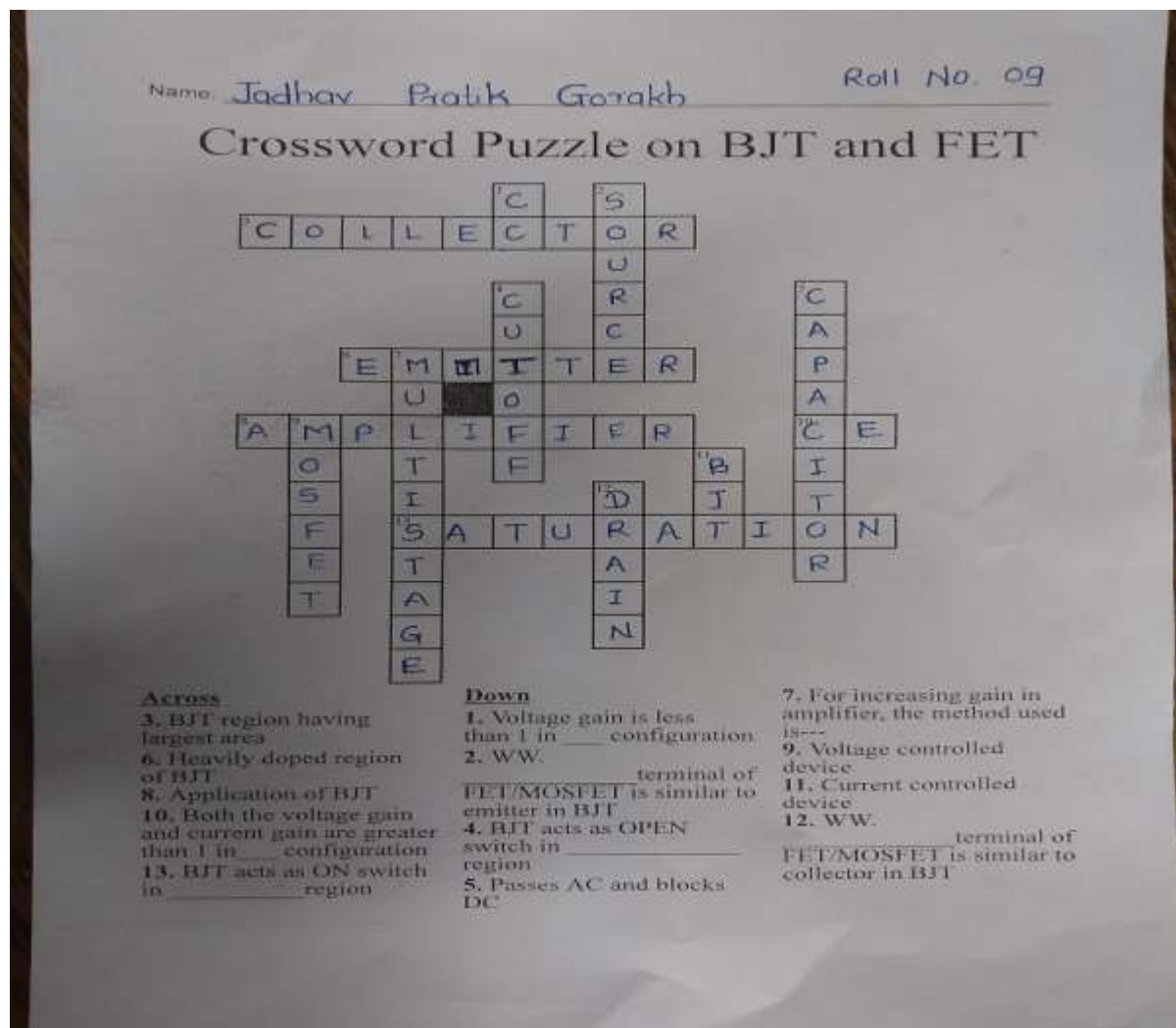
Course Code: BTETC302

Class: S.Y. E & TC

