SVKM's Institute of Technology, Dhule
Department of Computer Engineering
Academic Year :2021-22
Pedagogy : Innovative Practices

Sr. No	Name of faculty	Innovative Practice	Subject	Topic
1	Bhushan Nandwalkar	Virtual Lab	Database Systems	ER modeling from problem statement
2	Ashish Awate	Crossword Puzzle	Machine Learning	Machine Learning Jargons
3	Umakant Mandawkar	Case Study	Introduction to Research	Case Study A Review of Research on Brain Tumor Detection Techniques
4	Mayuri Kulkarni	Simulation	Blockchain Technology	Basics of Blockchain
5	Dr. Makarand Shahade	Role Play	Distributed System	IPC using Message Passing
6	Ashish Awate	Mind-games	Discrete Mathematics	The Bridges of Königsberg
7	Mayuri Kulkarni	Virtual Labs	Data Structutres	Binary Search Tree
8	Mayuri Kulkarni	Flip Class Room	Data Structures	Breadth First Search
9	Ashish Awate	Crossword Puzzle	Compiler Design	Phases of Compiler Jargons
10	Prashant Gawade	Quiz Conduction	Probability Theory & Random Processes	Probability by using permutation & Combination
11	Mayuri Kulkarni	Simulation	IoT	Circuit Design
12	Vijaylaxmi Bittal	Presentation	Basic Human Rights	
13	Vijaylaxmi Bittal	Simulation	Computer Network	Simulation of DNS, FTP, Web and E-mail server configuration
14	Bhushan Nandwalkar	Virtual Lab	Design and Analysis of Algorithm	Single Source Shortest Path Algorithm (Dijkstra’s Algorithm)

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**25th Sept 2021**
Time	:	**05:00 pm**
Venue	:	**Computer Center**
Course Code & Title	:	**BTCOC501 Database Systems**
Learning Strategy	:	**Virtual Lab (IITKGP)**
Topic	:	**ER modeling from problem statement**

Virtual Lab:

Virtual labs offers students access to a realistic lab experience that will allow them to perform experiments and practice their skills in a risk-free and interactive learning environment.

Benefit of the Virtual Lab:

- Virtual computer labs provide students with unrestricted access to resources, software, and applications round the clock.
- Virtual labs offer a personalized and interactive learning environment. Students can experiment with various software configurations.
- Virtual labs eliminate the need for redundant software installations on multiple machines. This optimizes resource allocation, ensuring that software licenses are utilized efficiently and reducing software procurement costs.
- In science, technology, engineering, and mathematics (STEM) fields, virtual labs offer realistic simulations and experiments. Students can manipulate variables, observe outcomes, and hone their analytical skills in a controlled digital environment.

Course Outcome:

CO1 : To Identify the basic database management system concepts and entity relationship model.

Goal:

The students will be able to understand ER model designing on virtual lab.

Reason for choosing the particular topic (Method):
Virtual labs helps the students to simulate the problem statement to ER model and then understand the entities and their relations between them so that students can apply constraints on tables and create these tables using SQL.

How we implemented Virtual Labs:

- The faculty has discussed the concept of ER diagram and their symbols. Also explain how to read problem statements and find the required entities as per the problem statement the previous day.
- Faculty ask students in lab and explain the virtual lab portal and give overview of ER diagram.
- After overview of ER diagram, students read the theory of ER diagram from virtual ab portal.
- Later on students read the given problem statement and start the simulation for given problem statement. (Given problem statement is based on school management system).
- Later on students solve the given "Self Evaluation" Test and posttest on Single source shortest path algorithm.

Committee Members: Prof. Bhushan Nandwalkar, Coordinator

Dr. Makarand Shahade Convener

Total No. of Student Benefited:

56 students participated from T.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to Single source shortest path algorithm.

Pre-implementation Reflection:

- Few students are get difficulties to draw ER diagram.

Post Implementation reflection:

- Students were able to draw ER diagram and find the proper relations and constraints.
- All the students enjoyed the Virtual Lab
- Students' feedback reflected that they have understood the concept.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO5	PO12	PSO1	PSO2
LO1: To Identify the basic database management system concepts and entity relationship model.	1	1	2	1	1	1	2

POs Mapped: PO1, PO2, PO3, PO12, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	The basic engineering knowledge help to classify ER diagram
PO2	Student will **identify** the entities from the problem statement
PO3	Students will be able draw the ER Diagram
PO5	Using modern tool students can draw ER diaram
PO12	The problem-solving skill earned through this activity helps the students in motivating lifelong learning.
PSO1	Student ability to design the ER diagram fro given problem statement.
PSO2	Students will provide the solution to Single source shortest path algorithm **problems by applying Dijkstra's algorithm**

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's attained: PO1, PO2, PO3, PO5, PO12, PSO1, and PSO2

References https: http://vlabs.iitkgp.ac.in/se/4/

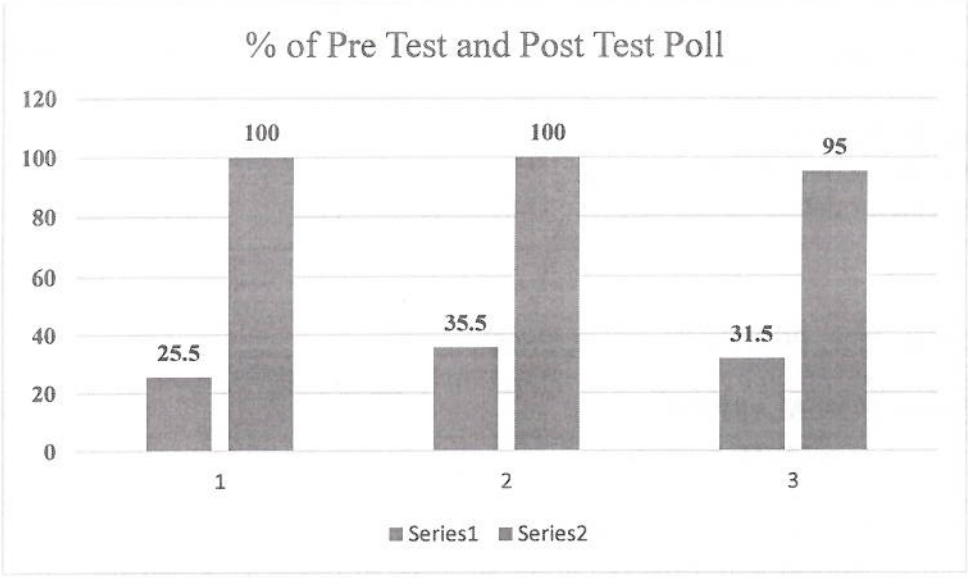

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Bhushan Nandwalkar
Event Coordinator

Shri Vile Parle Kelavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**8th Oct 2021**
Time	:	**05:00 pm**
Venue	:	**Classroom: 209**
Course Code & Title	:	**BTCOC503 Machine Learning**
Learning Strategy	:	**Crossword Puzzle**
Topic	:	**Machine Learning Jargons**

Crossword Puzzle:

Crossword puzzle is a suitable game used to help students to master vocabulary easily by giving opportunity for them to memorize as much as possible vocabulary, for there will be many words given as cues that should be understood by them to be able to fill the squares with the suitable words too.

The benefit of the Crossword Puzzle:

- The crossword puzzle is a kind of word game that can help students to extend their vocabulary knowledge.
- From exam point of view it plays an important role in solving multiple-choice type questions.
- It can be useful for students to memorize terminology, definitions, spelling, and pairing key concepts.
- It helps students to Improve Cognitive Abilities.
- Crosswords for students can improve their vocabulary, analytical skills, and memory.

Course Outcome:

CO2: *To recognize the characteristics of machine learning that make it useful to real-world problems and Use different linear methods for regression and classification with their optimization through different regularization techniques.*

Goal:

The students will be able to improve their machine-learning vocabulary

Reason for choosing the particular topic (Method):
First, crossword puzzles motivate students to remember and understand a word's meaning. Second, students needed to understand the words given in each clue in addition to the word in the grid, resulting in increased vocabulary. In addition, a crossword puzzle is used to empower, engage, and stimulate a classroom by putting students at the Centre of the learning process.

How we implemented Brainstorming:

- At the end of the chapter or module faculty developed a crossword grid with clues using the online platform.
- A crossword puzzle of 20 to 25 clues was given to the students.
- The students discussed with their peers and completed the puzzle.
- After completion of the puzzle activity, the faculty member discussed the answer to make the students aware of the correct answer.

Committee Members: Prof. Ashish Awate, Coordinator
Dr. Makarand Shahade, Convener

Total No. of Student Benefited:

62 students participated from the Third Year B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to improve their machine-learning concepts, vocabulary, analytical skills, and memory.

Pre-implementation Reflection:

- Few students found it difficult to complete the puzzle
- Students just might not have the necessary knowledge to complete crossword puzzles.

Post Implementation reflection:

- The crossword puzzle activity was very interesting and students were able to identify the appropriate jargon in machine learning.
- Vocabulary of the terms related to machine learning is improved.
- Student's understanding of basic machine learning concepts is improved.
- This activity helps to test the level of understanding of the students.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO9	PO10	PO12
LO1: To Recognize the characteristics of machine learning that make it useful to real-world problems.	2	2	2	2	1	2

POs Mapped: PO1, PO2, PO3, PO10, PO12

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Students will be able to understand the concept of characteristics of machine learning
PO2	Students will be able to choose the appropriate machine learning type while approaching the problem.
PO3	Students will be able to apply machine learing concept while building model.
PO10	Students communication skills will be improved as they discuss the answers with peers
PO12	The problem-solving skill earned through this activity helps the students in motivating life long learning.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO3, PO10, PO12

References: https://puzzlemaker.discoveryeducation.com/criss-cross

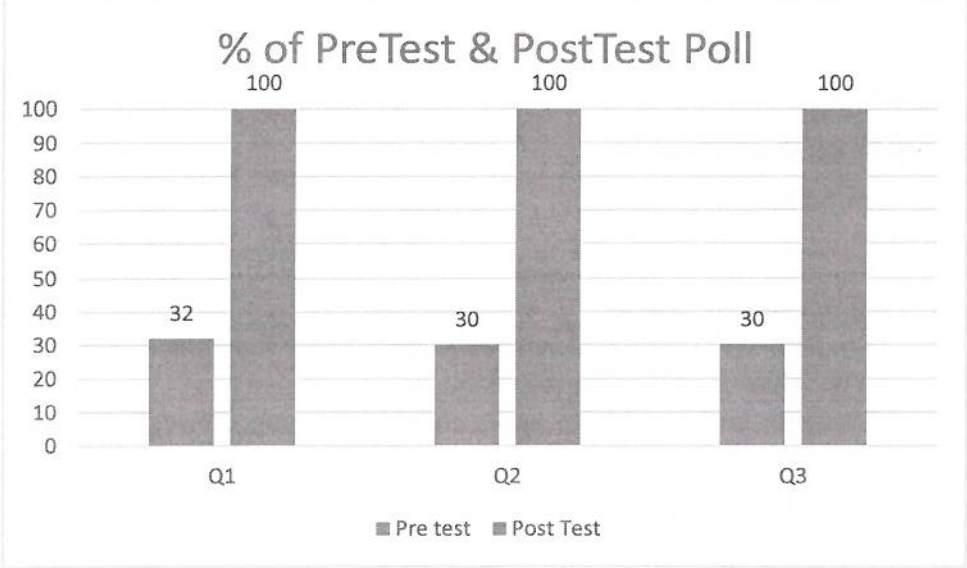

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Ashish Awate
Event Coordinator

Shri Lala Patil Kalavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**25 October 2021**
Time	:	**05:00 pm**
Venue	:	**Class room : 208**
Course Code & Title	:	**Introduction to Research**
Learning Strategy	:	**Case Study**
Topic	:	**Case Study A Review of Research on Brain Tumor Detection Techniques**

Title: A Review of Research on Brain Tumor Detection Techniques using Medical Imaging Modalities

Introduction:

Brain tumors pose significant challenges in terms of diagnosis and treatment, making early and accurate detection crucial for patient outcomes. This review paper aims to provide an overview of existing research on brain tumor detection techniques using medical imaging modalities such as Magnetic Resonance Imaging (MRI), Computed Tomography (CT), and Positron Emission Tomography (PET). By synthesizing findings from empirical studies and technical developments, this review seeks to highlight the strengths and limitations of current detection methods and identify areas for further research and improvement.

Research Objective:

The primary objective of this review paper is to critically evaluate the existing literature on brain tumor detection techniques using medical imaging modalities. Specifically, the study aims to: Summarize key findings and trends in research on brain tumor detection using MRI, CT, PET, and other imaging modalities. Evaluate the accuracy, sensitivity, and specificity of different imaging techniques for detecting brain tumors across various patient populations and tumor types. Discuss advances in imaging technology and image processing algorithms aimed at improving the efficiency and reliability of brain tumor detection.

Identify challenges and limitations in current detection methods and propose directions for future research and development.

Methodology:

Literature Search: A systematic search of academic databases, journals, and conference proceedings will be conducted to identify relevant research articles, reviews, and technical reports on brain tumor detection using medical imaging modalities.
Inclusion Criteria: Studies focusing on brain tumor detection techniques using MRI, CT, PET, or other imaging modalities, published in peer-reviewed journals or reputable sources, will be included in the review.
Data Extraction: Relevant data and findings from selected studies will be extracted and organized according to key themes and research questions.
Synthesis and Analysis: The synthesized literature will be analyzed to identify common trends, methodological differences, and areas of consensus and controversy. The review will provide a critical assessment of the strengths and limitations of existing detection methods and highlight emerging technologies and approaches.

