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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique implemented: Role Play

Subject: Data Structures

Topic: Binary Search Tree

Name of the Faculty: B. Sailaja

Class/ Section: II B.Tech

Implementation:

Objective: "Students gain a better understanding of the subject"

Out Class activity: Made one team to play the roles and informed the students how to presenttheir roles

In class activity: Each student of the team represents a number , with a growing tree formed by adding one student at a time.

Outcome: It provides real-world scenarios to help students learn innovatively.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique implemented: Flipped Classroom

Subject: DBMS

Topic: Employee Management System

Name of the Faculty: Mr.V.Narsing Rao

Class/ Section: II B.Tech

Implementation:

A flipped classroom for a **Employee Management System** project is a great way to engage students in understanding and applying database management concepts. Here's how you can organize it:

1. Pre-Class Activities (Self-Learning):

Provide students with the foundational knowledge and resources they need to understand the key concepts before coming to class.

Topics to Cover:

- **Database Management System Basics:** What is DBMS, its importance, and components.
- **Entity-Relationship (ER) Model:** Concepts like entities, attributes, relationships, primary keys, and foreign keys.
- **SQL Basics:** Queries for creating, inserting, updating, and deleting tables.
- **Normalization:** Why it's needed and its levels (1NF, 2NF, 3NF).
- **Case Study of an Employee Management System:** Explain how the system would store and manage employee records, departments, attendance, etc.

Learning Resources:

- Slides or notes on DBMS concepts.
- Exercises on SQL queries and ER diagrams.

2. In-Class Activities (Interactive Sessions):

Focus on hands-on exercises, discussions, and problem-solving during class.

Activities:

1. **Quick Recap:**

- Start with a 5–10 minute quiz or discussion to gauge understanding of the pre-class materials.

2. **ER Diagram Design:**
   - Assign students to design an ER diagram for the Employee Management System.
   - Include entities like Employee, Department, Salary, Attendance, etc., and relationships such as "works in" or "reports to."
3. **Database Schema Creation:**
   - Have students convert their ER diagrams into a relational database schema.
   - Discuss normalization and apply it to their schema.
4. **SQL Query Practice:**
   - Provide a dataset and ask students to write and execute SQL queries:
     - Add a new employee.
     - Retrieve all employees in a specific department.
     - Calculate average salary per department.
     - Update employee details.
     - Delete a record of an employee who has left.
5. **Debugging Activity:**
   - Present students with a faulty database design or query and have them identify and fix the errors.

3. Post-Class Activities (Reinforcement):

Assignments:

- Design a fully functional Employee Management System using DBMS software (e.g., MySQL, PostgreSQL).
- Implement features such as:
  - Adding new employees.
  - Retrieving employee details.
  - Managing departmental budgets and salaries.

Peer Review:

- Have students review and provide feedback on each other's designs and implementations.

Reflection:

- Write a short report about challenges faced and lessons learned.

Outcome:

This flipped classroom approach makes learning more active and application-oriented, ensuring students understand both the theoretical and practical aspects of DBMS.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Interactive Learning Method: Project based Learning

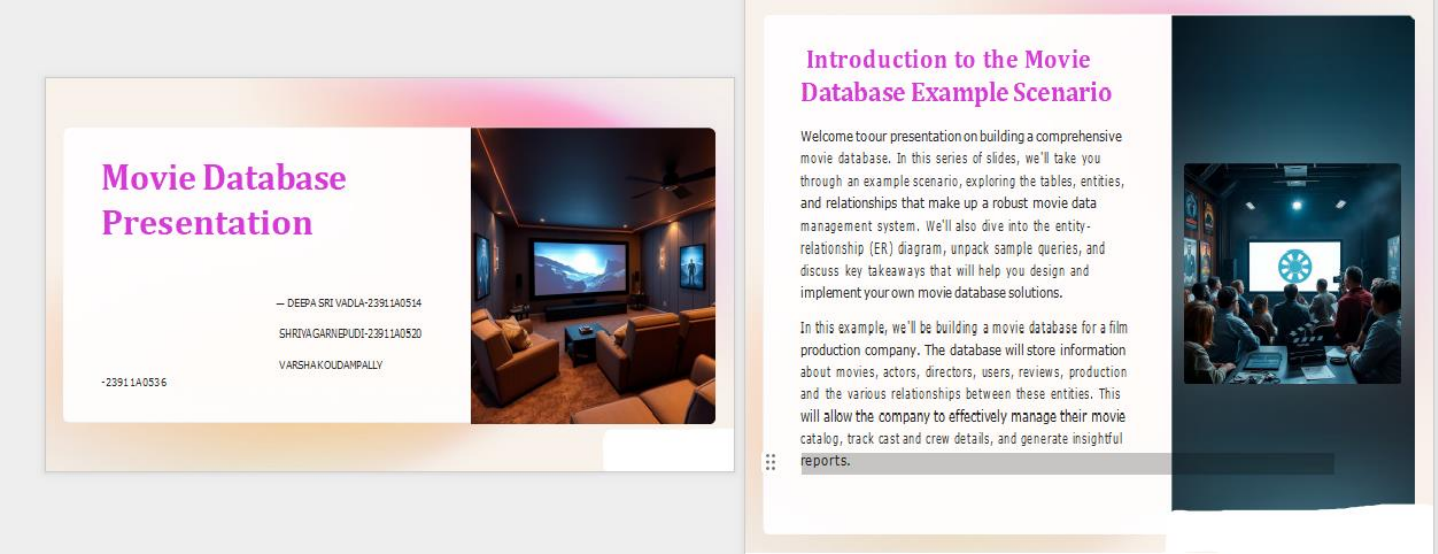
Faculty Name:A.Swarna

Subject :DBMS

Class/section : CSE/II-I

Implementation:

Project based learning is a model and framework of teaching and learning where students acquire content knowledge and skills in order to answer a driving question based on an problem, need, challenge and concern. Project based learning is done collaboratively and within groups, using a variety of employability skills such as critical thinking, communication and creativity.



