DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Innovations by the Faculty in Teaching and Learning

Innovation in Education involves unique teaching methods ,always focusing on better student engagement in the class. Innovation in teaching and learning using more efficient and exciting methods improves academic outcomes.

Innovations contributed to the teaching and learning process for the improvement of student learning are summarized here.

5.5.1.Use of ICT

Information and Communication Technology(ICT) tools impact highly in Teaching and Learning Environment. ICT enables learning beyond the classroom. Faculty members use ICT tools to engage Z-Gen Students to support, enhance and optimize the delivery of information.

- **Smart ClassRooms** - Classrooms are equipped with projectors and internet facility
- **Online Resources** - Use of NPTEL videos, conceptual videos, and animations strengthens and adds value to our teaching-learning process.
- **Learning Management Systems** - Encouraging the students to learn beyond the classroom environment is achieved in our department by using Learning Management System (LMS).Google classroom is created for all the courses through which the students can access learning resources at any time.

2.Instruction Delivery and Methods

- **Active Learning** – Hands on projects,Think-pair-share,Mind Map, One minute speech,Concept cloning, Crossword Puzzle, Jigsaw
- **Collaborative Learning** -Student presentations, Flipped Classes,Role play,Quiz,Brain storming
- **Problem solving methodologies:** Aptitude training,Coding Contest**,** Hackathon events

- **Participative learning :** workshop,seminar,Guest lectures,webinars
- **E- Learning** - NPTEL Videos, Animated videos, Learning Materials

3. Effective Assessment and Evaluation

- **Online Quiz** - Online quiz is conducted through google forms which improves students' learning.
- **Evaluation with answer key** - To maintain transparency in evaluation, answer keys are prepared for all the assessments and discussed with the students.
- **Rubrics in project evaluation and assignment** - To evaluate projects rubrics are framed and the work is assessed based on the uniqueness, presentation, communication skill, and answering the queries.
- **Question Paper audit** - To maintain standards in question papers for internal assessments, a scrutiny committee is framed which comprise senior faculty members.

LIST OF SUBJECTS WITH INNOVATIVE TEACHING PEDAGOGIES ADOPTED

ACADEMIC YEAR 2022-23(ODD SEM)

S.No	Subject Name	Subject Code	Innovative Teaching Method Adapted
1.	CS3301	Data Structures	1.Flipped class 2. NPTEL 3.Research Paper Discussion 4.Demo Class
2.	CS8501	Theory of Computation	1. Flipped Class 2. NPTEL Video 3.Research Paper

3.	CS8591	Computer Network	1. NPTEL 2.Role Play 3.Demo class 4.Simulation
4.	CS8082	Machine Learning Techniques	1.Flipped Class 2Research Paper 3.NPTEL Video 4.Demo Class
5.	CS8083	Multicore Architecture and Programming	1.Flipped Class 2.Research paper 3.Demo Class 4.NPTEL Video class

ACADEMIC YEAR 2022-23(EVEN SEM)

S.No	Subject Name	Subject Code	Innovative Teaching Method Adapted
1.	CS3491	Artificial Intelligence	1.Flipped class 2. NPTEL Video 3.Research Paper
2.	CS3401	Algorithm	1. Flipped class 2. NPTEL 3.Research Paper 4.Demo class
3.	CS8691	Artificial Intelligence	1.Guest Lecture 2.Flipped Class 3.NPTEL video

S.No	Subject Code	Subject	Innovative Teaching Method Adapted
4.	CS8601	Compiler Design	1.Flipped class 2.Research Paper 3.NPTEL Video 4.Demo Class
5.	CS8080	Information Retrieval Techniques	1.Flipped class 2.Research Paper 3.NPTEL Video 4.Demo Class

Academic Year 2023-24(ODD Sem)

S.No	Subject Name	Subject Code	Innovative Teaching Method Adapted
1.	CCS375	Web Technology	1.Flipped class 2. NPTEL 3.Research Paper 4.Demo Class
2.	CCS366	Software Testing	1. Flipped Class 2. NPTEL Video 3.Research Paper 4.Demo Class
3.	CS3591	Computer Network	1. NPTEL 2.Flipped Class 3.Role Play
4.	CS8792	Cryptography and Network Security	1.Flipped Class 2.Cross Word Puzzle 3.NPTEL Video 4.Demo Class