Results:

Key Findings and Trends: The review will summarize key findings from the literature on brain tumor detection using different imaging modalities, including MRI, CT, and PET. This will include discussions on the sensitivity, specificity, and diagnostic accuracy of each modality, as well as comparisons between modalities.
Technological Advances: The paper will discuss recent advances in imaging technology and image processing algorithms aimed at improving brain tumor detection. This may include developments in high-resolution imaging, machine learning-based classification algorithms, and multimodal imaging approaches.
Challenges and Limitations: The review will identify challenges and limitations in current brain tumor detection methods, such as the need for improved image segmentation algorithms, variability in image interpretation, and the presence of artifacts and noise in imaging data.
Future Directions: Based on the synthesized evidence, the paper will propose directions for future research and development in brain tumor detection, including areas for further technological innovation, clinical validation studies, and interdisciplinary collaboration.
Conclusion:
This review paper provides a comprehensive overview of research on brain tumor detection techniques using medical imaging modalities. By synthesizing findings from empirical studies and technical developments, the study offers insights into the current state of the art, challenges, and opportunities in brain tumor detection. The findings contribute to our understanding of the strengths and limitations of existing detection methods and inform discussions on future research directions aimed at improving early and accurate diagnosis of brain tumors.
References:

1) Tiwari, Arti, Shilpa Srivastava, and Millie Pant. "Brain tumor segmentation and classification from magnetic resonance images: Review of selected methods from 2014 to 2019." *Pattern recognition letters* 131 (2020): 244-260.
2) Toğaçar, Mesut, Burhan Ergen, and Zafer Cömert. "BrainMRNet: Brain tumor detection using magnetic resonance images with a novel convolutional neural network model." *Medical hypotheses* 134 (2020): 109531.

Committee Members: Umakant Mandawkar, Coordinator

Dr. Makarand Shahade, Convener

Total No. of Student Benefited:

61 students participated from Third Year B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

Understanding Research Methodologies: Students will gain familiarity with the process of conducting a literature review, including systematic search strategies, selection criteria for inclusion of studies, and methods for data extraction and synthesis.
Critical Evaluation of Existing Literature: Students will develop the ability to critically evaluate research papers and technical reports, assessing the strengths and limitations of different detection techniques, imaging modalities, and methodological approaches employed in brain tumor detection research.
Synthesizing Findings: Students will learn how to synthesize findings from multiple studies, identifying common trends, methodological differences, and areas of consensus and controversy in brain tumor detection literature.
Identifying Gaps in Knowledge: Through the review process, students will identify gaps in existing knowledge and areas for further research and development in brain tumor detection, such as the need for improved imaging technology, image processing algorithms, and clinical validation studies.
Communicating Research Findings: Students will develop communication skills by summarizing key findings and trends from the literature review in a coherent and structured manner, as demonstrated in the case study report.
Critical Thinking and Problem-Solving: Students will engage in critical thinking and problem-solving activities, analyzing complex research findings and proposing directions for future research aimed at addressing challenges and limitations in brain tumor detection.
Interdisciplinary Collaboration: Students may collaborate with peers or experts from interdisciplinary fields, such as medical imaging, oncology, and computer science, to gain insights from diverse perspectives and approaches to brain tumor detection research.
Ethical Considerations: Through the review process, students may encounter ethical considerations related to patient privacy, informed consent, and responsible conduct of research in the field of medical imaging and brain tumor detection.
By engaging in a case study on reviewing a research paper on brain tumor detection, students can develop a range of research-related skills and competencies essential for conducting independent research and contributing to advancements in the field of medical imaging and healthcare.

Pre-implementation Reflection:

1. Challenges or obstacles students anticipate encountering during the case study
2. What are your expectations for the case study
3. How will you ensure that your review process is conducted with integrity and respect for ethical standards?

Post Implementation reflection:

Learning Outcomes Achievement: Reflect on the learning outcomes of the case study. To what extent do you feel you achieved the intended learning objectives, such as understanding research methodologies, critically evaluating existing literature, and synthesizing findings?

Knowledge Acquisition: Consider the new knowledge and insights you gained from reviewing research papers on brain tumor detection. What specific information or findings stood out to you? How has your understanding of brain tumor detection techniques and medical imaging modalities evolved as a result of this activity?

Critical Thinking and Analysis: Reflect on your ability to critically analyze and evaluate the research papers. What criteria did you use to assess the quality and validity of the studies? How did you weigh conflicting findings or interpretations in the literature?

Learning Outcomes/ Program Outcomes	PO1	PO2	PO4	PO6	PO10	PSO1	PSO2	PSO3
LO1: Identify a research problem to be investigated.	2	2	2	2	2	2	2	2

POs Mapped: PO1, PO2, PO4, PO6, PO10, PSOs Mapped : PSO1, PSO2, PSO3

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Students demonstrate their ability to apply their knowledge of mathematics, science, engineering fundamentals, and specialized areas to recognize research gaps and formulate relevant research questions.
PO2	To identify and formulate complex engineering problems. By learning to identify research problems, students develop critical thinking skills and learn to articulate clear and well-defined research questions or objectives.

PO4	Students learn to conduct research-based investigations to address complex engineering problems. They develop skills in designing experiments, collecting and analyzing data, and synthesizing information to draw valid conclusions.
PO6	Identifying research problems involves considering societal, health, safety, legal, and cultural issues relevant to engineering practice. as students learn to assess the societal implications of their research questions and consider the broader impact of their work on society
PO10	Effective communication of research problems is crucial for collaboration, feedback, and dissemination of findings. This outcome relates to PO10, as students develop skills in communicating research questions clearly and effectively to diverse audiences, including peers, instructors, and stakeholders.
PSO1	By identifying research problems, students showcase their proficiency in recognizing areas where further investigation or development is needed, spanning multiple fields such as web development, data science, and cloud computing
PSO2	Students develop problem-solving skills by pinpointing issues and formulating research questions that can lead to innovative computer-based solutions. This mapping highlights the practical application of problem-solving methodologies in addressing real-world issues within the realm of computer science and related fields.
PSO3	By recognizing research gaps and formulating relevant questions, students showcase their ability to leverage modern tools and technologies to innovate and shape their career paths in areas such as data science, web development, cybersecurity, and more. This alignment emphasizes the role of research problem identification in preparing students for successful careers in the ever-evolving field of computer science and technology.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO4, PO6, PO10 **PSO's Attained: PSO1, PSO2, PSO3**

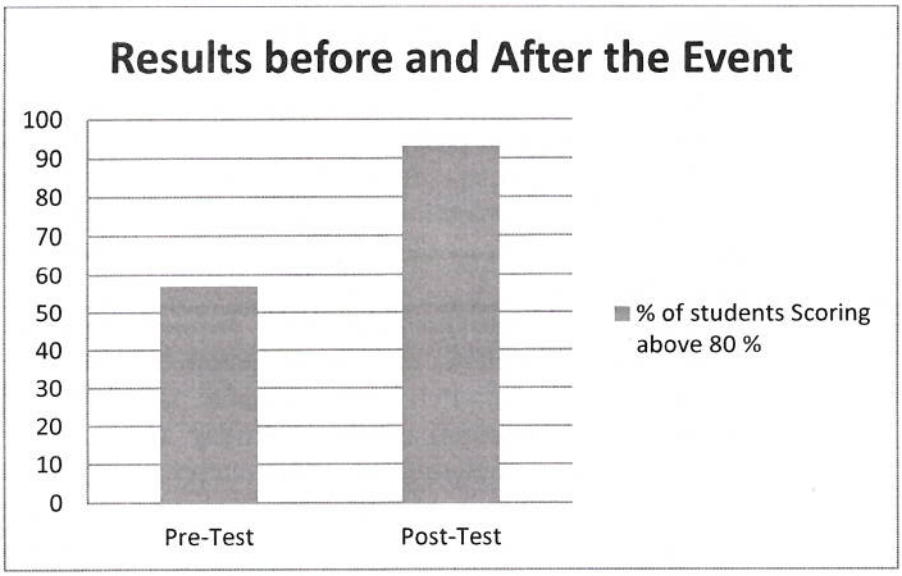

Fig. PreTest and PostTest Poll Before & After of Event

Prof
Dr. Umakant Mandawkar
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

Dr. Makarand Shahade
HOD, Computer Engineering

21-22

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**22 NOV 2021**
Time	:	**05:00 pm**
Venue	:	**Class room : 209**
Course Code & Title	:	**BTCOC504(A) & Blockchain Technology**
Learning Strategy	:	**Simulator**
Recourse person	:	**Prof. Mayuri Kulkarni**

Blockchain Simulation Tools:

Simulation is a decision analysis and support tool. Simulation software allows students to understand the various concepts of block chains as Block, Nonce, hashing address and mining procedure.

Objectives:

- The objective is to present the design and implementation of a simulator where Block chain can be implemented in a simple.
- Simulation modeling shows the role of previous address and nonce importance for generating the new hash address by considering data contents.
- It provides an important method of which reflects for the same data block chain fundamentals are responsible to generate new addresses.
- A key goal is to encourage the free flow of ideas.

- **Activity Details:**
  1. The working of simulation is explained in the class.
  2. Later the Blockchain Demo link is provided to students and asked them to check the values of nonce, hash for same data and for different data.
  3. Later explain the concept of Peer and performed the same operations on the peers.
  4. Analyzed the results with and without peer.
  5. It indirectly helps the students to gain insight about block, mining, hashing and nonce.

Total No. of Student Benefited:

69 students participated from B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to understand the concept of block, miner, nonce, pervious address and hash function.

Pre-implementation Reflection:

- Some students were unable to understand the importance of previous hash function for generating new hash address.

Post Implementation reflection:

- Students were able to do the simulation as explained.
- All the students actively participated and enjoyed the conversation.
- Students' feedback reflected that they have understood the concepts.

Learning Outcomes/ Program Outcomes	**PO1**	**PO2**	**PO5**	**PO12**	**PSO 1**
TLO1 *To recognize various concepts in blockchain technology such as Ledger, Public Ledger, block and blockchain, hashing function, hashing properties.*	**3**	**2**	**1**	**1**	**1**

POs Mapped: PO1,PO2,PO5,PO12,PSO1

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	**JUSTIFICATION**
PO1	To gain and apply Knowledge of Engineering fundamentals such as Ledger, Block in a block chain, Hashing function, Markel Tree and Security Aspects of Blockchain
PO2	To Identify the role of different properties associated with blocks to make system more efficient using mathematical and engineering sciences.
PO5	The students can learn and use of different modern tools.

PO12	To apply basics of block, ledger and blockchain are required throughout the application designing in application development domain
PSO1	Ability to understand Ledger concepts and operation on public ledgers. To analyze different properties associated with hash functions and compare different hashing functions.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1,PO2,PO5,PO12,PSO1

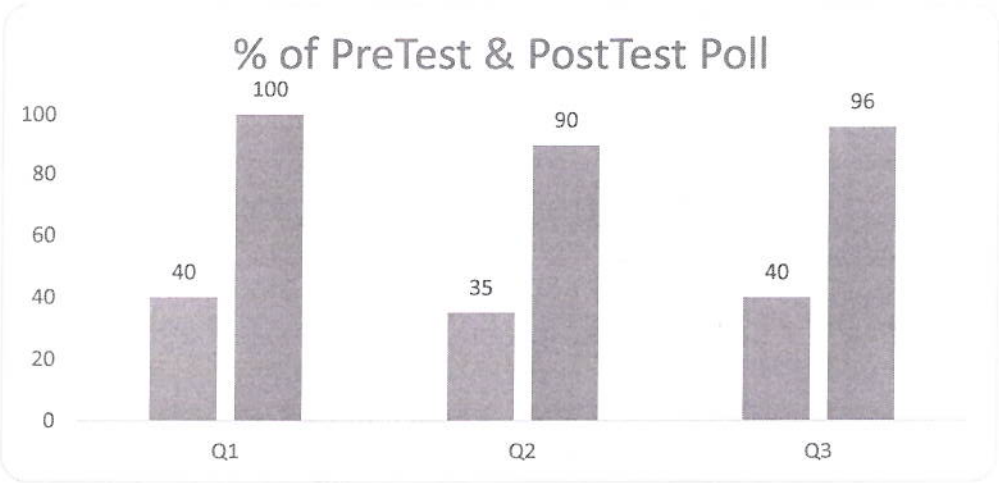

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Mayuri Kulkarni
Event Coordinator

Dr. Makarand Shahade
HOD, Computer Engineering

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

21-22 (5)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**02nd Dec. 2021**
Time	:	**05:00 pm**
Venue	:	**Class room : 205**
Course Code & Title	:	**BTCOC402 Distributed System**
Learning Strategy	:	**Role Play**
Topic	:	**IPC using Message Passing**

Role play:
Role play encourages participation among passive learners, adds dynamism to the classroom and promotes the retention of material.

Benefit of the Role play:

- Students immediately apply content in a relevant, real world context.
- Students can transcend and think beyond the confines of the classroom setting.
- Students see the relevance of the content for handling real world situations.
- The instructor and students receive immediate feedback with regard to student understanding of the content.
- Students engage in higher order thinking and learn content in a deeper way.
- Instructors can create useful scenarios when setting the parameters of the role play whenreal scenarios or contexts might not be readily available.

Course Outcome:
CO1: *Understand the concept of architecture and communication systems in Distributed Systems.*

Goal:
The students will be able to apply various scheduling algorithms.

Reason for choosing the particular topic (Method):
Students are asked to "act out" so they get a better idea of the concepts and theories being

discussed. Role play helps the students to visualize the functioning of **IPC using Message Passing.** In addition, role play is used to empower, engage, and stimulate a classroom by putting students at the Centre of the learning process.

How we implemented Role play:

- The faculty has discussed the concept of IPC using Message Passing on the previous day and askedwillingness from the students to role play the concepts on the next day.
- The students formed groups and prepared for the role play.
- The students enacted **IPC using Message Passing.**
- Three processes, one sender and two receivers to be executed by Message passing
- Students have taken the role of sender and receiver.

Committee Members: Dr. Makarand Shahade, Coordinator and Convener

Total No. of Student Benefited:

22 students participated from B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to demonstrate **IPC using Message Passing.**

Pre-implementation Reflection:

- Some students were not willing to participate which necessary for the execution of therole is playing activity.
- Less number of students was involved in the activity.