Survey of the Movie Database Example:

Entities in a Movie Database

Movie

Attributes: Movie ID (Primary Key):Int, Title: Varchar, Release Date: Date, Genre: Varchar, Duration: Time, Language: Varchar;

Director

Attributes: Director ID (Primary Key):Int, Movie ID(Foreign Key): Int, Director Name: Varchar, Gender: Varchar;

Actor

Attributes: Actor ID (Primary Key): Int, Movie ID(Foreign Key): Int, Actor Name: Varchar, Gender: Varchar;

User

Attributes: User ID (Primary Key): Int, Movie ID(Foreign Key): Int, Username: Varchar, Email: Varchar;

Production

Attributes: Production ID (Primary Key): Int, Movie ID(Foreign Key): Int, Production Name: Varchar;

movie_id	Title	Release date	Genre	Duration	Language
1	Baahubali2	28-04-2017	Action/fantacy	197m	Telugu
2	Stree 2	15-08-2024	Horror	147m	Hindi
3	Devara: Part 1	27-07-2024	Action	165m	Telugu
4	Manjummel Boys	22-02-2024	Thriller	135m	Malayalam
5	Avengers: Endgame	26-04-2019	Sci-fi	181m	English

ACTOR:

actor_id	actor_name	actor_gender	movie_id
1	Prabhas	Male	1
2	Shraddha Kapoor	Female	2
3	Jr. NTR	Male	3
4	Sreenath Bhasi	Male	4
5	Robert Downey Jr.	Male	5

producer_id	producer_name	movie_id
1	Shobu & Prasad	1
2	Dinesh & Jyothi	2
3	Kalyan Ram	3
4	Soubin	4
5	Kevin Feige	5

REVIEW:

review_id	movie_id	user_id	Rating
8001	1	2301	8
8002	2	2302	7
8003	3	2303	6
8004	4	2304	8
8005	5	2305	8

USER:

movie_id	user_id	user_name	email
1	2301	Shriya Reddy	shriyareddy@gmail.com
2	2302	Sanjana T	sanjanat@gmail.com
3	2303	Nischay Malhan	nischaymalhan@gmail.com
4	2304	Amrutha V	amruthav@gmail.com
5	2305	M Abhishek	mabhishek@gmail.com

Entity-Relationship (ER) Diagram for the Movie Database Example

ENTITIES:

MOVIE: Represents a movie with attributes like movie ID, title, release date, language, duration, and genre. DIRECTOR: Represents a director with attributes like director ID, name, and gender.

ACTOR: Represents an actor with attributes like actor ID, name, and gender.

PRODUCTION_COMPANY: Represents a production company with attributes like production company ID, name, and location.

REVIEW: Represents a review written by a user about a movie with attributes like review ID, rating, text, and created date.

USER: Represents a user who writes reviews with attributes like user ID, name, email, and password.

RELATIONSHIPS:

DIRECTS: A director directs a movie.

ACTS_IN: An actor acts in a movie.

PRODUCES: A production company produces a movie.

WRITES: A user writes a review.

REVIEWS: A user reviews a movie.

Queries for the Movie Database Example

1. Retrive all movies along with their with a specific genre Horror?

Select Title, Release Date from Movie where Genre=Horror;

Output:

Title	Releasedate
Stree2	08/15/2024

2. Get review of a movie with movie id=1 with columns username, review id and Rating?

Select username,review_id, rating from Review natural join user where Movie Id = 1;

Output:

review_id	Username	Rating
8001	Shriya Reddy	8

3. Create a view named movie_info and should include attributes movie id, release date, actor name, director name?

Create view movie_info as select Movie ID, Release Date, Actor Name, Director Name from Movie natural join Actor natural join Director ;

select * from movie_info;

Output:

m_id	Release Date	ActorName	DirectorName
1	4/28/2017	Prabhas	Rajamouli

4. Write a queries to display movie titles along with their actor names?

Select Title, actor name from Movie natural join Actor;

Output:

Title	ActorName
Baahubali 2: The conclusion	Prabhas
Stree2	Shraddhakappor
Devara: Part 1	Jr. NTR
Manjummel Boys	Sreenath Bhasi
Avengers: Endgame	Joe Russo

5. Write a querie to display movies whose duration is more than 2 hours?

select Title from Movie where Duration<='120 min';

Output:

Title
Baahubali 2: The conclusion
Stree2
Devara: Part 1
Manjummel Boys
Avengers: Endgame

6. Write a querie to find genre of the telugu movies along with their director names and Producer Names?

select genre, director name , Producer name from Movie natural join Director natural join

NORMALISATION

1. Unnormalized Form (UNF):

Assume a single table with all attributes:

Movie ID	Title	Release Date	Genre	Duration	Language	DirectorName	Actor Name	ReviewRating	Username	ProductionName
1	Baahubali2	2017-04-28	Action/Fantasy	180 min	Telugu	Rajamouli	Prabhas	9	Shriya Reddy	Shobu & Prasad
2	Stree2	2024-08-15	Horror	120 min	Hindi	Rajkummar Rao	Shraddha Kapoor	8	Alex	XYZ Production

1. First Normal Form (1NF)

- Eliminate repeating groups.
- Each attribute contains atomic values.

Movie ID	Title	Release Date	Genre	Duration	Language	DirectorName	Actor Name	ReviewRating	Username	ProductionName
1	Baahubali2	2017-04-28	Action	180 min	Telugu	Rajamouli	Prabhas	9	Shriya Reddy	Shobu & Prasad
1	Baahubali2	2017-04-28	Fantasy	180 min	Telugu	Rajamouli	Prabhas	9	Shriya Reddy	Shobu & Prasad

1	Action	1
2	Fantasy	1
3	Horror	2

Director Table

DirectorID	DirectorName	MovieID
1	Rajamouli	1
2	Rajkummar Rao	2

Actor Table

ActorID	ActorName	MovieID
1	Prabhas	1
2	Shraddha Kapoor	2

Review Table

ReviewID	ReviewRating	Username	MovieID
1	9	Shriya Reddy	1
2	8	Alex	2

Production Table

ProductionID	Production Name	Movie ID
1	Shobu	1
2	XYZ Production	2

3. Third Normal Form (3NF)

- Remove transitive dependencies (e.g., separating username details into a User table).

4. Boyce-Codd Normal Form (BCNF)

A table is in BCNF if:

1. It is in 3NF.
2. Every determinant is a candidate key.

Analysis:

- A determinant is an attribute that uniquely determines another attribute.
- For the tables already in 3NF, we need to check if any non-prime attribute (not part of any candidate key) determines another non-prime attribute.

Example Issue: In the `Genre Table`:

GenreID	Genre	MovieID
1	Action	1
2	Fantasy	1
3	Horror	2

Here, `MovieID` determines `Genre` because a movie can only have certain genres. However, `MovieID` is not a candidate key (since `GenreID` is the primary key).

BCNF Solution:

Split the table to ensure no partial dependency exists:

1. **Movie-Genre Relationship Table**

MovieID	GenreID
1	1
1	2
2	3

1. **Genre Table (Independent)**

GenreID	Genre
1	Action
1	Fantacy
2	Horror

5.Fourth Normal Form (4NF)

A table is in 4NF if:

1. It is in BCNF.
2. It has no multi-valued dependencies (MVDs), where one attribute in a table is independent of another attribute but depends on the same primary key.

Consider if a movie has multiple **actors** and multiple **genres**, which creates an MVD:

MovieID	ActorName	Genre
1	Prabhas	Action
1	Prabhas	Fantasy
2	Shraddha Kapoor	Horror

The **ActorName** and **Genre** are independent but linked via MovieID.