5.	CS8083	Multicore Architecture and Programming	1.Flipped Class 2.Research paper 3.Demo Class 4.NPTEL Video class
6.	CS8791	Cloud Computing	1.Flipped Class 2.Research paper 3.Demo Class 4.NPTEL Video class
7.	CS3301	Data Structures	1.Flipped Class 2.Research paper 3.Demo Class 4.NPTEL Video class
8	CS3352	Foundations of Data Science	1.Flipped Class 2.Research paper 3.Demo Class 4.NPTEL Video class

List of Subjects with Assignment

ACADEMIC YEAR 2022-23

S.NO	SUBJECT CODE	SUBJECT NAME
1.	CS3352	Foundation of Data Science
2.	CS3491	Artificial Intelligence and Machine Learning
3.	CS3492	Data Base Management System
4.	CS3401	Algorithm

5.	CCS341	Data warehousing
6.	CCS354	Network Security
7.	CS8691	Artificial Intelligence
8.	CS8592	Object Oriented Analysis and Design
9.	CS8602	Compiler Design
10.	GE8076	Professional Ethics in Engineering
11.	CS8591	Computer Network
12.	CCS375	Web Technologies
13.	CS8080	Information Retrieval Techniques
14.	CS3691	Embedded System and IOT

List of Subjects with Assignment

ACADEMIC YEAR 2023-24

S.NO	SUBJECT CODE	SUBJECT NAME
1.	CCS375	Web Technology
2.	CCS366	Software Testing
3.	CS3591	Computer Network
4.	CS8792	Cryptography and Network Security
5.	CS8083	Multicore Architecture and Programming
6.	CS8791	Cloud Computing
7.	CS3301	Data Structures
8.	CS3352	Foundations of Data Science

Significance of Result :List of Subjects with Highest Percentage Result

ACADEMIC YEAR 2022-23

S.NO	SUBJECT CODE	SUBJECT NAME	RESULT PERCENTAGE
1.	CS3301	Data Structures	81.48
2	CS3491	Artificial Intelligence	96.36
3.	CS3401	Algorithm	90.91
4.	CS8501	Theory of Computation	82.54
5.	CS8591	Computer Network	82.26
6.	CS8691	Artificial Intelligence	95.16
7.	CS8601	Compiler Design	95.16
8.	CS8082	Machine Learning Techniques	91.43
9.	CS8083	Multicore Architecture and Programming	91.43
10.	CS8080	Information Retrieval Techniques	91.18

Significance of Result :List of Subjects with Highest Percentage Result

ACADEMIC YEAR 2023-24

S.NO	SUBJECT CODE	SUBJECT NAME	RESULT PERCENTAGE
1.	CCS375	Web Technology	100
2	CCS366	Software Testing and Automation	100
3.	CS3591	Computer Network	90.57
4.	CS8792	Cryptography and Network Security	95.08

5.	CS8083	Multicore Architecture and Programming	**91.67**
6.	CS8791	Cloud Computing	**88.71**
7.	CS3301	Data Structures	**91.67**
8.	CS3352	Foundations of Data Science	**86.67**

Innovative Practices

Innovative Practice: Demo Class

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Tambaram-Velachery Main Road, Santhosapuram, Chennai-600 073

Department of Computer Science and Engineering

Date: 29.8.2023

ACADEMIC YEAR: 2023-224(ODD SEM)

CCS375-WEB TECHNOLOGIES

Demo Class

on

"DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example"

Objective:
The primary objectives of the class were to:
- Explain the role of JDBC in Java applications.
- Provide an understanding of how to use JDBC for database connectivity.
- Demonstrate a JDBC program for establishing a connection, executing SQL queries, and managing database resources.