Post Implementation reflection:

- Students were able to identify and apply the working of Inter process communication
- All the students enjoyed the activity.
- Students' feedback reflected that they have understood the concept.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO9	PO10	PO12	PSO1
LO2: Understand the Inter process communication in system and encoding and decoding of message data, group communication.	1	2	2	1	2	2

POs Mapped: PO1, PO2, PO9, PO10, PO12, PSO1

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will **Apply** the knowledge of Message passing system to solve issue in IPC
PO2	Student will **Analysis** the Inter process communication working using Message passing
PO9	Students teams **demonstrate** how to solve issue in IPC by message passing using role play
PO10	Students Can **Communicate** working of Inter process communication
PO12	Student can **Apply** the concept of Inter process communication in **Distributed Systems.**
PSO1	Student ability to **Leaner and Analyze** Inter process communication by Message Passing

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll..
Level 3 : High	80% of students scoring more than set attainment level in the Poll..

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO9, PO10, PO12, PSO1

References:

https://serc.carleton.edu/introgeo/roleplaying/whatis.html

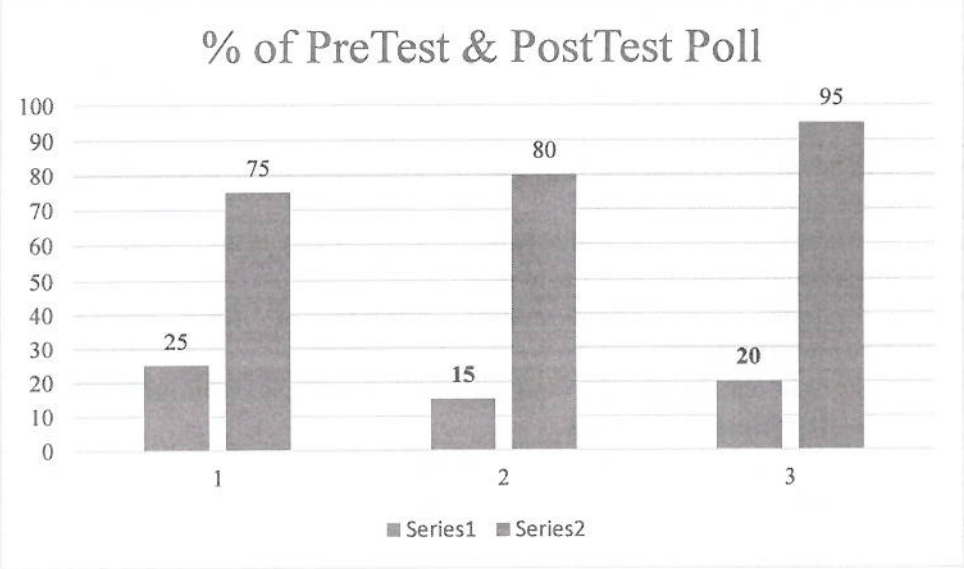

Fig. PreTest and PostTest Poll Before & After of Event

Dr. Makarand Shahade
Event Coordinator

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (6)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES : Mind Game**
Dates	:	**24 December 2021**
Time	:	**05:00 pm**
Venue	:	**Classroom : 208**
Course Code & Title	:	**Discrete Mathematics**
Learning Strategy	:	**Mind-games**
Topic	:	**The Bridges of Königsberg**

The Bridges of Königsberg:

This is a historical puzzle involving a river and a series of islands connected by bridges. The challenge is to determine whether it's possible to walk through the city, crossing each bridge exactly once and returning to the starting point. This problem led to the development of graph theory, which has applications in computer science, transportation planning, and more. It's a fascinating exploration of network connectivity and traversal.

- **Objective:**

The objective of the mind game associated with "The Bridges of Königsberg" problem is to explore the concept of graph theory and develop problem-solving skills in the context of network connectivity. The problem involves a historical scenario where the challenge is to determine whether it's possible to walk through the city of Königsberg, crossing each of its seven bridges exactly once and returning to the starting point. Through this challenge, participants aim to:

Understand Graph Theory: The problem serves as an introduction to graph theory, a branch of discrete mathematics that studies the properties of graphs, which consist of vertices (nodes) connected by edges (lines).

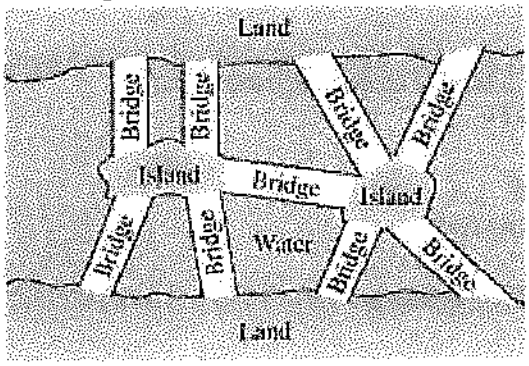
Apply Graph Theory Concepts: Participants learn to represent the city of Königsberg as a graph, where the landmasses are vertices and the bridges are edges. They apply concepts such as degree

(number of edges incident to a vertex) and Eulerian paths (paths that traverse each edge exactly once).

Develop Problem-Solving Skills: By attempting to solve the problem, participants exercise critical thinking, logical reasoning, and creativity. They learn to devise strategies to navigate the city while obeying the constraints of the problem.

Appreciate Real-World Applications: The problem's historical context and its relevance to graph theory highlight the practical applications of discrete mathematics in various fields, including transportation planning, computer science, and network analysis.

- **Activity Details**: The following topics are covered
  1. Student provided with following Diagram



  2.
  3. Students Ask to give
     a. the network corresponding to The Bridges of Königsberg
     b. Euler Network
     c. Non-Euler Network
     d. Can you find a way to access each bridge only once
  4. Students will discuss with peers and provide a solution.
  5. At Last course coordinator will provide and discuss the solution.

- **Total No. of Student Turned up:**

  36 students participated from S. Y. B. Tech. Department of Computer Engineering

- **Outcome of Activity:**

  The outcome of the mind game associated with "The Bridges of Königsberg" typically results in participants gaining a deeper understanding of graph theory concepts and problem-solving strategies. Here are some potential outcomes:

  Solution Exploration: Participants may work individually or in groups to explore different approaches to solving the problem. They may attempt to devise strategies for traversing the city of Königsberg while crossing each bridge exactly once and returning to the starting point.

  Discovery of Eulerian Paths: Through experimentation and analysis, participants may discover the concept of Eulerian paths, which are paths that traverse each edge of a graph

exactly once. They may realize that the problem of traversing the bridges of Königsberg is closely related to finding Eulerian paths in a graph.

Appreciation of Graph Properties: Participants may develop an appreciation for the properties of graphs, such as degrees of vertices and connectivity. They may observe how the configuration of bridges in Königsberg forms a specific type of graph and learn how to analyze its properties.

Discussion and Collaboration: The mind game often fosters discussion and collaboration among participants as they share ideas, insights, and strategies for approaching the problem. Collaborative problem-solving encourages teamwork and communication skills.

Learning Through Failure: Participants may encounter challenges and setbacks as they attempt to solve the problem, but these experiences can be valuable learning opportunities. They may learn from their mistakes, refine their strategies, and develop resilience in problem-solving.

Learning Outcomes of Activity:

- Students can apply the Euler path and Euler cycle.
- Student able to learn traversing of graph.
- Students learn the importance of graphs in real worls.

Pre-implementation Reflection:

- Few students found it difficult to complete the mind game.
- Students just might not have the necessary knowledge how to of traverse the bridges of Königsberg optimally.

Post Implementation reflection:

- Students were able to identify and apply the traversing of the bridges of Königsberg.
- All the students enjoyed the activity.
- Students' feedback reflected that they understood the concept.

POs Mapped: PO1, PO2, PO3, PO12,

PSO Mapped : 1,2,3

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO12	PSO1	PSO2	PSO3
LO1: Design innovative solutions for traversing the bridges of Königsberg while meeting the specified constraints.	2	2	2	2	2	1	1

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	While the problem doesn't directly involve applying engineering knowledge, it does require participants to apply mathematical and logical reasoning skills, which are foundational to engineering knowledge.
PO2	Participants must identify and analyze the complex problem of traversing the bridges of Königsberg, considering the constraints and possibilities involved.
PO3	The problem requires participants to design a solution for traversing the bridges of Königsberg while obeying the given constraints.
PO12	Participants engage in independent learning and problem-solving as they explore the problem and develop their understanding of graph theory and its applications.
PSO1	Comprehend, analyze, design, and implement computer programs: Participants in the mind game must comprehend the problem statement, analyze the constraints, design strategies for traversal, and potentially implement algorithms to solve it.
PSO2	The mind game challenges participants to solve the problem of traversing the bridges of Königsberg using mathematical and algorithmic approaches, demonstrating problem-solving skills.
PSO3	While the problem itself may not directly involve modern computer tools, participants may leverage computational thinking and algorithmic skills, which are essential in various modern computer-related fields. Engaging in such mind games fosters creativity and innovation, which are valuable for building a successful career in computer science and related areas.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	50% of students scoring more than set attainment level in the Exam.
Level 2 : Medium	60% of students scoring more than set attainment level in the Exam.
Level 3 : High	70% of students scoring more than set attainment level in the Exam.

Overall Attainment : Level 3(high)

PO's Attained : PO1, PO2, PO3,PO12 PSO's Attained : PSO1,2,3

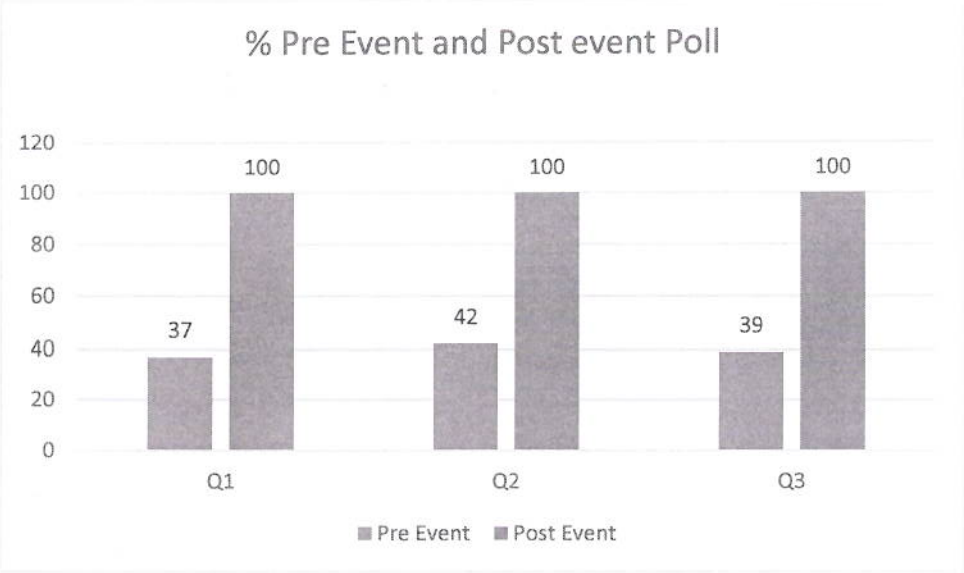


Fig. Pre and Post Event Poll Before & After of Event

Prof. Ashish Awate
Event Coordinator

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (7)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

Approved by AICTE & Affiliated to DBATU

DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**15th January 2022**
Time	:	**09:00 am**
Venue	:	**209**
Course Code & Title	:	**BTCOC302 Data Structures**
Learning Strategy	:	**Virtual Labs**
Topic	:	**Binary Search Tree Operations**

Virtual Labs:

Virtual Labs project is an initiative of Ministry of Education (MoE), Government of India under the aegis of National Mission on Education through Information and Communication Technology (NMEICT).

Course Outcome:

CO5: *To implement data structures as search trees.*

Committee Members: Ms. Mayuri Kulkarni, Coordinator.

Total No. of Student Benefited:

Conducted for each practical batch. 69 students participated from S.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to demonstrate various operations on BST.

Pre-implementation Reflection:

- Students were not confident about insertion and deletion operation in BST.

Post Implementation reflection:

- Students demonstrated operation like Insert, Search, Delete in a BST.
- Student got clear idea how to implement the BST using C language.

Learning Outcomes/ Program Outcomes	PO1	PO3	PO5	PO12	PSO1	PSO2
ELO7: Students will be able to Implement data structures as single and double linked list.	2	2	3	2	2	2

POs Mapped: PO1, PO2, PO5, PO9, PO10, PO12, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will Apply the knowledge of engineering to implement BST
PO3	Student will design solution using BST for real world problems
PO5	Students will use modern IDE tools like Virtual labs from anywhere to learn and clear their concepts
PO12	Student can apply the concept of BST data structure to real world problems.
PSO1	Student ability to analyze and implement the operations of BST
PSO2	Students will provide the solution to real world problem with BST

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll..

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO3, PO5, PO12, PSO1, PSO2

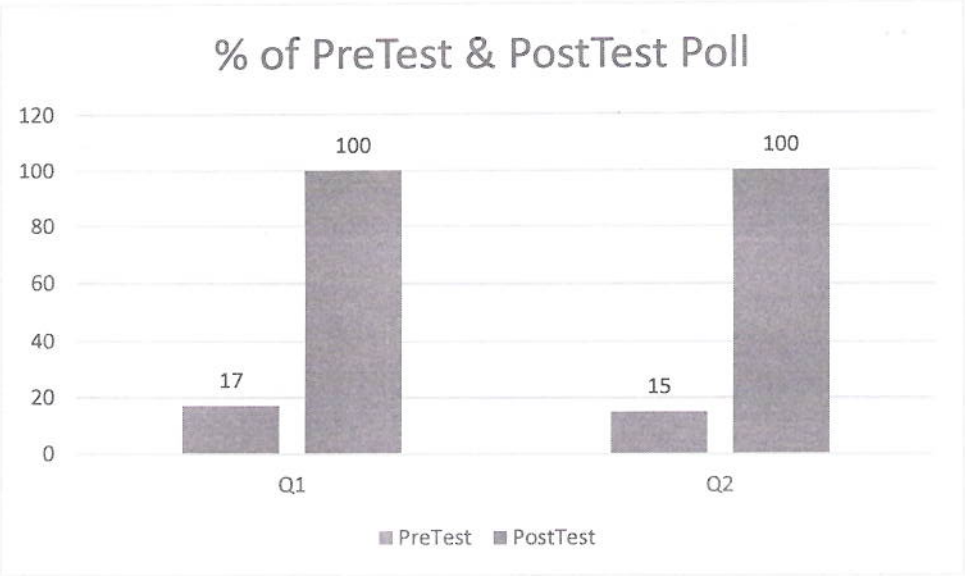


Fig. PreTest and PostTest Poll Before & After of Event

Mayuri Kulkarni
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

Dr. Makarand Shahade
HOD, Computer Engineering

21-22

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**17 January 2022**
Time	:	**09:00 am**
Venue	:	**Classroom: 209 & MS Teams**
Course Code & Title	:	**BTCOC303 Data Structures**
Learning Strategy	:	**Flip Class Room**
Topic	:	**Breadth First Search**

Flip Class Room:

A flipped classroom is an instructional strategy and a type of blended learning, which aims to increase student engagement and learning by having learners complete readings or watching instructional material at home and work on live problem-solving during class time. This pedagogical style moves activities, including those that may have traditionally been considered homework, into the classroom. With a flipped classroom, students watch online lectures, collaborate in online discussions, or carry out research at home, while actively engaging concepts in the classroom, with a mentor's guidance.