4NF Solution:

Decompose into two independent tables:

1. **Movie-ActorTable**

MovieID	ActorName
1	Prabhas
2	Shraddha Kapoor

1. **Movie-Genre Table**

MovieID	Genre
1	Action
1	Fantasy
2	Horror

6.Fifth Normal Form (5NF)

A table is in 5NF (or Project-Join Normal Form) if:

1. It is in 4NF.
2. It cannot be decomposed further without losing information (lossless decomposition).

Example Issue:

Suppose we add a table for Movie-Actor-Director relationships:

MovieID	ActorName	DirectorName
1	Prabhas	Rajamouli
2	Shraddha Kapoor	Rajkummar Rao
1	Prabhas	Rajamouli
2	Shraddha Kapoor	Rajkummar Rao

This implies a dependency between MovieID, ActorName, and DirectorName. However, if each actor can work with multiple directors across multiple movies, this creates a composite relationship.

5NF Solution:

Decompose into three tables to eliminate dependency cycles:

1. **Movie-ActorTable**

MovieID	ActorName
1	Prabhas
2	Shraddha Kapoor

1. **Movie-DirectorTable**

MovieID	DirectorName
1	Rajamouli
2	Rajkummar Rao

1. **Actor-DirectorTable**

ActorName	DirectorName
Prabhas	Rajamouli
Shraddha Kapoor	Rajkummar Rao

Summary of Refinements

Normal Form	Focus	Adjustments Made
BCNF	Eliminated partial dependencies	Split Genre Table based on dependencies
4NF	Eliminated multi-valued dependencies	Separated Actor and Genre into tables
5NF	Eliminated cyclic/composite dependencies	Decomposed Movie-Actor-Director table

These refinements ensure that the database is free of redundancy and anomalies, fully optimized for scalability and efficient querying.

Conclusion and Key Takėaways

1

Comprehensive Data Management

The movie database example demonstrates the power of a well-designed database system to effectively manage and store data related to movies, actors, directors, and genres.

2

Flexible Querying

The diverse set of queries showcased in this presentation highlights the flexibility of the database, allowing users to extract valuable insights and information based on their specific needs.

3

Informed Decision-Making

The movie database empowers the film production company to make data-driven decisions, optimize their operations, and better understand industry trends and audience preferences.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Interactive Learning Method: Role Play

Faculty Name: K.Ramesh Babu

Subject : FLAT

Topic: DFA

Class/section : CSE/III-I B

Implementation:

Role play is a highly effective teaching method that encourages active learning and helps students develop a variety of skills.

- Engages Students Actively: Role play encourages participation and makes learning more interactive.
- Develops Critical Thinking: Students must think critically and problem-solve as they navigate the roles and situations.
- Enhances Communication Skills Role play helps students improve their verbal and non-verbal communication.

Objective: Demonstrate whether the input string given is accepted by DFA or not.

Roles:

Input 1 – Ayesha

Input 2 – Sandeepa

q1 – Anshul

q2– Gowtham

qf – Bharath

Dead State – Pranav

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Interactive Learning Method: LMS(Google Classroom)

Faculty Name: K.Bhavya

Subject : Computer Networks

Branch/year/section : CSE/III-I B

Introduction:

Google Classroom is a free web-based platform developed by Google for schools, educators, and students to communicate, collaborate, and manage assignments. It helps teachers create, distribute, and grade assignments in an easy way.

Assignment Creation and Submission:

- Teachers can create assignments, attach files (e.g., Google Docs, Slides, PDFs), and set deadlines.
- Students can submit their assignments directly through the platform.

Grading and Feedback:

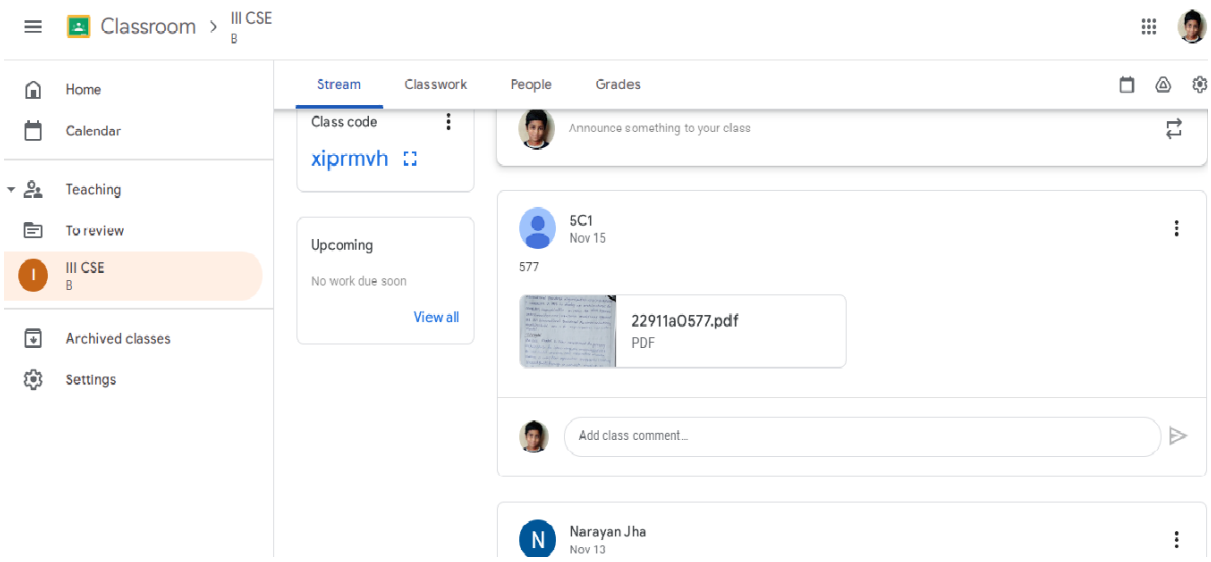
- Teachers can grade assignments, leave comments, and provide feedback.
- Grades and feedback are accessible to students in real time.

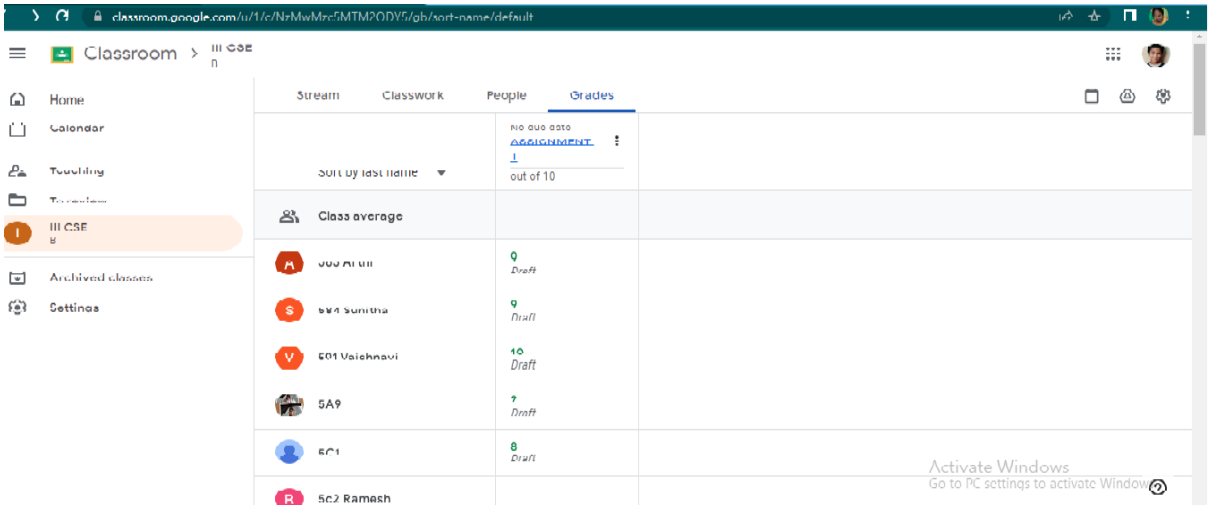
Communication:

- Google Classroom supports real-time communication via the stream. Teachers can post announcements, and students can comment or ask questions.
- Teachers can also send private messages to students.