Summary:
The demo class provided a comprehensive introduction to JDBC, highlighting its

importance for database connectivity in Java applications. The example program, along with the theory covered, gave students practical exposure to using JDBC for database management tasks. This knowledge is critical for students and developers working with Java applications that require database interactions

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO2	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓	✓

Faculty In Charge

Head of the Department

Innovative Practice :Activity Based Learning: Cross Word Puzzle
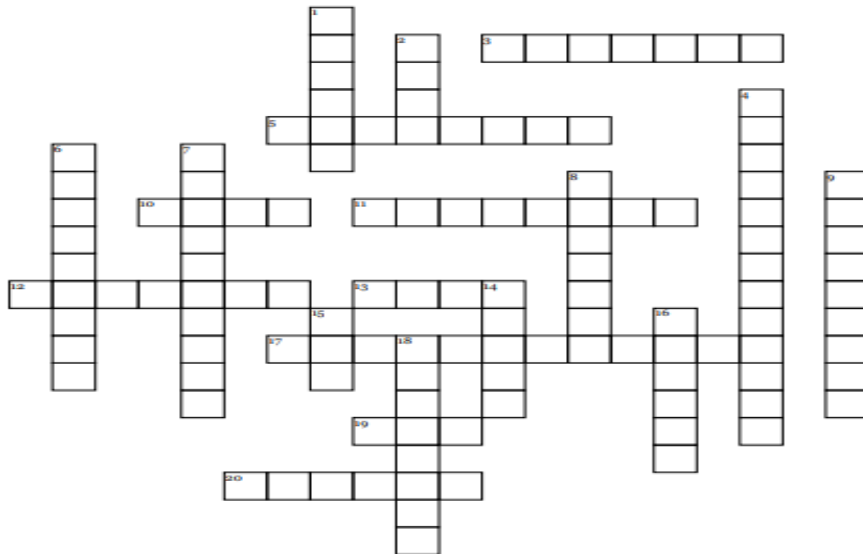
Across

3. a computer program sent to gather information from your computer

5. What is a network security system used to stop unauthorised access

10. type of text stlye and size

11. copy (data) from one computer system to another, typically over the Internet.

12. A client software program that runs against a Web server or other Internet server and enables a user to navigate the World Wide Web (WWW) to access and display data.

13. real-time, synchronous, text-based communication via computer

17. process of converting data into a secret code for transmission over a public network

19. Is a plug-and-play interface that allows a computer to communicate with peripheral and other devices.

20. data sent to your computer by a Web server that records your actions on a certain Web site

Down

1. small program that can be downloaded which allows users to enhance their browser; this allows extra activities of the web

2. Usually consists of eight bits.

4. what is it called if people are nasty to you online?

6. code made up of numbers separated by three dots that identifies a particular computer on the Internet

7. rate at which a processor can complete a processing cycle

8. A device that feeds data into a computer, such as a keyboard or mouse.

9. A software system that links topics on the screen to related information and graphics, which are typically accessed by a point-and-click method.

14. a person who posts inflammatory comments or messages in an online community such as a forum, chatroom, blog or on social networking sites.

15. A web address

16. Sending an email, posting photos on a social media site and using your webcam.

18. The act of trying to access someone's information illegally

Word Bank

Monitor	IPADDRESS	CRYPTOGRAPHY	firewall	clockspeed
cookie	hypertext	upload	byte	download
browser	usb	chat	cyberbullying	malware
troll	phishing	plugin	url	font

Innovative Practice: Cross word Puzzle

Innovative Practice :Flipped Class

COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2023-24

Innovative Practice in Application of lists sparse matrix , pattern matrix

Department	:	CSE
Course Code & Title	:	CS3301 / Data Structure
Semester / Year	:	III Sem / II Year
Name of the Faculty Member	:	Dr . R . Ahila

Name of the Topic	Name of the Activity	Date	Duration
Application of lists sparse matrix , pattern matrix	Flipped Class	24.11.2023	1 Periods

Topic: Application of lists sparse matrix, pattern matrix

- The topic was discussed in the class.
- The topic was discussed and the concepts were shared among them.
- The students actively participated in the discussion. Finally, they conducted 5-minute questionnaires as a summary.
- In the discussion, doubts were raised, other students cleared it with right answers, here peer learning has been accomplished.
- Subject in-charge concluded the discussion.