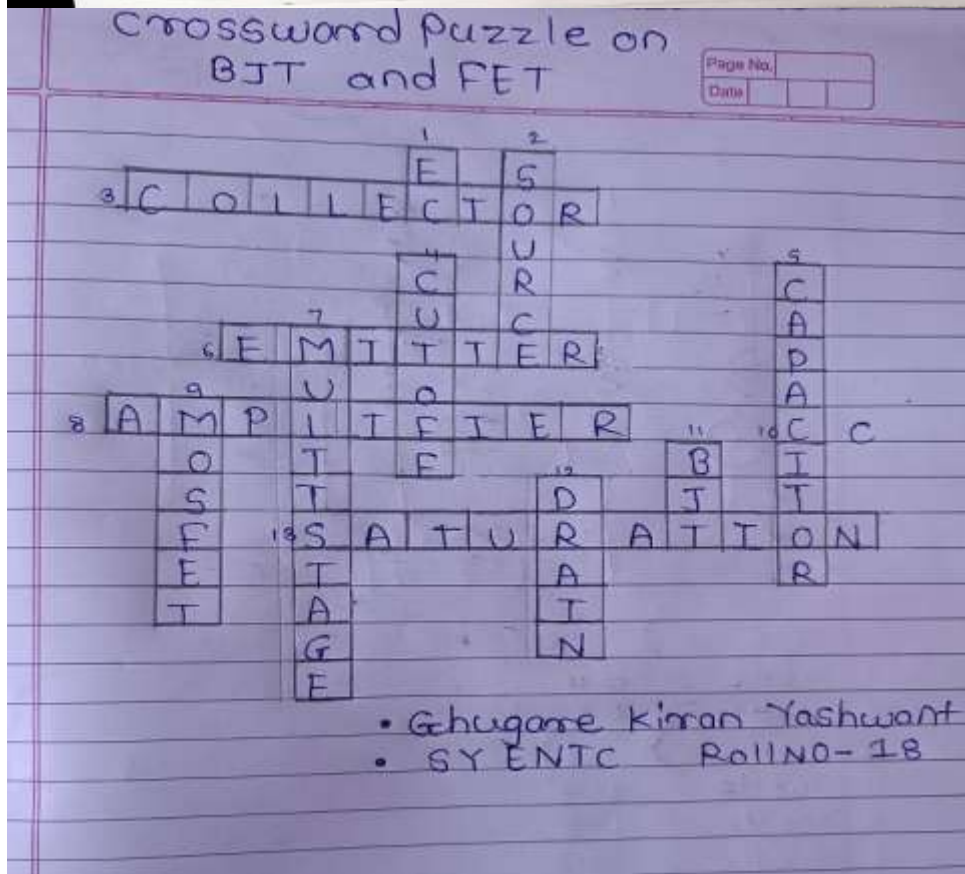
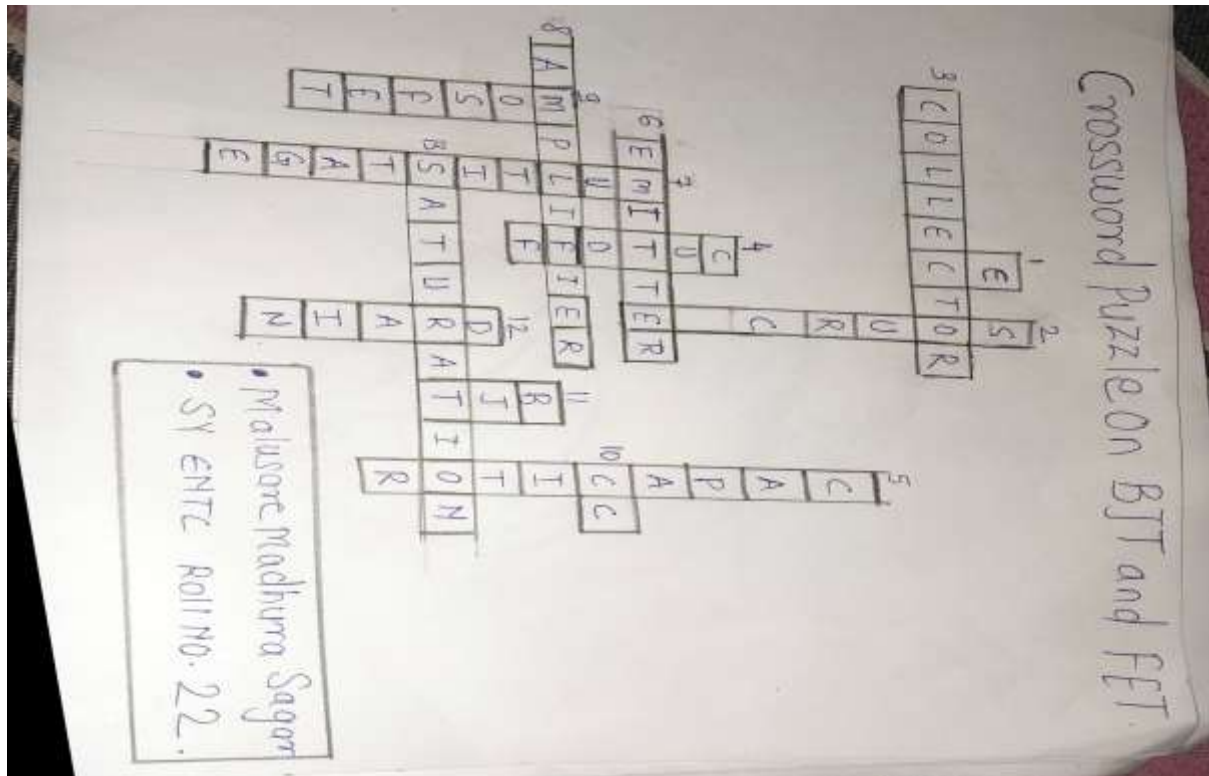
Innovative Pedagogical Activities