Class Organization:

- Teachers can organize materials by topics, which makes it easier to find lessons, assignments, and resources.
- Assignments, materials, and class content are accessible from a central location.





Outcome:

Google Classroom is generally used to improve both the teaching experience and the students learning journey. Teachers can share materials with all students easily, and it also provides ease to assign and grade the assignments.

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AY: 2024-25

Interactive Learning Method: Think Pair Share

Faculty Name: K.Shireesha

Subject : Mobile Application Development

Topic: Developing User Interface of Mobile Application

Participants: Students of IV yr B section

Implementation:

Introduction

A mobile user interface (mobile UI) is the graphical and usually touch-sensitive display on a mobile device,such as a smartphone or tablet, that allows the user to interact with the device's apps, features, content and functions.

The user interface (UI) is the point of human-computer interaction and communication in a device. This can include display screens, keyboards, a mouse and the appearance of a desktop. It is also the way through which a user interacts with an application or a website. Mobile user interface (UI) design requirements are significantly different from those for desktop computers. The smaller screen size and touch screen controls create special considerations in UI design to ensure usability, readability and consistency. In a mobile interface, symbols may be used more extensively and controls may be automatically hidden until accessed.

Topic: Designing the User Interface (UI) of a Mobile App

1. **Think (Individual)**:
    - Give students a scenario, such as: *Design the home screen of a weather app.*
    - Gave some time to spend 3-4 minutes thinking about the features and layout they would use, considering aspects like user flow, color schemes, and accessibility.
2. **Pair (Discussion)**:

    - Students pair up to discuss their designs.
    - Asking them to explain their choices and give constructive feedback.
    - Prompted the questions like What challenges might arise in making your design user-friendly?or How would you improve the navigation to make it more intuitive?

3. **Share (Class-wide)**:
    - Few pairs presented their designs to the class.
    - Allowed to facilitate a discussion on the different approaches taken, highlighting any innovative solutions or common mistakes.
    - Asked the students to reflect on the feedback they received from their partners and incorporate it into their understanding.

By using Think-Pair-Share, students get the chance to reflect independently, engage in collaborative discussions, and share their insights in a supportive classroom environment. This approach is especially effective for developing skills that are central to mobile application development, such as design thinking, problem-solving, and effective communication.

OUTCOME:

Students gained the knowledge on networking protocols, Transmission of the packet using TCP and UDP protocols and Protocols for various application in Application Layer protocollike : HTTP.

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AY: 2024-25

Interactive Learning Method : Interactive Learning

Faculty Name: A.Lalitha

Subject : R Programming

Topic: Data Frames and Vectors

Participants: Students of IV yr C section

Content :

Step 1: Introduction to R

Objective: Ensure participants are familiar with the basic structure of R and can perform simple operations in the R environment.

Step 2: Data Structures in R

Objective: Teach participants the different data structures in R, including vectors, lists, data frames, and matrices.

Step 3: Data Manipulation with **dplyr**

Objective: Introduce participants to the powerful data manipulation functions in the **dplyr**package, which is part of the **tidyverse**.

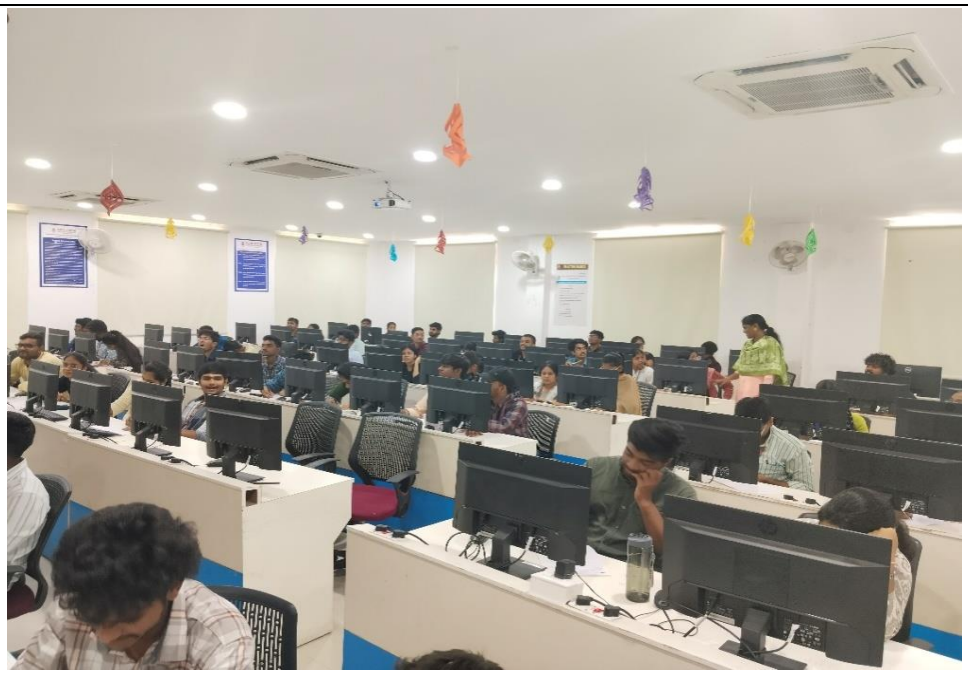
Step 4: Data Visualization with **ggplot2**