CO-PO-PSO Mapping:
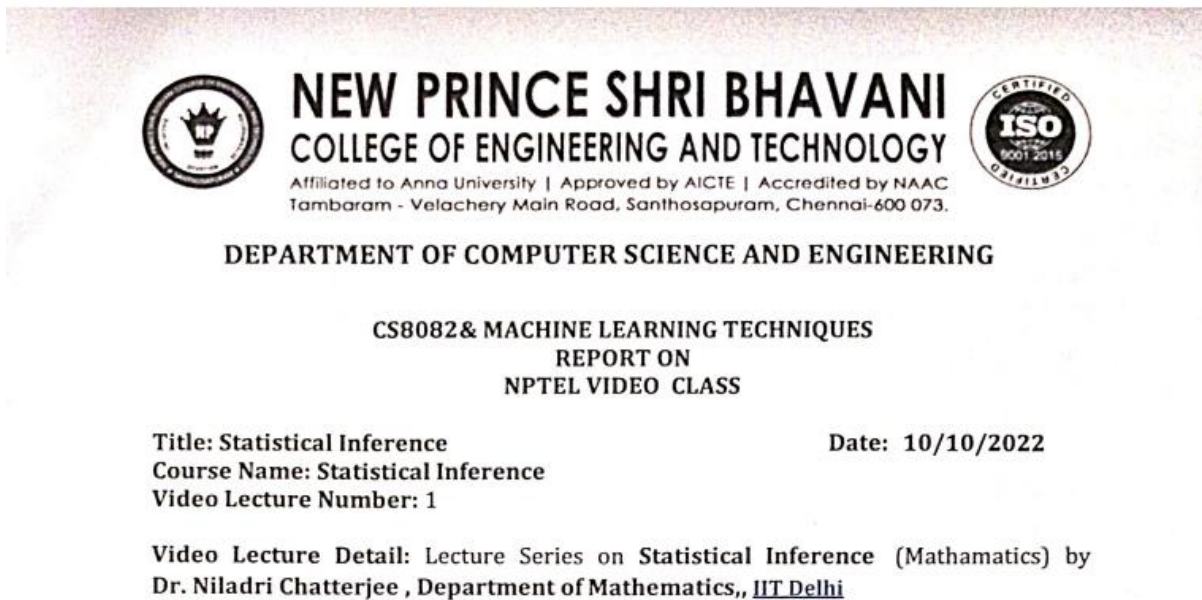
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	1	1	-	-	-	2	2	2	1	2	2	2

Signature of the Faculty Member   HOD

Innovative Practice: Flipped Class

Innovative Practice :NPTEL Video Class

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CS8082& MACHINE LEARNING TECHNIQUES
REPORT ON
NPTEL VIDEO CLASS

Title: Statistical Inference   **Date: 10/10/2022**
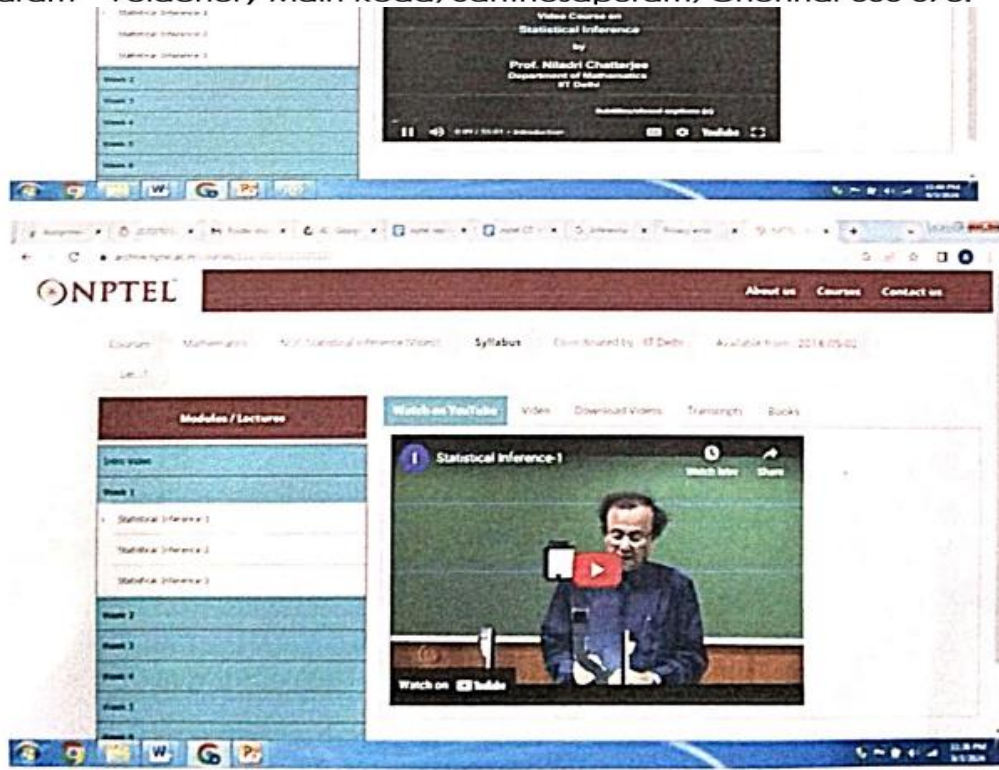**Course Name: Statistical Inference**
Video Lecture Number: 1