The benefit of the Flip Class Room:

- Instructors spend less time on introducing new topics.
- Learners develop Independent Learning Skills.
- Instructor can create more Engaging Lessons.
- Instructors can Re-use the content they create.
- Learners are able to build a deeper understanding.
- Learners find classroom time more interesting.

Goal:

The flipped learning model deliberately shifts instruction to a learner-centered approach, where in-class time is dedicated to exploring topics in greater depth and creating rich learning opportunities

Reason for choosing the particular topic (Method):

The sample topics selected under the flip classroom as Breadth First Search to convery the concepts as traversal algorithm.

How we implemented Flip Class Room:

- Shared Short video link on MS Teams Platform.
- This preclass content engages to the point ,allowing students to grasp the fundamentals of before class.
- Provided additional resource as Virtual lab instructional material for deeper understanding.
- During lecture conduction ,moved beyond as given the problem on the same topic which was unsolved in the provided video and instructional material.
- This activity focused on the application of the concept to solve the problem which enhances the skills as analysis.
- As the learners were solving the problems provided time to time instructions.

Committee Members: Prof. Mayuri Kulkarni, Coordinator
Dr. Makarand Shahade, Convener

Total No. of Student Benefited:

61 students participated from the Second Year B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to improve their data structures concepts on graph.

Pre-implementation Reflection:

- Students just might not have the necessary knowledge to complete flip class room activity.

Post Implementation reflection:

- Students found that video lecture provided on topic enhance their learning skills.
- Students understood the cocepts as initialization,exploration and termination in BST.
- This activity helps to test the level of understanding of the students.

Learning Outcomes/ Program Outcomes	PO1	PO3	PO5	PO12	PSO1	PSO2
ELO7: Students will be able to Implement data structures as single and double linked list.	2	2	3	2	2	2

POs Mapped: PO1, PO2, PO5, PO9, PO10, PO12, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will Apply the knowledge of engineering to implement BST
PO3	Student will design solution using BST for real world problems
PO5	Students will use modern IDE tools like Virtual labs and flip classroom from anywhere to learn and clear their concepts
PO12	Student can apply the concept of BST data structure to real world problems.
PSO1	Student ability to analyze and implement the operations of BST
PSO2	Students will provide the solution to real world problem with BST

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll..

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO3, PO5, PO12, PSO1, PSO2

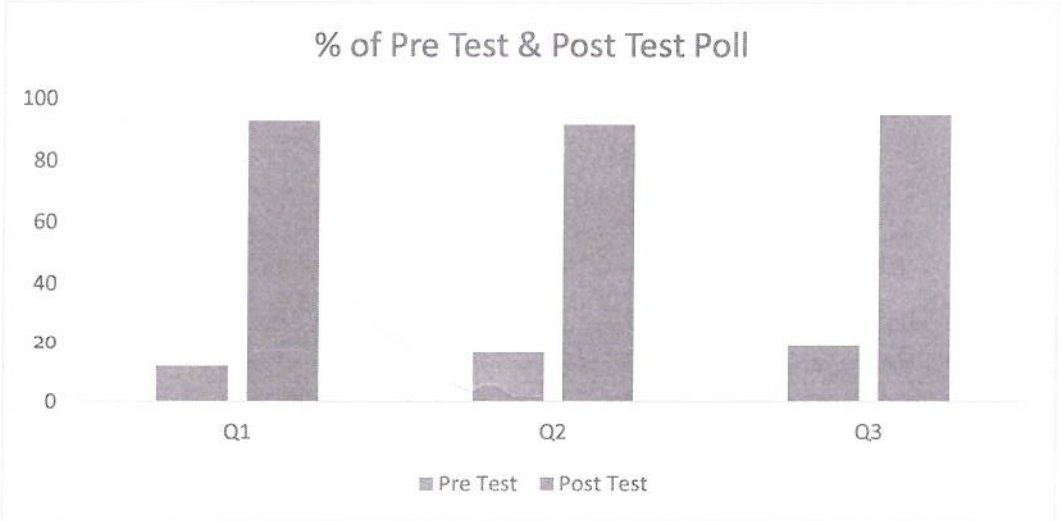

Fig. PreTest and PostTest Poll Before & After of Flip Class Room

Prof. Mayuri Kulkarni
Course Coordinator

Shri Vile Parle Kelavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (15)

Shree Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Date	:	**04/05/2022**
Time	:	**05:00 pm**
Venue	:	**Class room : 210**
Course Code & Title	:	**BTBS404 Probability Theory and Random Processes**
Learning Strategy	:	Quiz Conduction.
Topic	:	**Probability by using permutation and Combination**

Quiz Conduction.

Quizzes can motivate students to study and engage with the material. Quizzes can encourage participants.

Benefits of **Quiz Conduction.**.

- **Active Engagement**: Quizzes require students to actively participate in their learning process by recalling and applying knowledge. This interaction improves their comprehension and recall of the subject.
- **Rapid Feedback**: Quizzes give students rapid feedback on their performance, allowing them to understand their strengths and weaknesses. With this feedback, students can quickly fix any misconceptions or gaps in their understanding.
- **Learning Assessment**: Quizzes are a formative assessment technique that educators use to test students' grasp of the topic. Using quizzes, educators can determine whether learning objectives are being fulfilled and tailor their instruction accordingly.
- **Motivation**: The thought of a quiz might encourage pupils to study and practice the content on a regular basis. Quizzes instill a sense of accountability and motivate pupils to stay.

Course Outcome:

CO1: Find probability of given events Using **using permutation and Combination** and Translate real-world problems into probability models.

Session Objective:

Students will be able to find probability of given events Using using permutation and Combination and Translate real-world problems into probability models.

Reason for choosing the particular topic (Method):

Permutation and Combination is very important topic in probability theory. There will be one question every time asked in GATE examinations and also in other competitive exams on this topic there will be so many questions in aptitude tests. So overall this topic helps students in many competitive exams.

How we Conducted Problem Solving session. :

- The faculty explained the concept of Permutations and Combinations Laplace the day before and asked students whether they were willing to apply the concept on next day.
- The faculty give some questions to students on same concept and asked the students to solve.
- The students formed groups and discussed the questions.
- Most of the students of class solve all given problems.

Committee Members: Mr. Prashant Gawade (Course Coordinator)

Total No. of Student Benefited:

51 students participated from S.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to find Probability using permutation and combinations.

Pre-implementation Reflection:

- Some students were not interested to participate in this session.
- Less confidence.

Post Implementation reflection:

- Students were able to find Probability using permutation and combinations.
- All the students enjoyed the Session.
- Students' feedback reflected that they have understood the concept.

Learning Outcomes/ Program Outcomes	PO1	PO2	PSO1	PSO2
LO1: The students will be able to find Probability using permutation and combinations.	2	2	1	2

POs Mapped: PO1, PO2, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Basic knowledge of Mathematics is use to translate real-world problems into probability models and give its solution.
PO2	Formulate real-world problems into probability models and find its probability
PSO1	Probability theory is utilized in computer networks and security for modeling network traffic, analyzing network protocols, and assessing security risks
PSO2	The knowledge of concepts of probability is use to provide computer based solution for the real-world problems.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PSO1, PSO2,

References: 1. Fundamentals of Statistics by S. C. Gupta.
2. Probability and Statistics by T Veerarajan

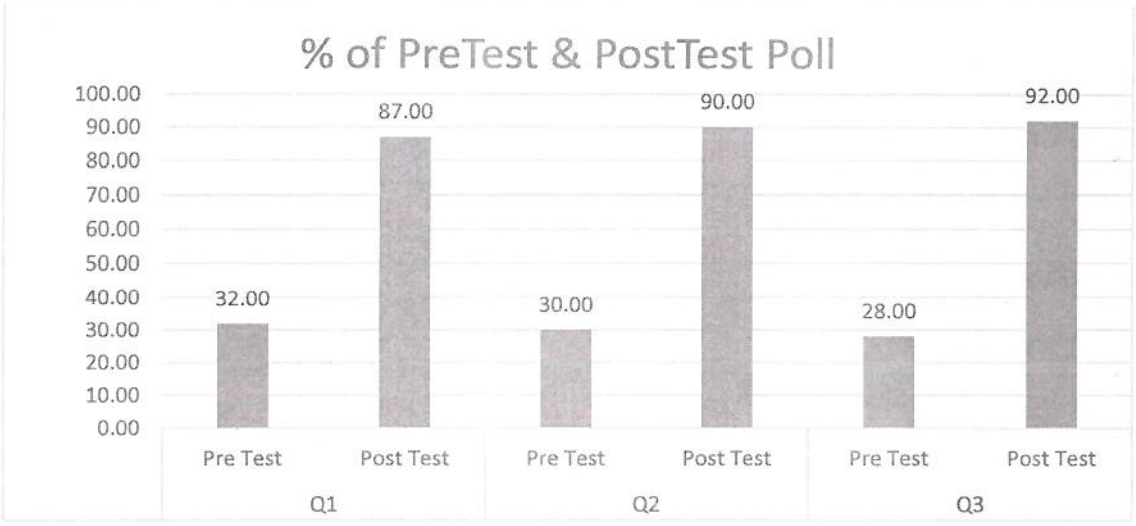

Fig. Pre Test and Post Test Poll Before & After of Event

Mr. Prashant Gawade
Event Coordinator

Shri Vile Parle Kelavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (1)

ShriVile Parle Kelavani Mandal's

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**13nd April 2022**
Time	:	**05:00 pm**
Venue	:	**Classroom: 208**
Course Code & Title	:	**BTCOC604 Internet of Things**
Learning Strategy	:	**Simulator**
Topic	:	**Circuit Design**

Tinkercard Simulation

Simulation is a decision analysis and support tool. Simulation software allows students to understand the various concepts of circuit design and virtual testing of hardware before purchasing the actual devices (Hardware)

Objective:

The objective of this activity is to

- Students will be able to understand the basics of circuit design.
- Student will be able to learn & understand working mechanism of IoT application on simulation environment.

Activity Details:

1. The simulator access and available virtual ardunio board explained.
2. Given the idea about basic elements of electronic devices as resisters,diodes,capacitors and gates.
3. Later explained basic principals of components interfacing.
4. After that shown the interfacing of ardunio uni with LED.
5. Later at code editor written code for the LED blinking with delay.
6. Shown the result at simulation environment.

Total No. of Student Benefited:

69 students participated from the Third Year B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to understand the interfacing concepts of the electronic components with ardunio and sensors/actuators.

Pre-implementation Reflection:

- Few students found it difficult to interface the componets with the ardunio.

Post Implementation reflection:

- Students were able to do the simulation as explained.
- All the students actively participated and enjoyed the conversation.
- Students' feedback reflected that they have understood the concepts.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO5	PO 12	PSO2
TLO1 To discuss different Microcontroller boards such as Arduino and RaspberryPi.	1	1	1	2	1	1

POs Mapped: PO1, PO2, PO3, PO5, PO12, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Apply the knowledge of engineering fundamentals of IoT circuit design.
PO2	Identify the various boards, sensors, actuators.
PO3	Design solution for real time applications on simulation platforms.
PO5	Use of modern tools to design the IoT application circuit and to test the output on virtual environment.
PO12	Ability to engage the life-long learning in context with technological change.
PSO2	To understand the standard practice in IoT Circuit design.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO3, PO5, PO12, PSO2

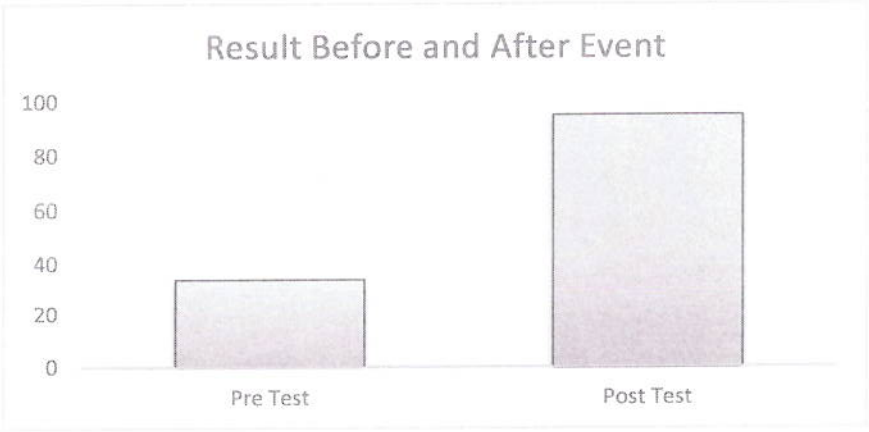

Fig. Feedback of Event After & Before Test

Prof. Mayuri Kulkarni
Event Coordinator

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (12)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**4th ,5th ,9th,18th,19th,21st MAY 2022**
Time	:	**03:00pm to 05:00pm**
Venue	:	**Class room : 208**
Course Code & Title	:	**BTHM403 & Basic Human Rights**
Learning Strategy	:	**Presentation**
Recourse person	:	**Prof Vijaylaxmi Bittal**

Objectives : Enabling the students to understand the social related problems and preparing them how to react towards giving solutions through engineering knowledge and applications.