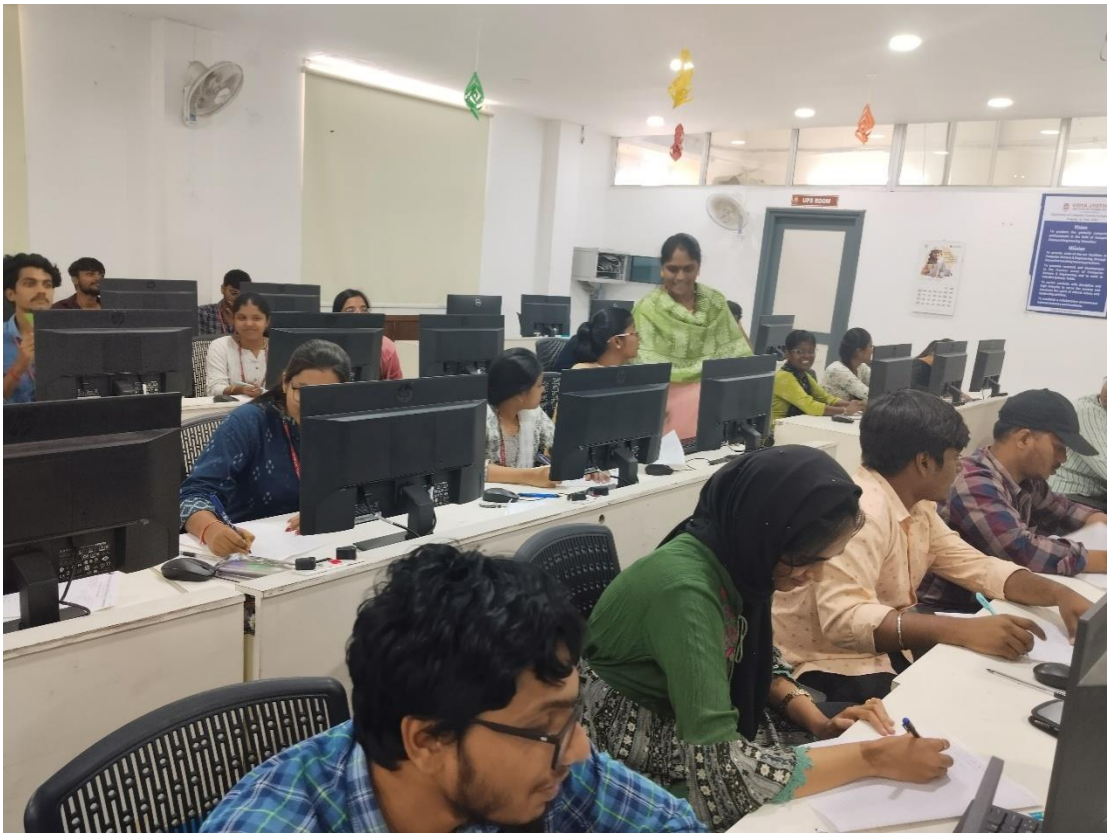
Objective: Teach participants how to visualize data using the ggplot2 package, which is another essential tool from the **tidyverse**.

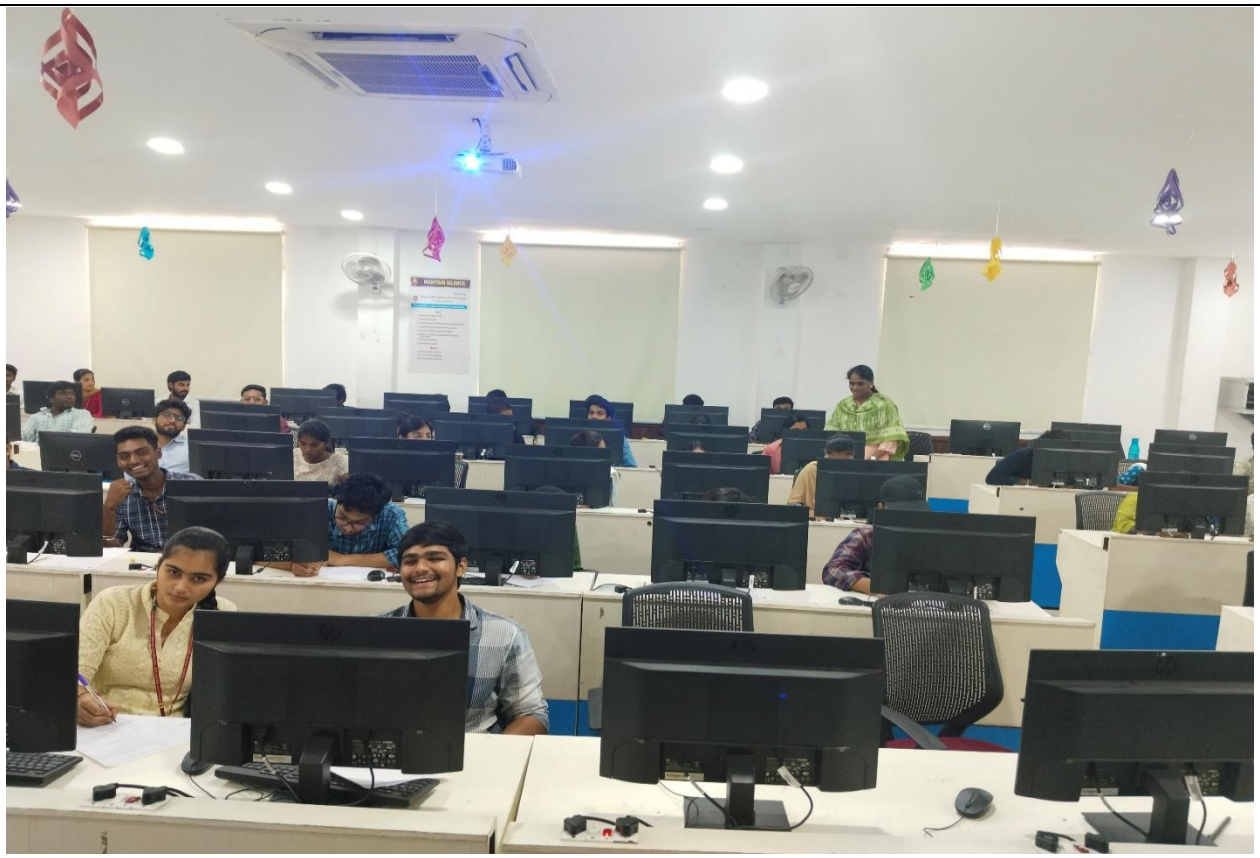
Step 5: Creating Functions

Objective: Teach participants how to create custom functions in R.

Implementation: This session will guide participants through a series of practical tasks, starting with the basics of R programming and progressing to more complex tasks like data manipulation, visualization, and creating functions. Learners will actively run R code, experiment with different methods, and collaborate with their peers to solve problems.







Outcome:

By the end of the hands-on R programming session, participants will have acquired both the technical skills and confidence necessary to perform data manipulation, visualization, and basic function creation in R. This session will lay the foundation for more advanced R programming tasks, enabling learners to continue expanding their expertise in data science and analytics.

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AY: 2024-25

Interactive Learning : Interactive Learning

Faculty Name: Dr.Zaheer Ahmed

Subject : Advanced Databases

Topic: Data Delivery alternatives

Participants: Students of IV year

Content : There are various Data Delivery Alternatives are available in Distributed databases. The following delivery alternatives are discussed in detail with examples.

- Delivery modes
  - ➡ Pull-only
  - ➡ Push-only
  - ➡ Hybrid
- Frequency
  - ➡ Periodic
  - ➡ Conditional
  - ➡ Ad-hoc or irregular
- Communication Methods
  - ➡ Unicast
  - ➡ One-to-many
- Note: not all combinations make sense

Implementation: As part of this activity students are grouped and asked to list out few case studies where we can find and apply these data delivery alternatives in the real time applications. students are found few case studies like mobile messaging ,mobile callings, tv and radio broadcasting etc.