Crossword puzzles:

Crossword puzzles provide expansion of vocabulary, stimulate thinking capacity, boost confidence, and fasten up the learning capacity. Crossword puzzle, as an innovative teaching module, was introduced in our set up for wave propagation study. Student's perceptions of the use of crossword puzzle, as an active learning instructional tool, were gathered by using a pre-validated questionnaire. A majority of the student's found that the crossword puzzle enhanced their learning of the topic. It promotes enhancement of cognitive/mental skill as well as attitude of the learner. This tool promotes self-learning, provides a recreational break during the traditional lecture class, and allows the students to review the lecture material as well as examination. Thus, crossword puzzles are a creative tool whose proper implementation definitely has positive impact on the student's skills and performances.



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Electronics & Telecommunication Engineering



Dr. Sunita Mane
Course Coordinator

Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Electronics & Telecommunication Engineering

Academic Year: 2023-24

Course/Subject: Antennas and Wave Propagation

Course Code: BTETC601

Class: T.Y. E & TC

Innovative Pedagogical Activities

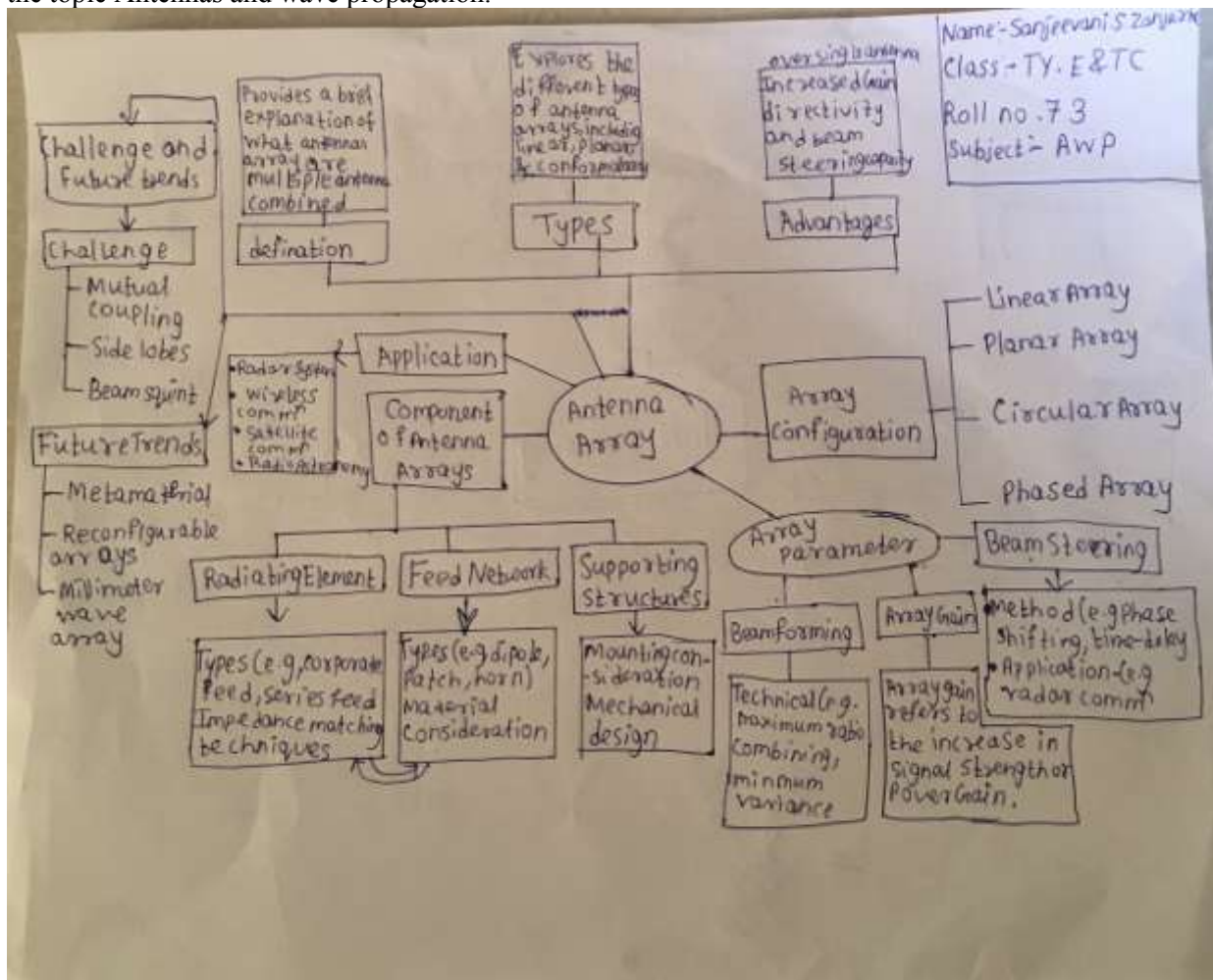
Mind map:

A mind map is a brainstorming technique used to visually organize information into a hierarchy. They feature one main idea as the central point of the diagram, with subtopics branching out and connecting to supporting ideas.