- **Activity Details/Rules:**
  1. Made group of 5 members
  2. Assigned case study topics
  3. Discussion and brainstorming with groups
  4. Display Schedule for case study presentation
  5. Preparation of presentation in collaborative work sharing manner.
  6. Giving presentation.

Total No. of Student Benefited:

69 students participated from S.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to give the presentations on the given topics.

Pre-implementation Reflection:

- Some students were not willing to participate which was actual necessary for the execution of activity.

- Less number of students was involved in the activity.
- Low confidence for presentation.

Post Implementation reflection:

- Students were able to apply and analyze topics given.
- All the students presented the topics effectively
- Students' feedback reflected that they have understood the concepts .

1. Learning Outcomes/ Program Outcomes	PO6	PO8	PO9	PO10	PO12
LO4: The students will be able to analyze and enact the topics accordingly.	2	1	1	1	2

POs Mapped: PO6, PO8, PO9, PO10

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO6	Student will **Apply** the 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.
PO8	Student will **analyze and understand** the importance of human rights ,its philosophical and historical perspective and apply these ethical principles for committing the responsibilities and norms of the engineering practice
PO9	Student will **understand** the importance of human rights , its philosophical and historical perspective for functioning effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Students will understand perspective for effective communication 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
PO12	Students teams demonstrate and 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.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO6, PO8, PO9, PO10, PO12

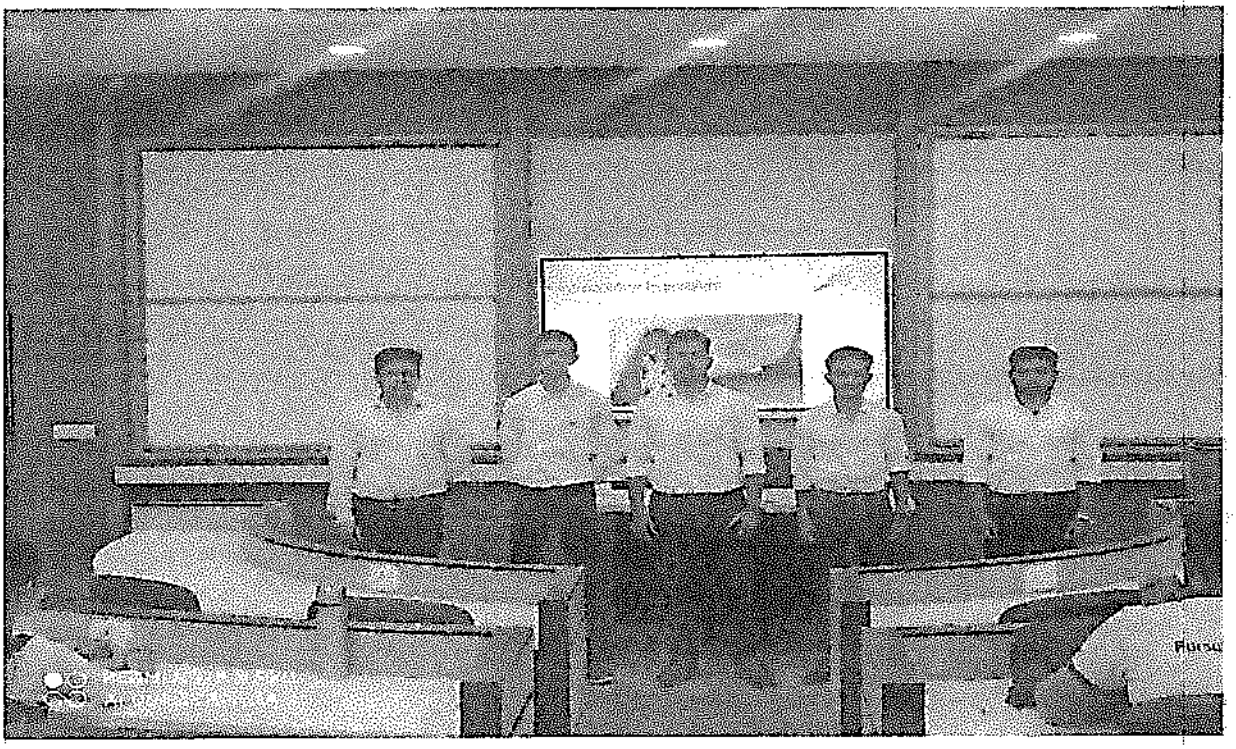
- **Evaluation Team(Judges):**
  Prof. Khalid Alfatmi

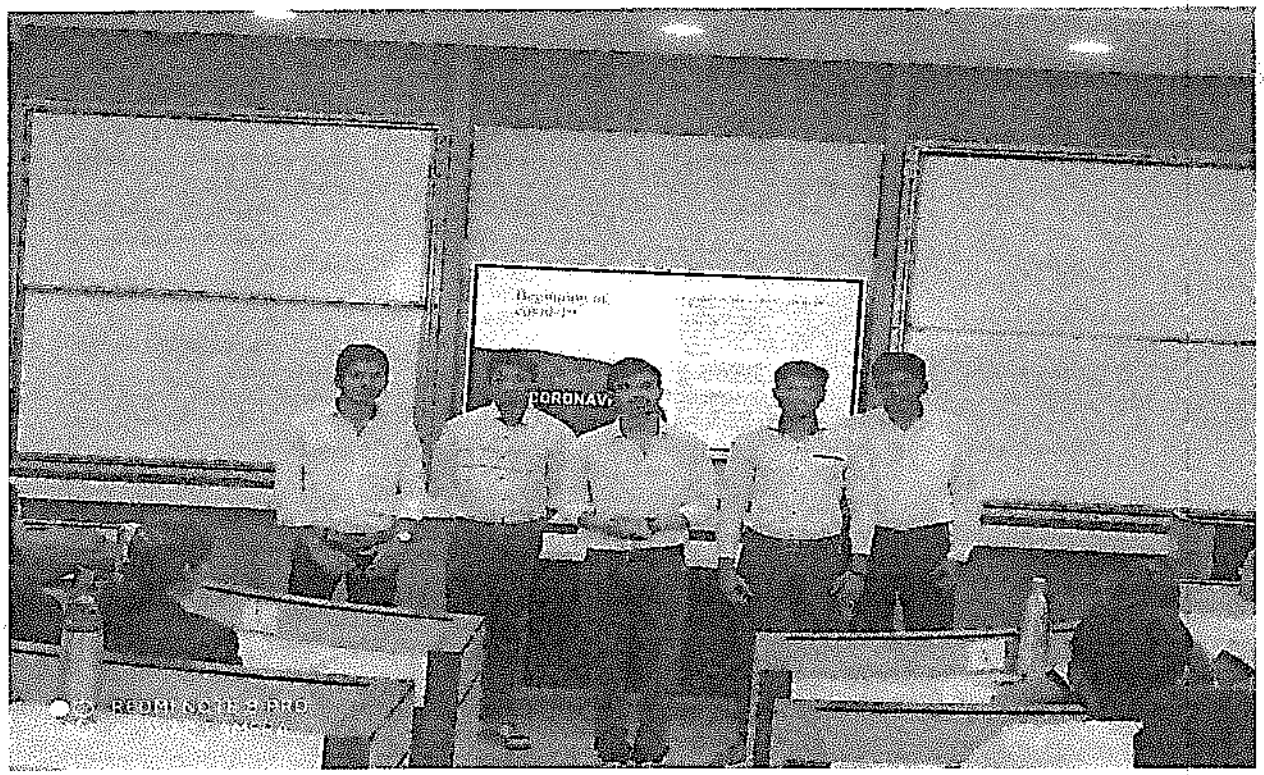
  Prof Vijaylaxmi Bittal

- **Teams: Total 14 teams**
- **Team details:**

Group	Roll N	Student 1 Full Nam	Roll N	Student 2 Full Nam	Roll N	Student 3 Full Name	Roll Numbe	Full Name 4	Roll Numbe	Full Name 5	Topic Name	Presentation Date
1	5	Pratham Bhagat	6	Pratik Bhagt	15	Murtaza Jarif	42	Saifuddin Saife	52	Sarvagya Varma	Human rights and Human Duties: -Origin, Contribution of American bill of rights,	4/5/2022
2	21	Waidehee Kele	28	Sakshi Pagariya	41	Ashiya Ashok	46	Chaitanya Shai	54	Samruddhi Wad	French revolution	4/5/2022
3	60	Rupesh Chavan	62	Rahul Relan	35	Manish Patil	1	Kunal Ahirrao	27	Bhavesh Rikam	Declaration of independence, Rights of citizen, Rights of working and exploited people.	5/5/2022
4	50	Rushikesh Sonwane	17	Chetan Kachhava	36	Nishad Patil	39	Yash Patil			Fundamental rights and economic programme	5/5/2022
5	9	Vaishnavi Chaudhari	33	Ketaki Patil	61	Manashri Patil	65	Mayuri Vispute	68	Vaishnavee Pati	Impact of social structure on human behavior	9/5/2022
6	11	Neha Deshmukh	43	Nikita Sali	37	Utkarsha Patil	66	Dhanashri Shir	67	Netra chaudhari	Social Structure and Social Problems	18/5/2022
7	4	Rushikesh Badgujar	13	Gagan Jarsodiwala	23	Deep Mahajan	48	Shubham Aragi	63	Anuranjan Singh	NGOs and human rights in India: -Land, Water, Forest issues.	11/5/2022
8	69	Ishwari Bhavsar	40	Sakshi Pingale	19	Darshana Karbhari	53	Ashwini Vibhar	44	Shrushti Salunkh	Human rights in Indian constitution and law:-	30/5/2022
9	55	Isha Sanjay Wagh	59	Yeshi Pratiksha Arun	2	Hemashri Amrutkar	49	Sonawane Isha	51	Suryavanshi Vai	Universal declaration of human rights and provisions of India,	19/5/2022
10	3	kalpesh Badgujar	22	Pritam Jokhande	38	Vishwajit patil	20	prathamesh ka	25	Dipak mali	Constitution and law	12/5/2022
11	14	Anushka Jain	12	Ruchi Dhamecha	35	Mansi Patil	45	Nayan Sayaji	64	Nilesh Khandeka	National human rights commission and state human rights commission.	18/5/2022
12	26	Sakshi Mandwekar	29	Sakshi Pande	58	Krutika Yeola	10	Purva Chavan			Social causes/effects for indian economy	18/5/222
13	56	Harshal Raju Waghare	7	Sanket Borse	8	Tejas Borse	57	Pranav Wani	47	Piyush Mahesh	Engineering solutions for social problem	19/5/2022
14	13	Jayesh Garud	30	Harshal R. Patil	31	Harshal V. Patil	18	Shubham Kalsekar			Effect of covid19 on indian citizens health and how indian govt managed in giving safety of health in terms of human rights	19/5/2022