Outcome: All students are actively participated in this activity and successfully identified few real time applications. Very few students in the class were faced difficulty for those I have explained .Finally this interactive learning methodology improves in understanding the topic easily and fully.

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AY: 2024-25

Interactive Learning : Think-pair-share

Faculty Name: G.kalpana

Subject : Advanced Databases

Topic: Distributed DBMS Architecture

Participants: Students of IV year D section

Implementation:

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Discussing with a partner maximizes participation, focuses attention and engages students in comprehending the reading material.

Content: Distributed DBMS Architecture are mainly categorized into the following types.

1. ANSI/SPARC Architecture
2. Generic DBMS Architecture
3. Client-Server Architectures
4. Peer to Peer architecture
5. Multi DBMS Architecture:

Implementation: Initially I explained above architectures in detail with merits and de merits of each category. After understanding the concepts of above architectural models students are asked to identify the given applications belongs to which architectural model by think pair share innovative learning methodology. As part of this activity I made students into some set of groups and gave some scenarios and asked to find out which model is suitable why ? and also asked the merits and demerits and suggested them to discuss the topics with their peers in the group and write down the answer.

Outcome: All the students are actively participated and they did successfully. For those who are not following I explained with good examples. With this activity it improves interest in learning the task easily along with his/her friends by discussing they can get more ideas.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique implemented: Interactive Learning (Mathematical Chair)

Subject: MFCS

Name of the Faculty: S.Divya

Topic: Combinations

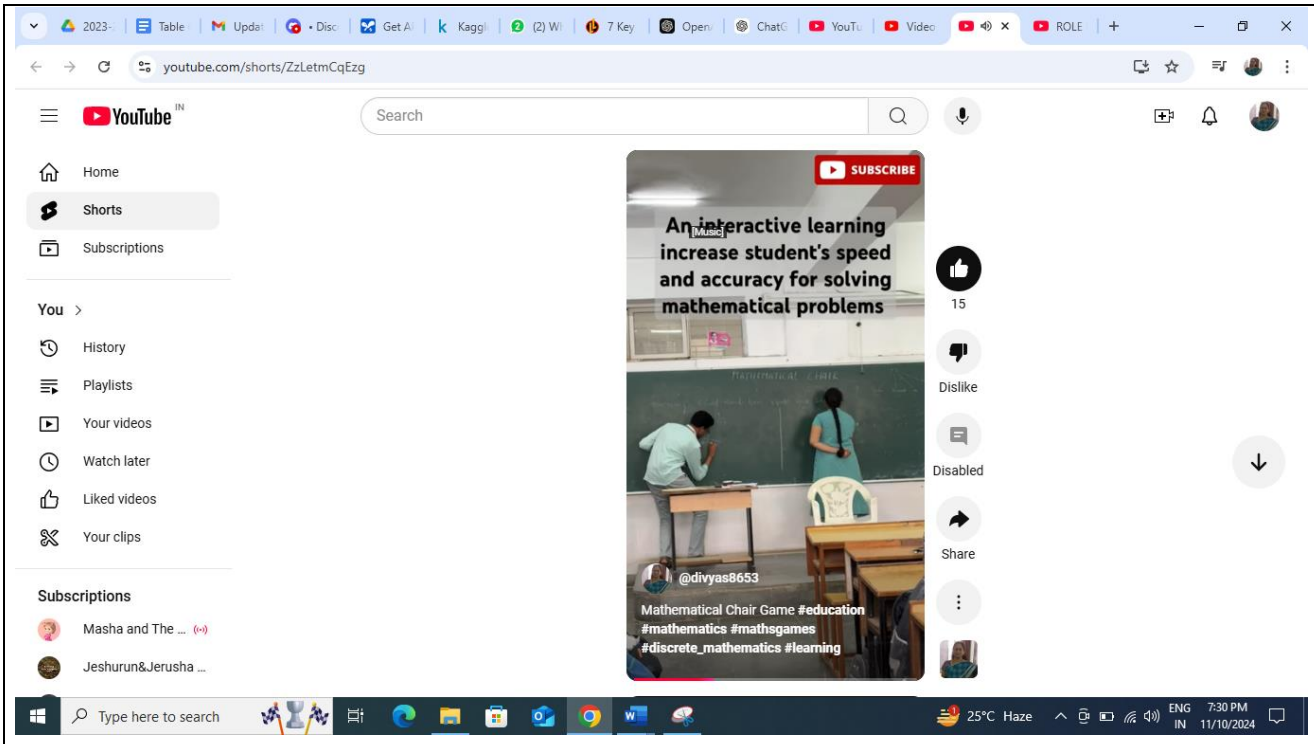
Students: II-I B.Tech CSE-B

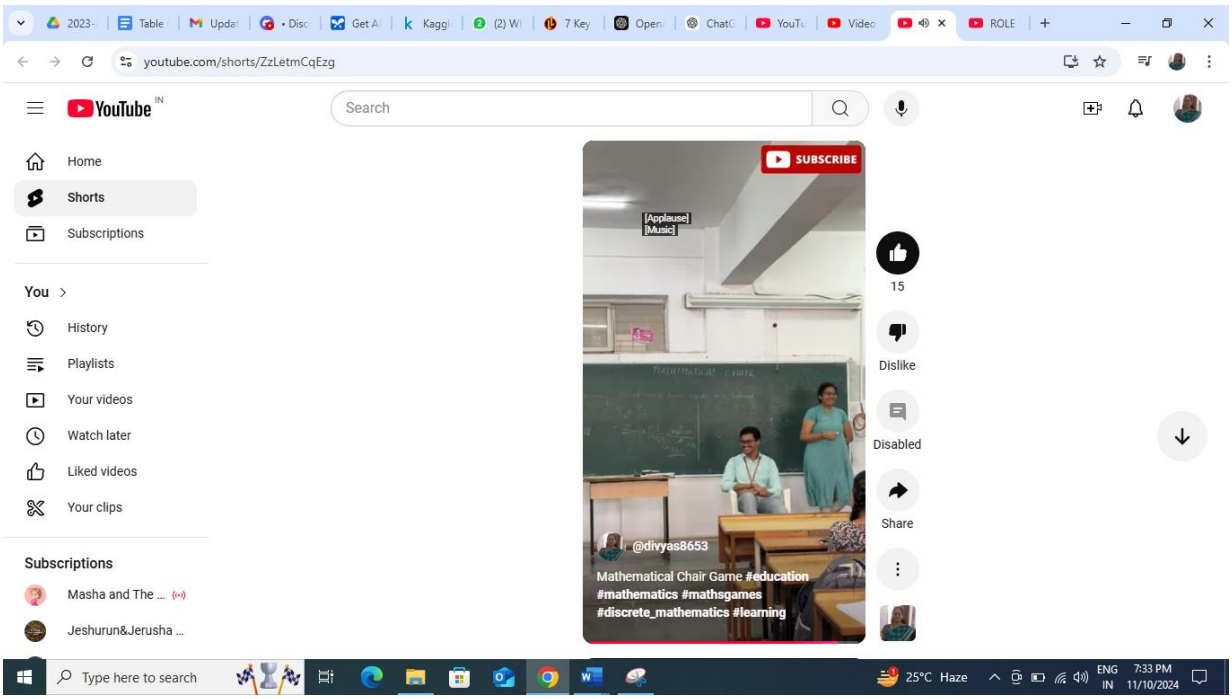
Implementation:

Mathematical Chair (often known as "Math Musical Chairs") is a lively and engaging classroom game designed to reinforce math skills. It's an educational twist on the classic game of musical chairs, where students solve math problems to stay in the game. This activity promotes quick thinking, mental math, and active learning.