Video Lecture Detail: Lecture Series on **Statistical Inference** (Mathamatics) by Dr. Niladri Chatterjee , Department of Mathematics,, IIT Delhi
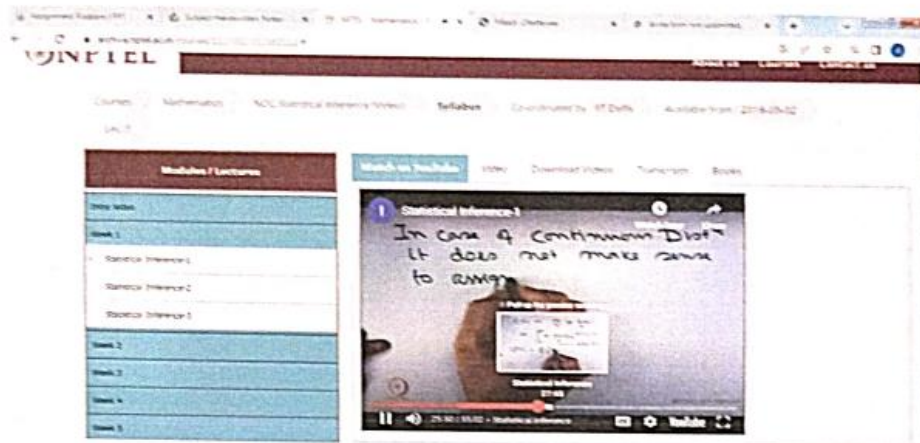
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Report on NPTEL Video Lecture: Statistical Inference

The NPTEL video lecture series on Statistical Inference, presented by Dr. Niladri Chatterjee from the Department of Mathematics at IIT Delhi, provides a comprehensive exploration of key concepts in the field of statistics. Dr. Chatterjee expertly breaks down complex ideas, making them accessible to students and professionals alike.

Throughout the series, Dr. Chatterjee covers the fundamentals of statistical inference, focusing on how we can make conclusions about populations based on sample data. He delves into essential topics such as point estimation, interval estimation, hypothesis testing, and the principles underlying these methods. The lectures also emphasize the importance of understanding the assumptions behind statistical methods and how to apply them appropriately in various contexts.

One of the highlights of the series is the clear explanation of the mathematical foundations that underpin statistical inference. Dr. Chatterjee uses real-world examples to illustrate these concepts, which helps in understanding the practical applications of statistical inference in fields like science, engineering, and economics.

Overall, this lecture series is an invaluable resource for anyone looking to deepen their understanding of statistical inference, providing both theoretical knowledge and practical insights.