- **Photographs of Event:**

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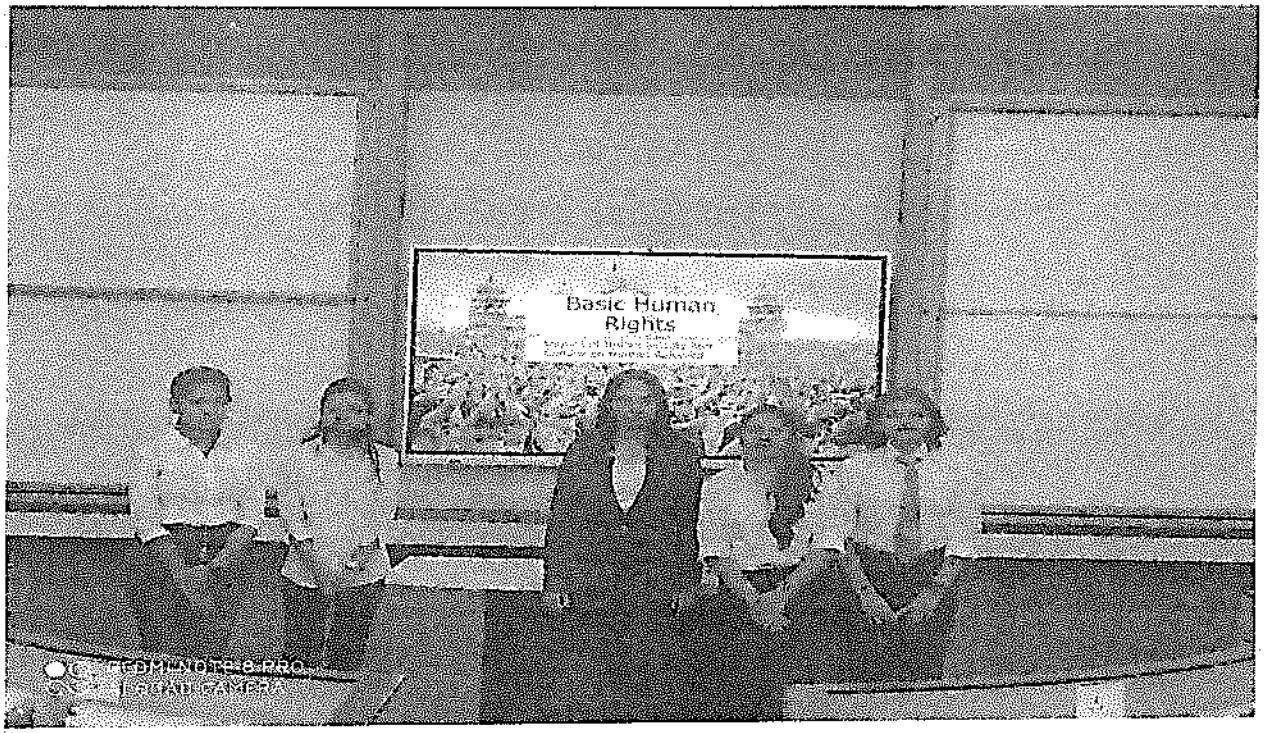
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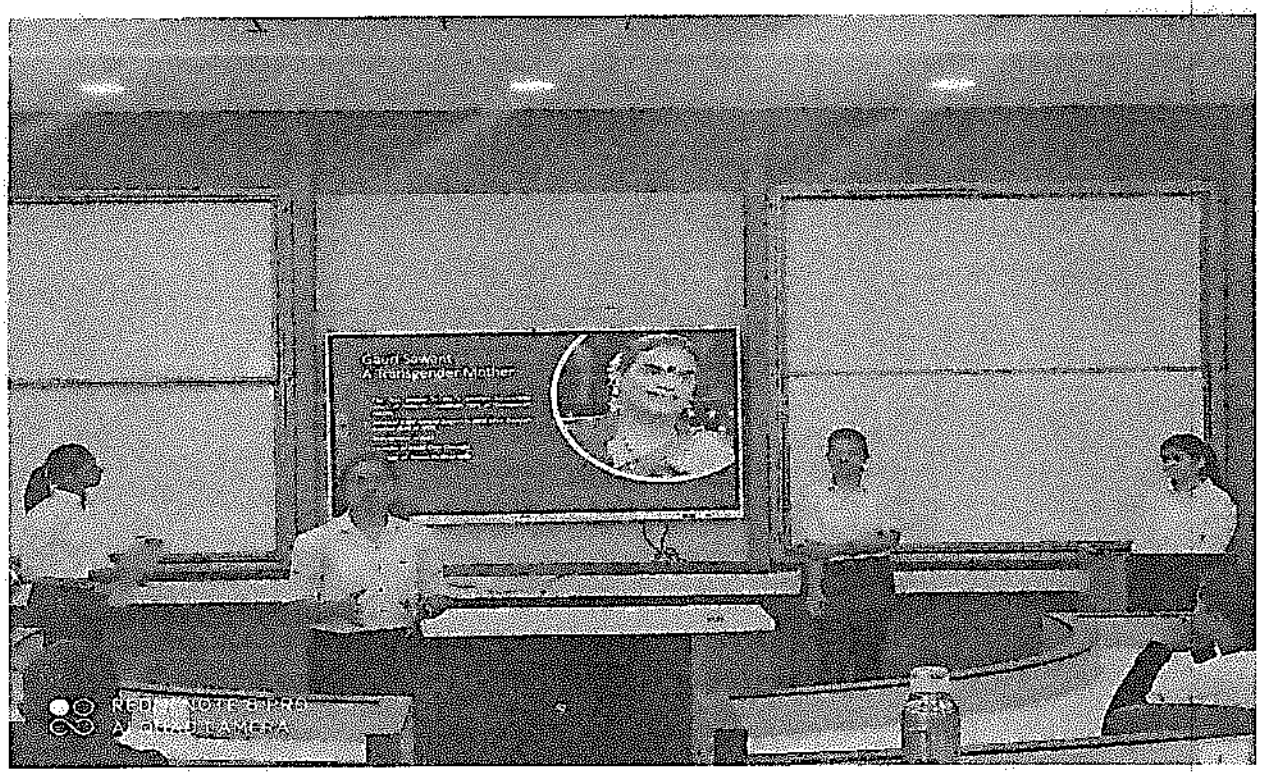
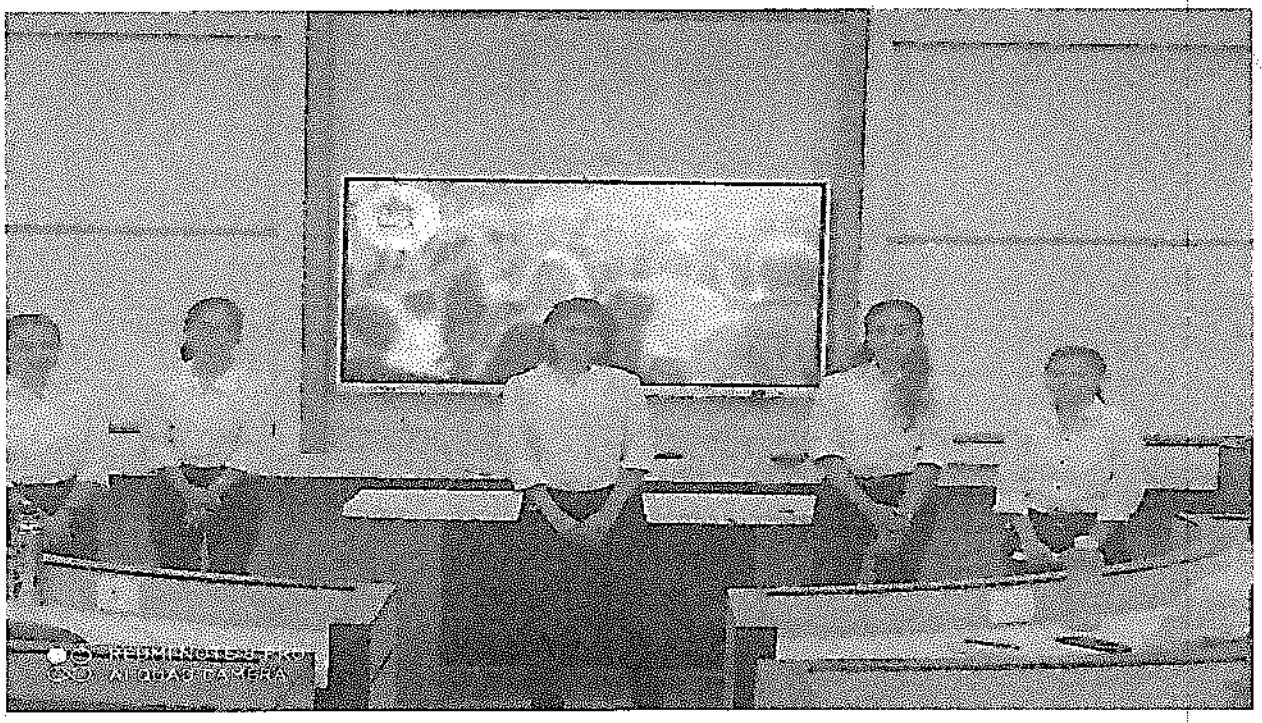
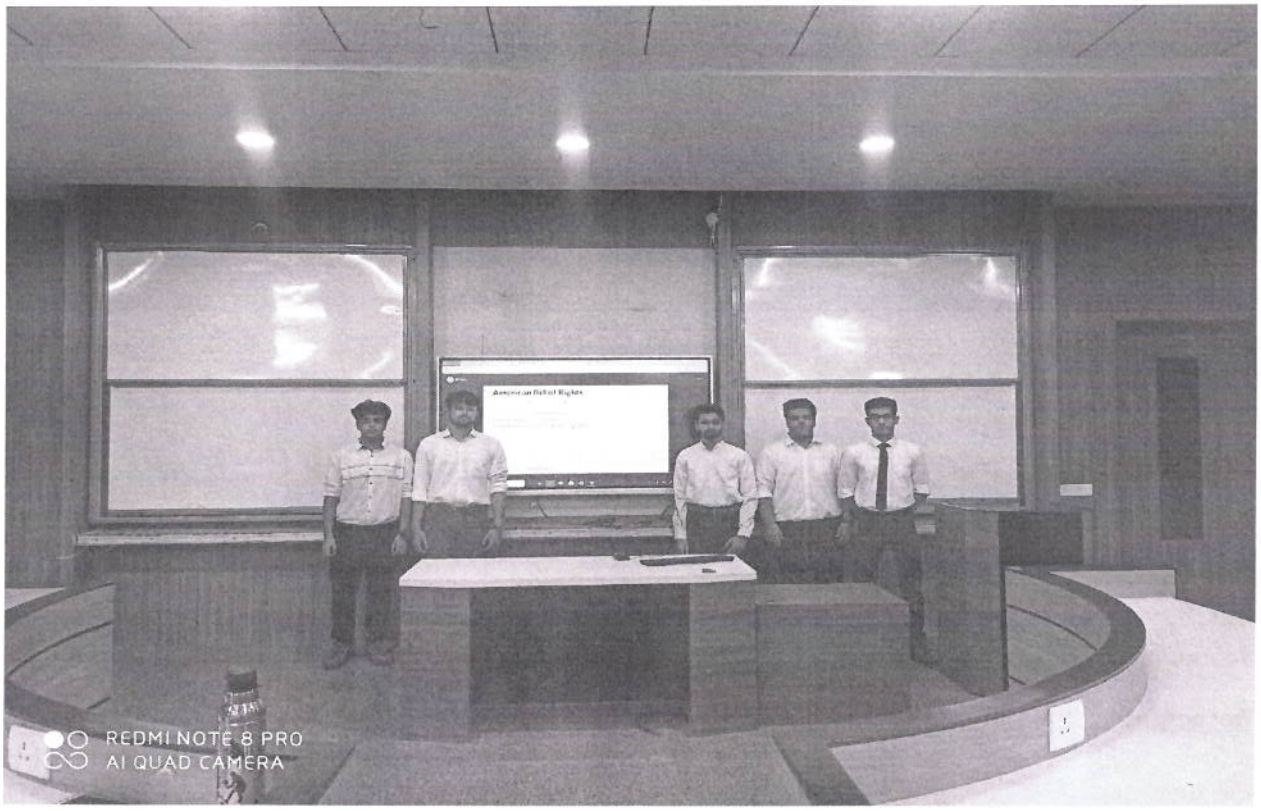

Gauri Sawant:
A Trans Gender Mother

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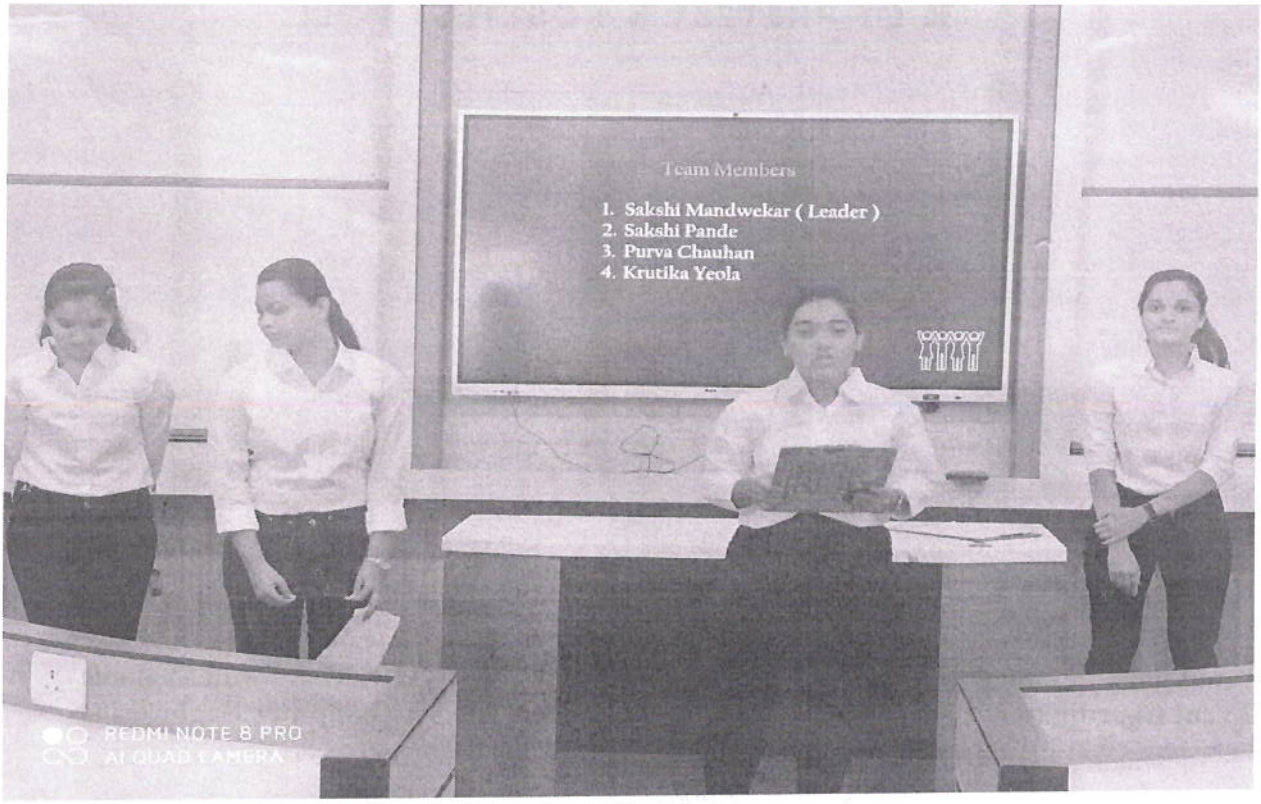
Team Members
1. Sakshi Mandwekar (Leader)
2. Sakshi Pande
3. Purva Chauhan
4. Krutika Yeola
REDMI NOTE 8 PRO
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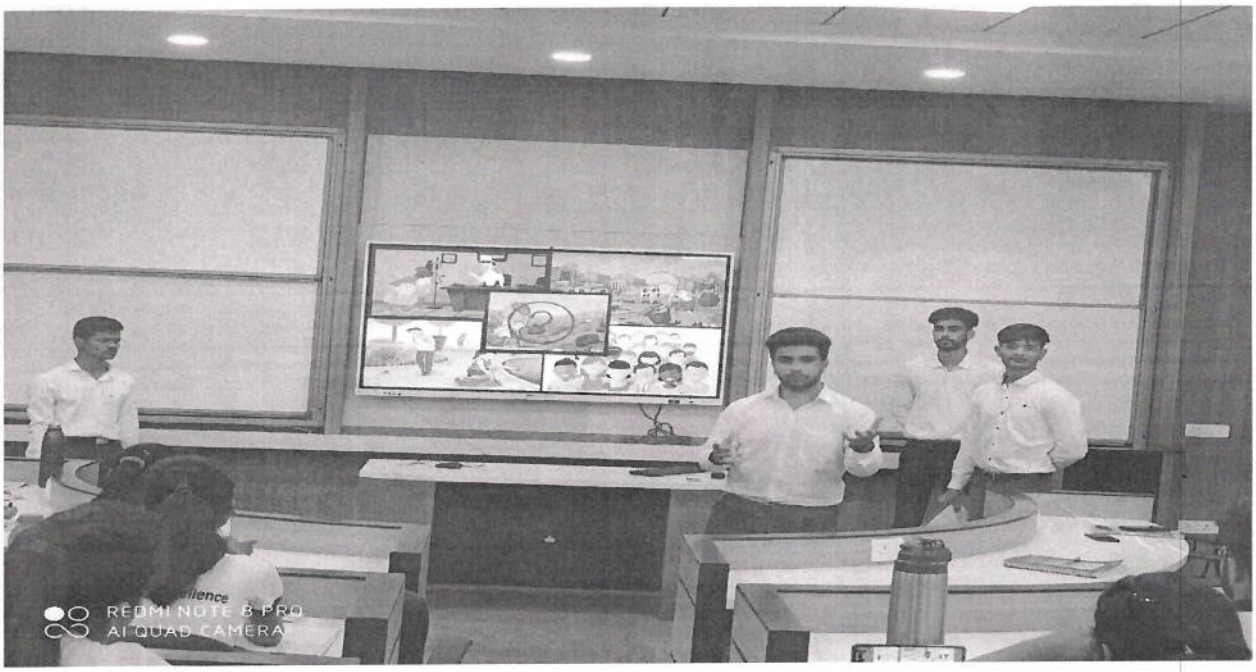