It’s a multi-player game. The participants start solving questions on the board, the one who wins will occupy the chair first.

Recorded session is available on https://www.youtube.com/shorts/ZzLetmCqEzg





Outcome:

- To increase difficulty, use word problems that require students to think critically rather than just solve basic equations.
- Combines movement with learning, helping students stay active and engaged
- Adds a fun, competitive element to learning, which can increase student motivation.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique Implemented: Role Play

Subject: MFCS

Name of the Faculty: M.Vijaya

Students: II-I B.Tech CSE

Implementation:

Role play is a powerful educational tool that allows students to explore real-life scenarios, practice skills, and develop a deeper understanding of academic content through active engagement.

Identified roles are assigned, each role to student. The question is "Using four letters A, B, C & D. find out how many 2-combinations word can be formed is demonstrated by students by playing each role A, B, C and D. Accordingly students switch positions to form AB, AC, AD, BD, BC and CD.

Outcome:

- Students often need to research their roles, which enhances their information-gathering and critical analysis skills.
- Taking on leadership roles within a scenario helps students practice decision-making, delegation, and guiding others.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Interactive Learning Method: Think-pair-share

Faculty Name: V.Sri Lakshmi

Subject : Web Technologies

Topic: Client-Side vs. Server-Side Rendering

Participants: Students of III yr C section

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Discussing with a partner maximizes participation, focuses attention and engages students in comprehending the reading material.

Content: Client-Side Rendering (CSR)

In **Client-Side Rendering**, the initial page load sends a minimal HTML document to the browser. After that, JavaScript (typically through frameworks like React, Vue.js, or Angular) takes over to render the content dynamically in the browser.

- The **HTML** document is essentially a shell with a link to JavaScript.
- JavaScript takes over and makes API requests, processes data, and injects the HTML dynamically on the client-side.
- The browser renders the full page once the JavaScript has executed.

Implementation: Initially I explained above technologies in detail with examples of each category. After understanding the concepts of above client-server models students are asked to identify the given applications belongs to which model by think pair share innovative learning methodology. As part of this activity I made students into some set of groups and gave some scenarios and asked to find out which model is suitable why ? and also asked the merits and demerits and suggested them to discuss the topics with their peers in the group and write down the answer.

Outcome: All the students are actively participated and they did successfully. For those who are not following I explained with good examples. With this activity it improves interest in learning the task easily along with his/her friends by discussing they can get more ideas.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique Implemented: Roleplay

Subject: Natural Language Processing(NLP)

Name of the Faculty: R.Yogesh

Students: IV-I B.Tech CSE-A

INTRODUCTION

In a process of imparting knowledge and skills it's a systematic process based on some educational objectives to communicate. **Interactive learning** is a hands-on, real-world approach to education. **Role-playing** is the changing of one's behaviour to assume a role, either unconsciously to fill a social role, or consciously to act out an adopted role.

- To refer to the playing of roles generally such as in a theatre, or educational setting;
- To refer to taking a role of an existing character or person and acting it out with a partner taking someone else's role, often involving different genres of practice

1. N-gram Language Model Role-play

Objective:

Help students understand how N-gram models predict the likelihood of sequences by simulating language modeling in a text generation or autocorrect context.

Roles:

1. **Data Collector:** Gathers a corpus of text data for N-gram model training.
2. **Tokenization Specialist:** Breaks down text into unigrams, bigrams, trigrams, and other N-grams.
3. **Probability Calculator:** Calculates the probabilities of N-grams to predict likely word sequences.
4. **Application Developer:** Integrates the N-gram model into applications like predictive text or autocorrect.

Activity:

1. **Data Collector** gathers sample sentences (e.g., from books or articles) and compiles a dataset.
2. **Tokenization Specialist** creates N-grams (e.g., unigram, bigram) from the dataset and discusses the challenges of handling punctuation and different word forms.
3. **Probability Calculator** calculates probabilities for different N-grams based on frequency. They may demonstrate this by predicting the next likely word in a sentence.
4. **Application Developer** simulates integrating the N-gram model into an application like predictive text, using N-gram probabilities to predict and auto-complete phrases.
5. **Presentation & Reflection:** The group presents their N-gram model and reflects on the limitations, such as sparsity issues and why large datasets are essential for accurate predictions.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AY: 2024-25

Innovative Technique Implemented: Project Based Learning

Subject: Web Technologies

Name of the Faculty: P Lakshmi Priya

Students: III-I B.Tech CSE-B

Description about the mode:

Project based learning is a model and framework of teaching and learning where students acquire content knowledge and skills in order to answer a driving question based on an problem, need, challenge and concern. Project based learning is done collaboratively and within groups, using a variety of employability skills such as critical thinking, communication and creativity.

Project Title: Smart Service Application

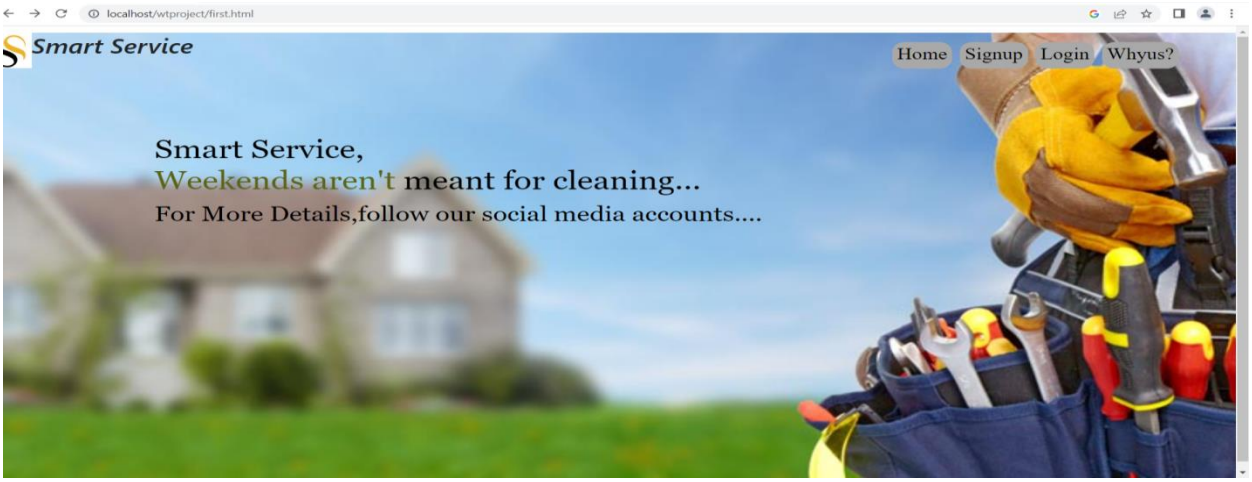
Description:

The web application smart service is built for providing services like cleaning houses, fixing electrical problems and plumber issues. This Application is a good option for booking a service from your house and issue will be solved within hours. This application is a user-friendly application.