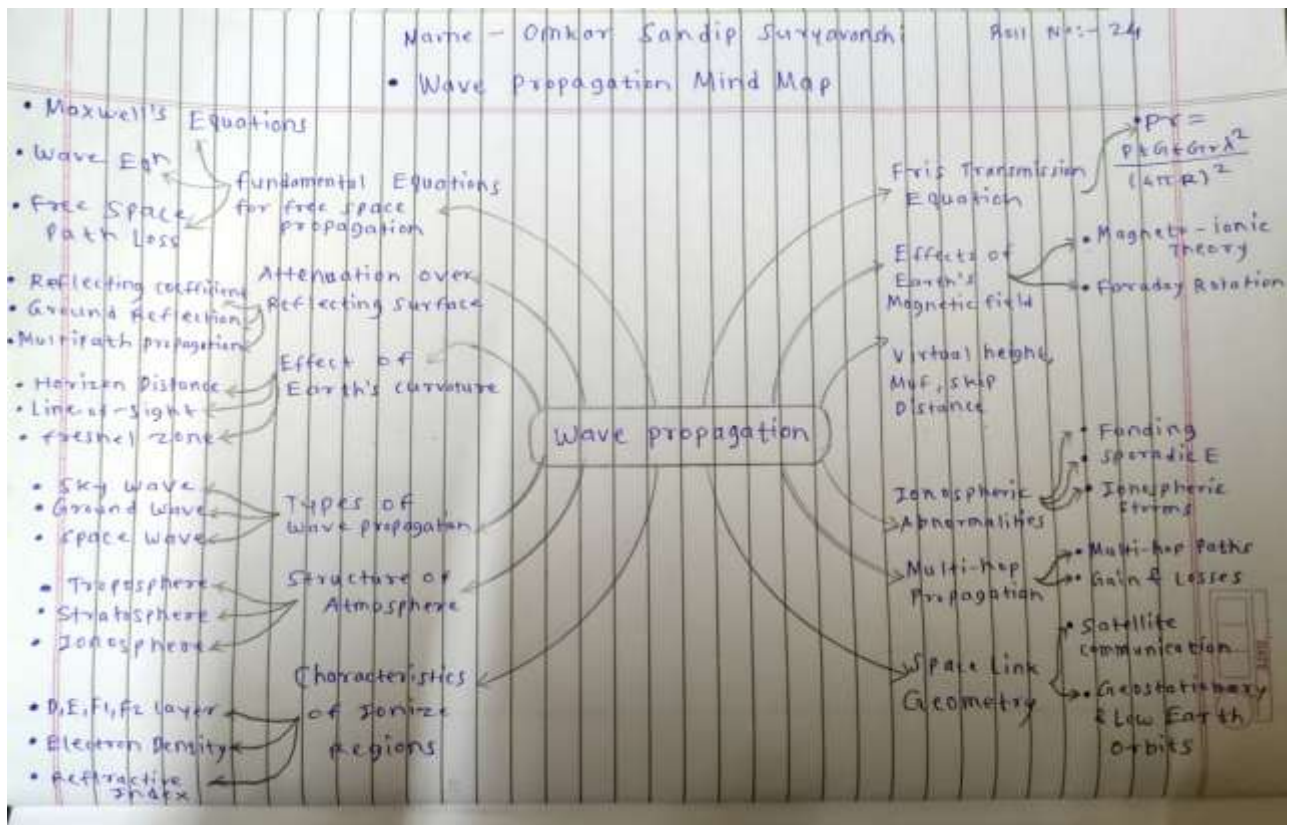
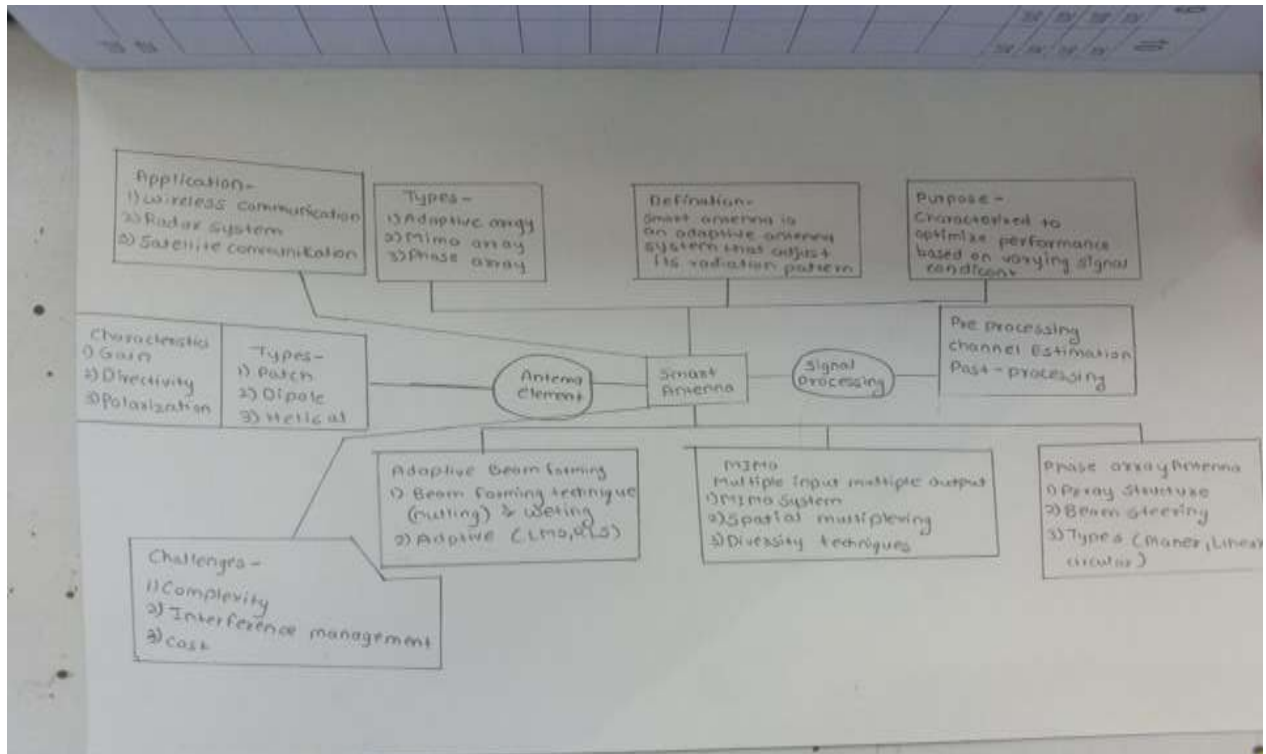
Mind map diagrams follow a hierarchical structure where the most important ideas are the closest to the center, and each additional tier rolls up to the one before it. This structure helps you see a broad overview of the concept, understand its complexities and connections, and make decisions effectively.