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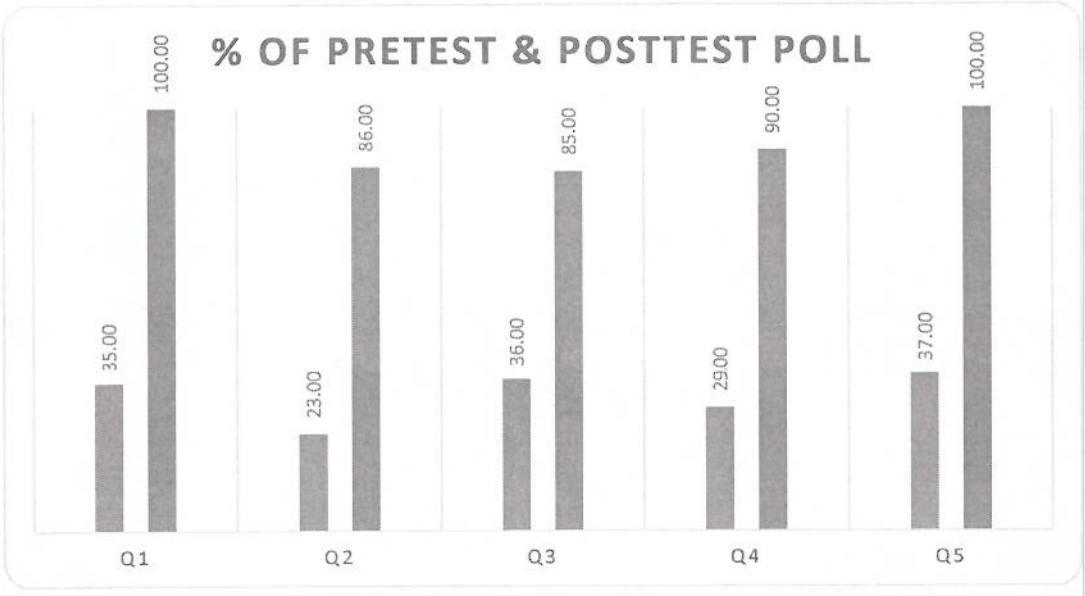

Prof Vijaylaxmi Bittal
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

Dr. Makarand Shahade
Computer Engineering

21-22 (13)

Shree Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

Approved by AICTE & Affiliated to DBATU

DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**26th May 2022**
Time	:	**05:00 pm**
Venue	:	**Class room : 209**
Course Code & Title	:	**BTCOC602 Computer Network**
Learning Strategy	:	**Simulation**
Topic	:	**Simulation of DNS, FTP, Web and E-mail server configuration**

Simulation:

Simulation gives the virtual visualization of network and insights of network. A network simulator is used to model and analyze network behavior and performance. It assists students in testing and evaluating network protocols and applications without the need to build real networks.

Benefit of the simulation:

- Students can visualize network design and parameters.
- Students can know actual implementation of application layer protocols.
- Students can feel the network setup and hands on experience with networking devices.

Course Outcome:

CO5: To demonstrate working of Application Layer Protocols and describe basics of network security.

Goal:

The students will be able to work with application layer protocols.

Reason for choosing the particular topic (Method):

Demonstrating application layer protocols and configuration is very much essential through

hands on experience and this makes students learning ability stronger.

How we carried out simulation:

- Installing and set up Cisco Packet Tracer
- Demonstrating configuration of DNS, FTP, Web and E-mail server.

Committee Members: Prof. Vijaylaxmi Bittal, Coordinator

Total No. of Student Benefited:

61 students participated from T.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to demonstrate various application layer protocols

Pre-implementation Reflection:

- Many students not able to understand the practical approach of application layer protocols.

Post Implementation reflection:

- Students were able to configure DNS, FTP, Web and E-mail server
- All the students enjoyed the activity.
- Students' feedback reflected that they have understood the concept.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO5	PO12	PSO1	PSO2	PSO3
LO4: **To demonstrate** various Application Layer Protocols involved in application layer.	1	1	2	2	2	2	2	1

POs and PSO's Mapped: PO1, PO2, PO3,PO5, PO12, PSO1, PSO2,PSO3

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will **Apply** the knowledge of engineering to understand network scenario.
PO2	Student will **analyze essential networking parameters in a given network**
PO3	Student will **able to design network as per requirements**

PO5	Students will **use simulators like NS2,Cisco Packet Tracer.**
PO12	Student will be able to understand the importance of Life-Long learning of DNS, SMTP, POP, FTP, HTTP protocol
PSO1	Student ability to analyze and implement the network setup as per requirements
PSO2	Students will provide the networking solutions to real time problems
PSO3	Students can opt network administrator as a profession.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2,PO3, PO5, PO12, PSO1, PSO2,PSO3

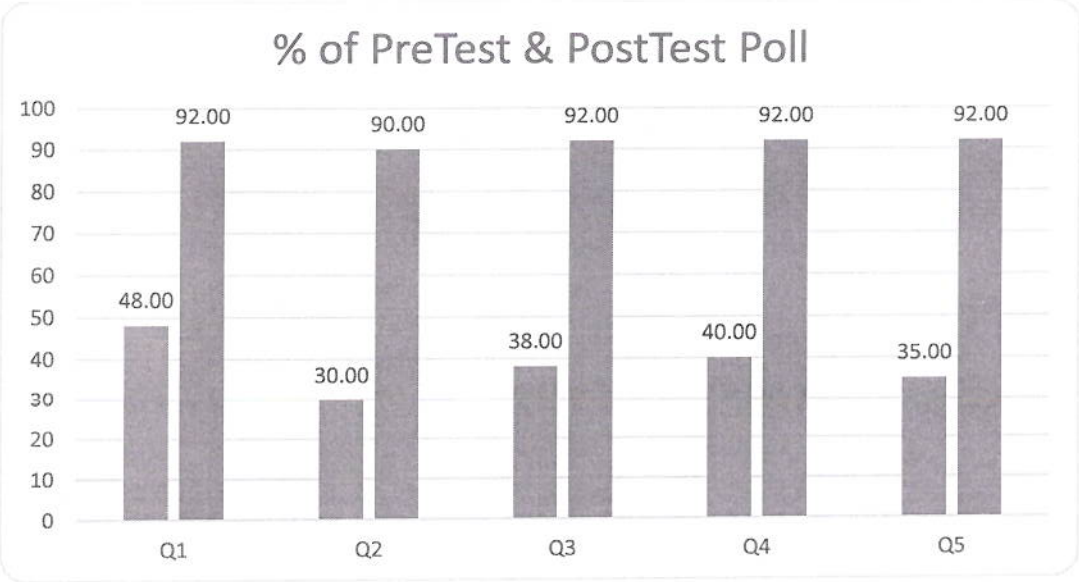

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Vijaylaxmi Bittal
Event Coordinator

Shri Vile Parle Kelavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

21-22 (14)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**03rd June 2022**
Time	:	**09:00 am**
Venue	:	**Computer Center**
Course Code & Title	:	**BTCOC401 Design and Analysis of Algorithm**
Learning Strategy	:	**Virtual Lab**
Topic	:	**Single Source Shortest Path Algorithm (Dijkstra's Algorithm)**

Virtual Lab:

Virtual labs offers students access to a realistic lab experience that will allow them to perform experiments and practice their skills in a risk-free and interactive learning environment.

Benefit of the Virtual Lab:

- Virtual computer labs provide students with unrestricted access to resources, software, and applications round the clock.
- Virtual labs offer a personalized and interactive learning environment. Students can experiment with various software configurations.
- Virtual labs eliminate the need for redundant software installations on multiple machines. This optimizes resource allocation, ensuring that software licenses are utilized efficiently and reducing software procurement costs.
- In science, technology, engineering, and mathematics (STEM) fields, virtual labs offer realistic simulations and experiments. Students can manipulate variables, observe outcomes, and hone their analytical skills in a controlled digital environment.

Course Outcome:

CO4 : To Describe the Greedy paradigm and use this technique to solve different algorithms.

Goal:

The students will be able to understand the greedy methodology for minimum spanning tree.

Reason for choosing the particular topic (Method):
Virtual labs helps the students to simulate the working of single source shortest path algorithm using greedy approach so that they can analyze the shortest path distance from source vertex to other vertex.

How we implemented Virtual Labs:

- The faculty has discussed the concept of single source shortest path algorithm concepts with example the previous day.
- Faculty ask students in lab and explain the virtual lab portal and give overview of Single source shortest path algorithm.
- After overview of Single source shortest path algorithm, students gave pretest required and most of the student's clear the test.
- Later on students understand the dijkstra's algorithm working and then execute the demo.
- Later on students solve the given quiz and posttest on Single source shortest path algorithm.

Committee Members: Prof. Bhushan Nandwalkar, Coordinator

Dr. Makarand Shahade Convener

Total No. of Student Benefited:

56 students participated from S.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to Single source shortest path algorithm.

Pre-implementation Reflection:

- Few students are get difficulties to remember the solving strategy and how greedy approach works to solve dijkstra's algorithm.

Post Implementation reflection:

- Students were able to identify and apply the working of Single source shortest path algorithm
- All the students enjoyed the Virtual Lab
- Students' feedback reflected that they have understood the concept.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO12	PSO1	PSO2
LO4: The students will be able to Implement and Examine concepts Kruskals and prims algorithms.	2	3	2	1	2	1

POs Mapped: PO1, PO2, PO3, PO12, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will **Apply** the knowledge of mathematics to solve the Single source shortest path algorithm
PO2	Student will **analysis** the kruskals and prims algorithm
PO3	Students will be able to apply greedy algorithm concepts while understanding the algorithms
PO12	The problem-solving skill earned through this activity helps the students in motivating lifelong learning.
PSO1	Student ability to analyze and implement the Single source shortest path algorithm
PSO2	Students will provide the solution to Single source shortest path algorithm **problems by applying Dijkstra's algorithm**

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO3, PO12, PSO1, PSO2

References https://ds2-iiith.vlabs.ac.in/exp/dijkstra-algorithm/index.html

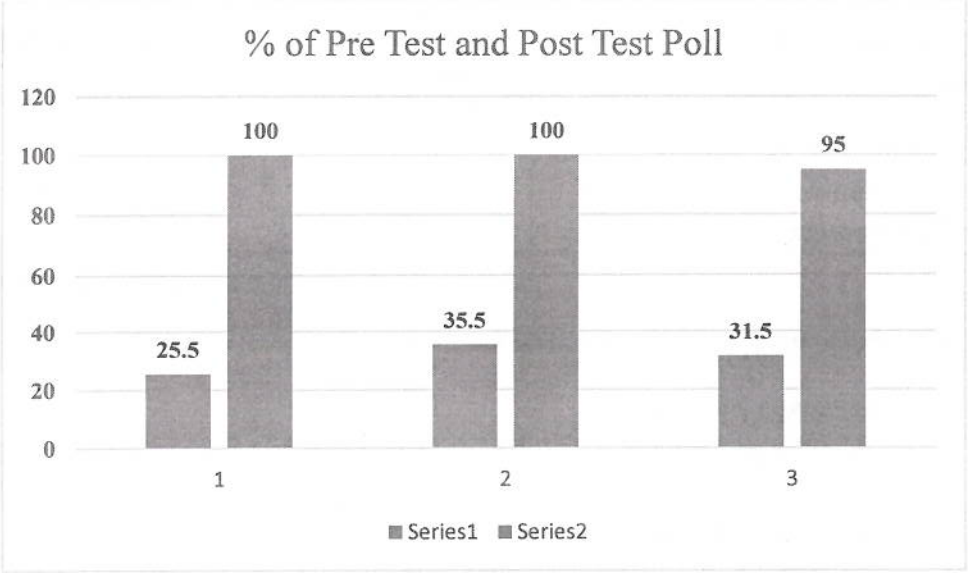

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Bhushan Nandwalkar
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

Dr. Makarand Shahade
HOD, Computer Engineering

22-23 (3)

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2021-22

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**14th May 2022**
Time	:	**05:00 pm**
Venue	:	**Class room : 208**
Course Code & Title	:	**BTCOC402 Operating System**
Learning Strategy	:	**Role Play**
Topic	:	**CPU Scheduling Algorithms**

Role play:

Role play encourages participation among passive learners, adds dynamism to the classroom and promotes the retention of material.