Faculty In-Charge   Head of the Department

Innovative Practice: Quiz

CCS375 WEB TECHNOLOGIES
"BLOCKCHAIN DEVELOPMENT FOR WEB APPLICATIONS"
QUIZ QUESTIONS

1. Blockchain is a peer-to-peer _____ distributed ledger technology that makes the records of any digital asset transparent and unchangeable.
- A. Decentralized
- B. Demanding
- C. Secure
- D. Popular

Answer: A) Decentralized

2. Blockchain networks are much ____ and deal with no real single point of failure.
- A. Simpler
- B. Easier to scale
- C. Convenient
- D. Faster

Answer: B) Easier to scale

3. Bitcoin is a cryptocurrency, which is an application of Blockchain.
- A. True
- B. False

Answer: A) True

4. Blockchain can perform user transactions without involving any third-party intermediaries.
   A. With the help of the third party
   B. Without involving any third party
   C. Without involving any owned
   D. Without involving any authenticated
Answer: B) Without involving any third party

5. What does P2P stand for?
   A. Peer to Peer
   B. Product to Product
   C. Password to Password
   D. None of the above
Answer: A) Peer to Peer

6. Blockchain has ___ versions.
   A. 2
   B. 3
   C. 4
   D. 5
Answer: B) 3

7. Who introduced the digital online cryptocurrency known as Bitcoin?
   A. Satoshi Nakamoto
   B. Nick Szabo
   C. Wei Dai
   D. Hal Finney
Answer: A) Satoshi Nakamoto

8. A blockchain enables peer-to-peer transfer of digital currency without any intermediaries such as banks.
   A. False
   B. True
Answer: B) True

9. Did Blockchain enable a centralized or a decentralized system for the exchange of value?
   A. Decentralized
   B. Centralized
   C. None of the above
   D. Can't say
Answer: A) Decentralized

10. What does a block in a Blockchain have?
   A. Header & Digital ledger
   B. Bitcoins & Input
   C. Transactions & Bitcoins
   D. Header & Transaction

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Answer: D) Header & Transaction

Innovative Practice :Role Play

DEPT: BE CSE CLASS   : III YR/V SEM

COURSE CODE & TITLE   :   CS3591 COMPUTER NETWORK

NAME OF THE FACULTY MEMBE   :Dr.G.B.SANTHI

Name of the Topic	Name of the Activity	Date	Duration
1. Congestion Control - Leaky Bucket Algorithm	Role Play	02.09.24	2 Periods

   Students Engaged in Role play activity in the topic of Congestion Control- Leaky Bucket Algorithm .Roly Play activity give students the opportunity to assume the role of a person or act out a given situation.   These roles can be performed by individual students, in pairs, or in groups which can play out a more complex scenario.

![New Prince Shri Bhavani College of Engineering and Technology logo](#)

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Reflective Critique:

❖ **Feedback of Practice from Students and Other Stakeholders**

1. Active Learning is accomplished through Role play activity
2. Students understood the topic better through Role play
3. Students are interested in these learning practices

❖ Benefits of the Practice

1. Students studied the topic before the class for flipped learning
2. Students Learned skills used in real-world situations
3. Almost all the students are engaged in role play activity

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO2	2	2	2	2	-	-	-	2	2	2	-	2	2	2

Signature of the Faculty Member   HOD

Innovative Practice: Project Based Learning

Creating Product-driven Technology

Date: 24&25.09.2024   **Venue: Seminar Hall, Main Block**

Productathon 2K24-Creating Product-driven Technology Organized by the Department of Computer Science and Engineering in association with NPSBCET Computer Society of India (CSI) student branch and the Indian Society of Technical Education (ISTE) Student Branch on 24th and 25th of September 2024. This event was specifically organized for third-year students to enhance their practical skills and foster innovation.

Event Details:

- ➢ Dates: 24th and 25th September 2024
- ➢ Participants: Third-year Computer Science students
- ➢ Organizers: Computer Science Department, Computer Science Society, ISTE Student Branch Organization

Trainers:

1. Mr. M. Mohammed Rashid
   - Position: Software Engineer
   - Organization: TCS Chennai
   - Role: Mr. Rashid provided valuable insights into software development practices and guided students through hands-on sessions on the latest technologies.
2. Ms. V. Vaarani Devi

- Position: Software Engineer
- Organization: TCS Chennai
- Role: Ms. Devi shared her expertise in software engineering, focusing on project management and agile methodologies, and conducted interactive workshops to enhance students' technical skills.