What makes mind maps so powerful is not just the diagrams themselves, but also the process that goes into creating them. The inside-out structure makes it easy to get all your thoughts and ideas down in one place and draw connections between them. They encourage lateral thinking, pushing you to explore and investigate a topic from every angle.

A good Mind Map shows the "shape" of the subject, the relative importance of individual points, and the ways in which facts relate to one another. Mind map activity is assigned to students for the topic Antennas and wave propagation.



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara
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Dr. Sunita Mane
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Karmaveer Bhaurao Patil College of Engineering, Satara
Department of Electronics & Telecommunication Engineering

Academic Year: 2023-24

Course/Subject: Antennas and Wave Propagation Course Code: BTETC601

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Innovative Pedagogical Activities

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Name: Aftab Arif Faras Roll No. 17

Wave Propagation

Across

4. relative permittivity of the ionosphere at radio frequency is ____ than unity
5. tangential electric field for the perfect conductor is
6. ground wave propagation is useful for ____ communication
7. frequencies used in scatter transmission
9. frequencies used in tropospheric scattering
10. propagation in VHF band is by
12. the phenomenon of microwave signals follow the curvature of earth is called
13. D-layer disappears at ____
14. absorption of electromagnetic waves by the atmosphere depends on

Down

1. MUF and skip distance occur in which type of propagation
2. wave remains unaffected during day and night
3. when wave passes from air into ionosphere
4. propagation used in television broadcasting
8. which layer does not exist during day time
11. when an electromagnetic wave is moving in free space, it suffers from ____

Rayat Shikshan Sanstha's
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Department of Electronics & Telecommunication Engineering

Name: Omkar Sandip Suryavanshi Roll No. 24

Wave Propagation

Across

4. relative permittivity of the ionosphere at radio frequency is _____ than unity
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Dr. Sunita Mane
Course Coordinator