Benefit of the Role play:

- Students immediately apply content in a relevant, real world context.
- Students can transcend and think beyond the confines of the classroom setting.
- Students see the relevance of the content for handling real world situations.
- The instructor and students receive immediate feedback with regard to student understanding of the content.
- Students engage in higher order thinking and learn content in a deeper way.
- Instructors can create useful scenarios when setting the parameters of the role play whenreal scenarios or contexts might not be readily available.

Course Outcome:

CO2: *To Illustrate concepts of Process as well as Thread Management along with Implement concepts of CPU Scheduling algorithms.*

Goal:

The students will be able to apply various scheduling algorithms.

Reason for choosing the particular topic (Method):

Students are asked to "act out" so they get a better idea of the concepts and theories being

discussed. Role play helps the students to visualize the functioning of CPU scheduling algorithms. In addition, role play is used to empower, engage, and stimulate a classroom by putting students at the Centre of the learning process.

How we implemented Role play:

- The faculty has discussed the concept of FCFS and SJF on the previous day and askedwillingness from the students to role play the concepts on the next day.
- The students formed groups and prepared for the role play.
- The students enacted CPU scheduling algorithms like FCFS and SJF.
- Three processes with different burst time and arrival time are to be executed by theprocessor using FCFS and SJF.
- Students have taken the role of processes and processor.

Committee Members: Dr. Makarand Shahade, Coordinator and Convener

Total No. of Student Benefited:

52 students participated from S.Y. B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to demonstrate various scheduling algorithms.

Pre-implementation Reflection:

- Some students were not willing to participate which necessary for the execution of therole is playing activity.
- Less number of students was involved in the activity.

Post Implementation reflection:

- Students were able to identify and apply the working of scheduling algorithm
- All the students enjoyed the activity.
- Students' feedback reflected that they have understood the concept.
- A scheduler can be added in the next role play in addition to the processor and processesto depict closer to the real scenario in CPU scheduling algorithms.

Learning Outcomes/ Program Outcomes	**PO1**	**PO2**	**PO5**	**PO9**	**PO10**	**PO12**	**PSO1**	**PSO2**
LO4: The students will be able to Implement and Examine concepts of CPU Scheduling algorithms.	**2**	**2**	**1**	**2**	**1**	**2**	**2**	**2**

POs Mapped: PO1, PO2, PO5, PO9, PO10, PO12, PSO1, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Student will **Apply** the knowledge of mathematics to solve the CPU Scheduling algorithms
PO2	Student will **analysis** the CPU Scheduling Problem
PO3	Student will **Draw** Grant Chart for CPU Scheduling Problem
PO5	Students will **use modern IDE tools like NetBeans, Code Blocks, Notebook to solve CPU Scheduling problems**
PO9	Students teams demonstrate how to solve the CPU Scheduling algorithms using role play
PO10	Students Can Communicate working of CPU Scheduling algorithms using role play
PO12	Student can **solve the** CPU Scheduling Problem using various algorithms and Examine the best algorithms for given set of data
PSO1	Student ability to analyze and implement the CPU Scheduling algorithms
PSO2	Students will provide the solution to **CPU Scheduling problems by applying standard CPU Scheduling algorithms**

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO5, PO9, PO10, PO12, PSO1, PSO2

References:

https://serc.carleton.edu/introgeo/roleplaying/whatis.html

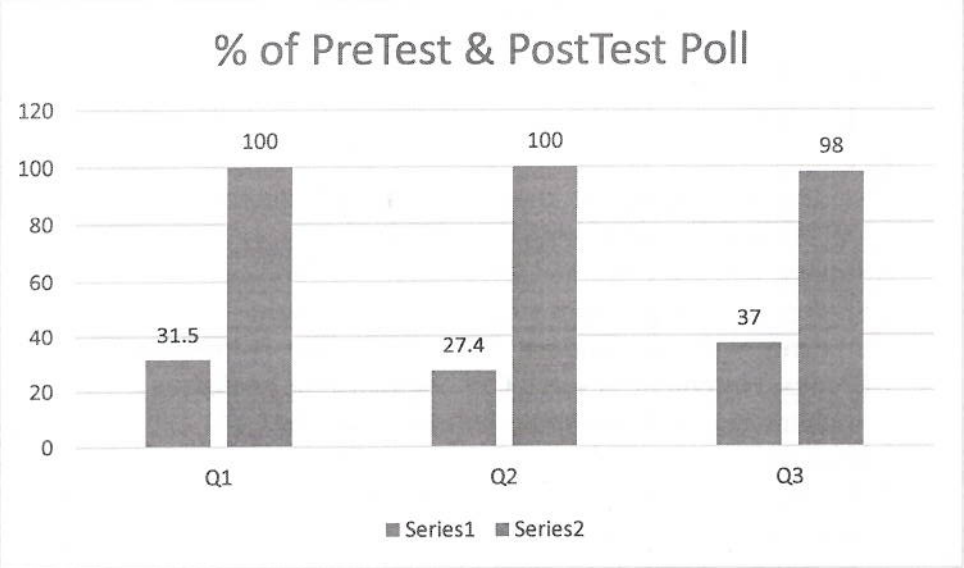

Fig. PreTest and PostTest Poll Before & After of Event

Dr. Makarand Shahade
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology DHULE

Dr. Makarand Shahade
HOD, Computer Engineering

Shri Vile Parle Kelavani Mandal's

Institute of Technology, Dhule

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DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2020-21

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**30 June 2020**
Time	:	**09:00 am**
Venue	:	**Class room : 209**
Course Code & Title	:	**BTCOC504(A) & Blockchain Technology**
Learning Strategy	:	**Simulator**
Recourse person	:	**Prof. Mayuri Kulkarni**

Blockchain Simulation Tools:

Simulation is a decision analysis and support tool. Simulation software allows students to understand the various concepts of block chains as Block, Nonce, hashing address and mining procedure.

Objectives:

- The objective is to present the design and implementation of a simulator where Block chain can be implemented in a simple.
- Simulation modeling shows the role of previous address and nonce importance for generating the new hash address by considering data contents.
- It provides an important method of which reflects for the same data block chain fundamentals are responsible to generate new addresses.
- A key goal is to encourage the free flow of ideas.

- **Activity Details:**
  1. The working of simulation is explained in the class.
  2. Later the Blockchain Demo link is provided to students and asked them to check the values of nonce, hash for same data and for different data.

3. Later explain the concept of Peer and performed the same operations on the peers.
4. Analyzed the results with and without peer.
5. It indirectly helps the students to gain insight about block, mining, hashing and nonce.

Total No. of Student Benefited:

69 students participated from B. Tech Computer Engineering Department.

Learning Outcomes of Activity:

The students were able to understand the concept of block, miner, nonce, pervious address and hash function.

Pre-implementation Reflection:

- Some students were unable to understand the importance of previous hash function for generating new hash address.

Post Implementation reflection:

- Students were able to do the simulation as explained.
- All the students actively participated and enjoyed the conversation.
- Students' feedback reflected that they have understood the concepts.

POs Mapped: PO1,PO2,PO5,PO12,PSO1

Learning Outcomes/ Program Outcomes	**PO1**	**PO2**	**PO5**	**PO12**	**PSO 1**
TLO1 *To recognize various concepts in blockchain technology such as Ledger, Public Ledger, block and blockchain, hashing function, hashing properties.*	**3**	**2**	**1**	**1**	**1**

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	**JUSTIFICATION**
PO1	To gain and apply Knowledge of Engineering fundamentals such as Ledger, Block in a block chain, Hashing function, Markel Tree and Security Aspects of Blockchain
PO2	To Identify the role of different properties associated with blocks to make system more efficient using mathematical and engineering sciences.
PO5	The students can learn and use of different modern tools.
PO12	To apply basics of block, ledger and blockchain are required throughout the application designing in application development domain

PSO1	Ability to understand Ledger concepts and operation on public ledgers. To analyze different properties associated with hash functions and compare different hashing functions.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1,PO2,PO5,PO12,PSO1

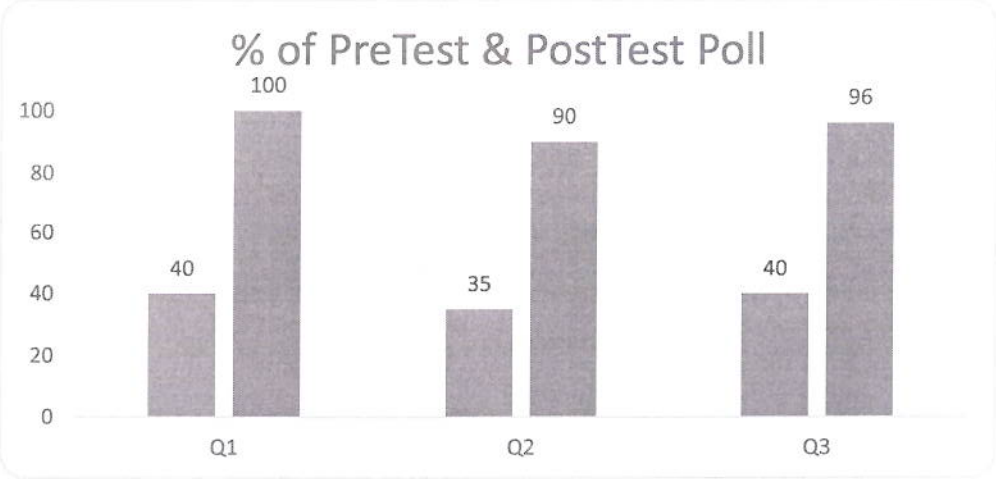

Fig. PreTest and PostTest Poll Before & After of Event

Prof. Mayuri Kulkarni
Event Coordinator

Shri Vile Parle Kelavani Mandal's DHULE Institute of Technology

Dr. Makarand Shahade
HOD, Computer Engineering

ShriVile Parle Kelavani Mandal's

Institute of Technology, Dhule

Approved by AICTE & Affiliated to DBATU

DEPARTMENT OF COMPUTER ENGINEERING

A.Y 2020-21

Name of Event	:	**INNOVATIVE PRACTICES**
Dates	:	**15 April 2021**
Time	:	**05:00 pm**
Venue	:	**Classroom: 208**
Course Code & Title	:	**BTCOC604 Internet of Things**
Learning Strategy	:	**Simulator**
Topic	:	**Circuit Design**

Tinkercard Simulation

Simulation is a decision analysis and support tool. Simulation software allows students to understand the various concepts of circuit design and virtual testing of hardware before purchasing the actual devices (Hardware)

Objective:

The objective of this activity is to

- Students will be able to understand the basics of circuit design.
- Student will be able to learn & understand working mechanism of IoT application on simulation environment.

Activity Details:

1. The simulator access and available virtual ardunio board explained.
2. Given the idea about basic elements of electronic devices as resisters,diodes,capacitors and gates.
3. Later explained basic principals of components interfacing.
4. After that shown the interfacing of ardunio uni with LED.
5. Later at code editor written code for the LED blinking with delay.
6. Shown the result at simulation environment.

Total No. of Student Benefited:

69 students participated from the Third Year B. Tech Computer Engineering Department.

Learning Outcomes of Activity:
The students were able to understand the interfacing concepts of the electronic components with ardunio and sensors/actuators.

Pre-implementation Reflection:

- Few students found it difficult to interface the componets with the ardunio.

Post Implementation reflection:

- Students were able to do the simulation as explained.
- All the students actively participated and enjoyed the conversation.
- Students' feedback reflected that they have understood the concepts.

Learning Outcomes/ Program Outcomes	PO1	PO2	PO3	PO5	PO 12	PSO2
TLO1 To discuss different Microcontroller boards such as Arduino and RaspberryPi.	1	1	1	2	1	1

POs Mapped: PO1, PO2, PO3, PO5, PO12, PSO2

JUSTIFICATION FOR MAPPING

PO/PSO MAPPED	JUSTIFICATION
PO1	Apply the knowledge of engineering fundamentals of IoT circuit design.
PO2	Identify the various boards, sensors, actuators.
PO3	Design solution for real time applications on simulation platforms.
PO5	Use of modern tools to design the IoT application circuit and to test the output on virtual environment.
PO12	Ability to engage the life-long learning in context with technological change.
PSO2	To understand the standard practice in IoT Circuit design.

PO Attainment:

Rubrics for Attainment:

Attainment Level	Description
Level 1 : Low	60% of students scoring more than set attainment level in the Poll.
Level 2 : Medium	70% of students scoring more than set attainment level in the Poll.
Level 3 : High	80% of students scoring more than set attainment level in the Poll.

Overall Attainment: Level 3(high)

PO's Attained: PO1, PO2, PO3, PO5, PO12, PSO2

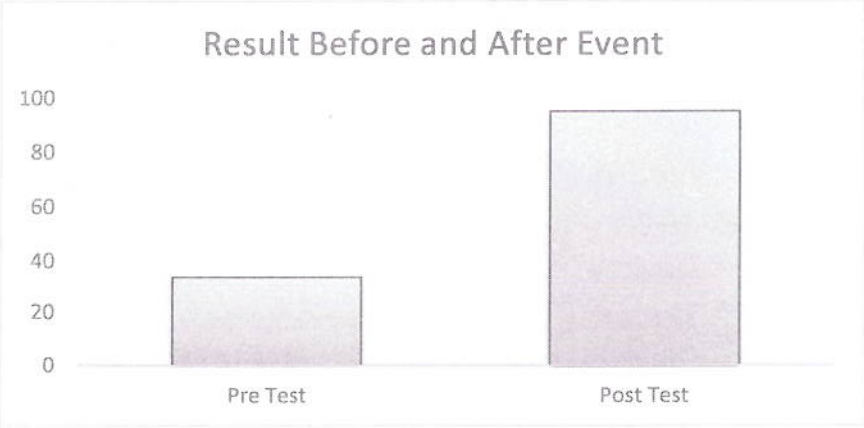

Fig. Feedback of Event After & Before Test

Prof. Mayuri Kulkarni
Event Coordinator

Shri Vile Parle Kelavani Mandal's Institute of Technology OHULE

Dr. Makarand Shahade
HOD, Computer Engineering