Event Highlights:

- Workshops and Sessions: The event featured a series of workshops and interactive sessions led by the trainers, covering various aspects of software development, project management, and innovative thinking.
- Hands-on Projects: Students were divided into teams and tasked with developing innovative software solutions, which they presented at the end of the event.

- Networking Opportunities: The event provided a platform for students to interact with industry professionals and gain insights into the latest trends and practices in the field of computer science.
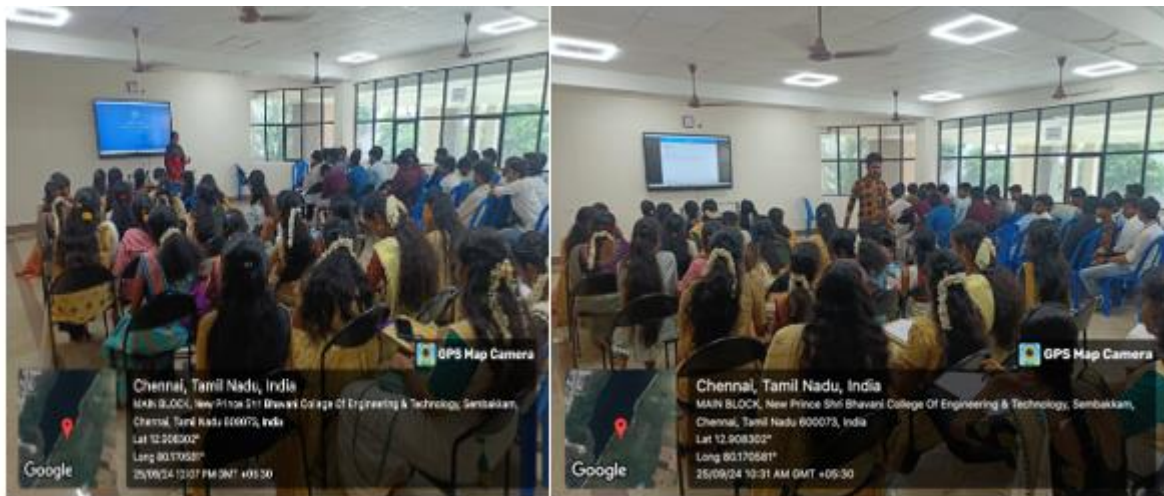
Conclusion:

Productathon 2K24 was a resounding success, providing third-year students with a unique opportunity to apply their theoretical knowledge in a practical setting, develop new skills, and network with industry experts. The event was well-received by participants and organizers alike, and it set a high standard for future events.

Innovative Practice: Collaborative Learning

ObjectiveTo uplift the caliber of final year students in their respective domain. To inculcate the team building skills,leadership qualities, self learning , to make them understand the industrial approach, to uplift thecoding skills etc.

About the Programme:

The Programme is implemented in collaboration with IBM. It is scheduled as different phases mentioned below with specified time duration. A batch of 4/5 students are allotted with a Mentor whohelps them periodically in completing the assignments/projects. Faculty Evaluator evaluates the work done by the students in all aspects and allots mark for each student. In the final evaluation, the Code, Project report, Project Demonstration will be reviewed and entire score card for each students will be submitted.
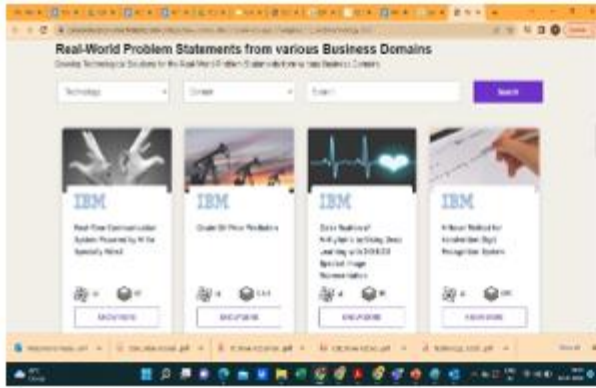
Students Journey:
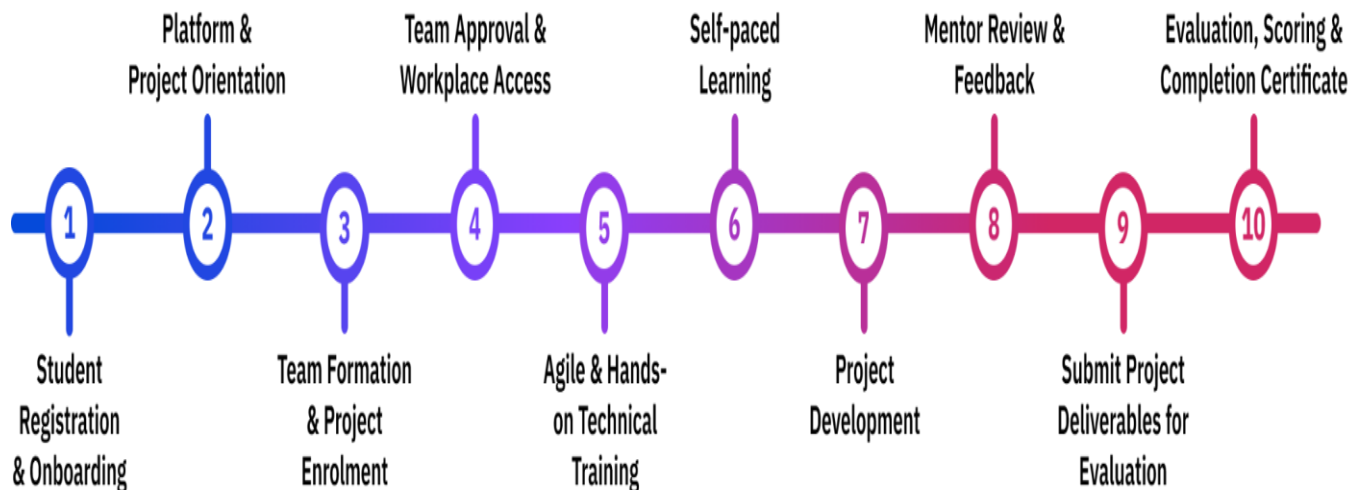
List of Real-World Problem Statements

IBM CLOUD ACCOUNT

ANACONDA SETUP

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Innovative Practice Sample Assignment

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2023-24(ODD SEM)
CCS375-WEB TECHNOLOGIES
ASSIGNMENT

Instructions:

1] Write the observations, inference, notes for each assignment separately. Take photograph of the observations wherever necessary and attach the photograph along with note with explanation of the details.

2] Submit the assignment as single file for all questions at the end of the class room teaching for unit V. A clear instruction with last date of submission will be informed to all students through notice board and announcement in the laboratory sessions.

S.No	Assignment task	Marks	CO	PO
1	Design a restaurant website for a fictional restaurant. This website should showcase the restaurant's menu, ambience and contact information.	20	1	PO1, PO2, PO3, PO4, PO10,PO12
2	Design a Dynamic Registration form for a website. The form should collect the following information from users: Full Name, Email Address, Password and confirm password .Then design an interactive form with Java Script-based validation to ensure that user inputs are accurate and meet certain criteria.	20	2	PO1, PO2, PO3, PO4, PO6, PO8, PO10,PO12
3	Create a user registration system for a website. System should allow users to sign up by providing their details, and the entered data should be stored in a database. You'll need to use Servlets for handling server-side logic and JSP for generating dynamic web pages	20	3	PO1, PO2, PO3, PO4, PO8, PO10, PO12
4	Create a simple product catalog web page using PHP and XML. The catalog should display a list of products along with their details retrieved from an XML file. Your web page should be an interactive web page that dynamically generates content based on the XML data.	20	4	PO1, PO2, PO3, PO4, PO8, PO10, PO12
5	Design and develop any web application using AngularJS.	20	5	PO1, PO2, PO3, PO4, PO6, PO8, PO10,PO12

STAFF INCHARGE

HEAD OF THE DEPARTMENT