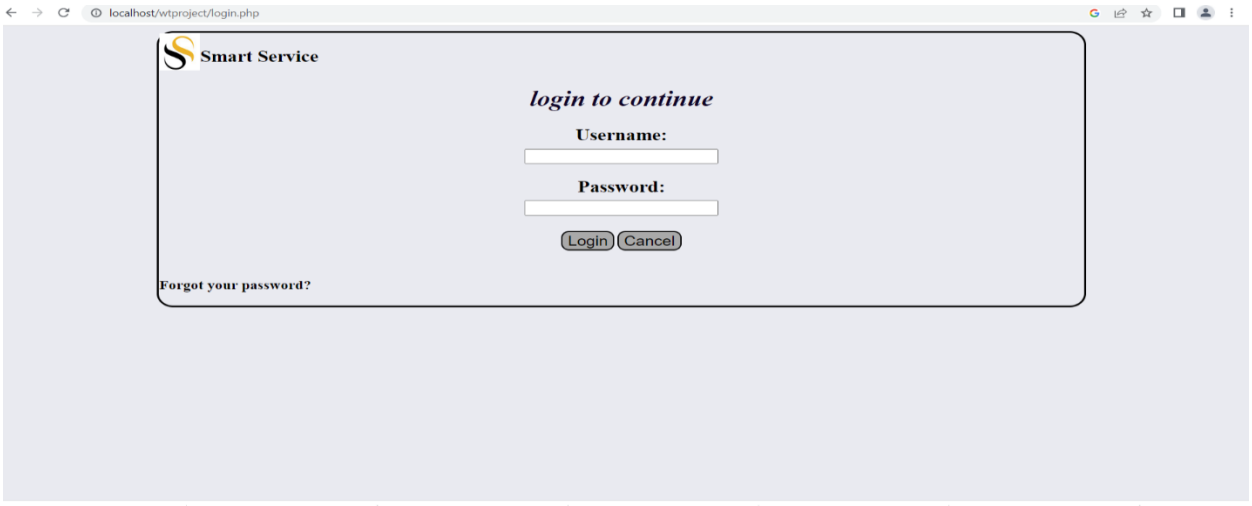
Our Smart Service application provides information about the cleaning services, electrical problems, and plumber issues. Smart Service has become an indispensable element of homes' and organizations' healthy operation. While an individual or employee would be less than enthusiastic about the opportunity to scrub the floor or take out the trash, cleaning service companies take upon themselves. In this the user can create a account first and a book a service. If the same user wants to visit again the user can login by entering his username and password.

Output Screens:

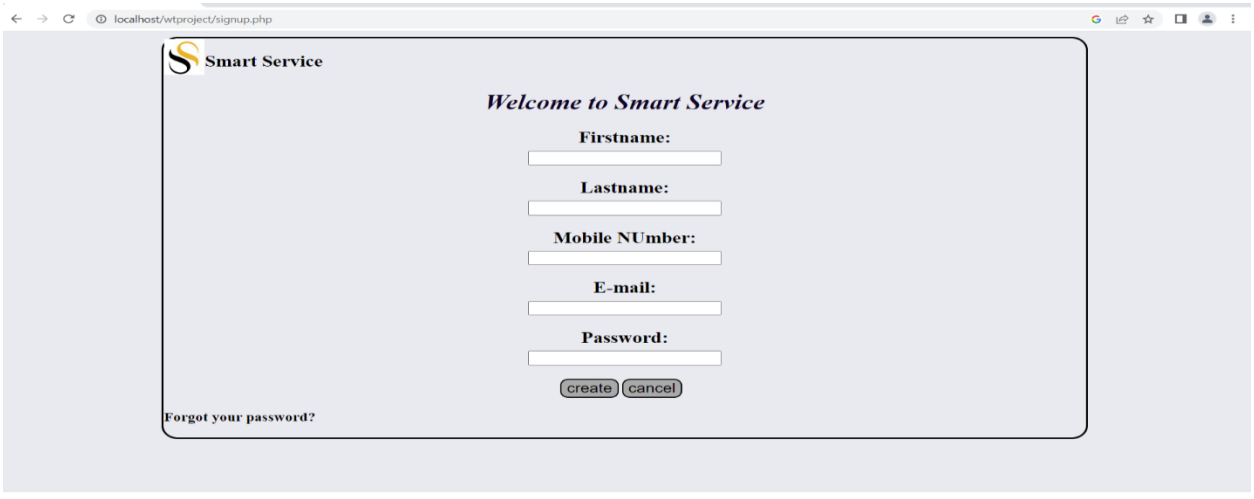
First.html



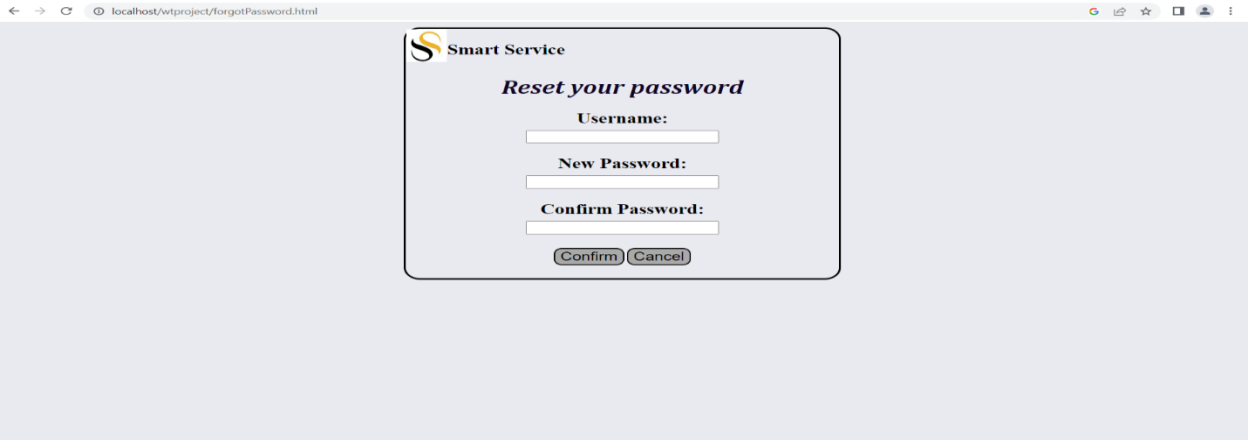
Login.php



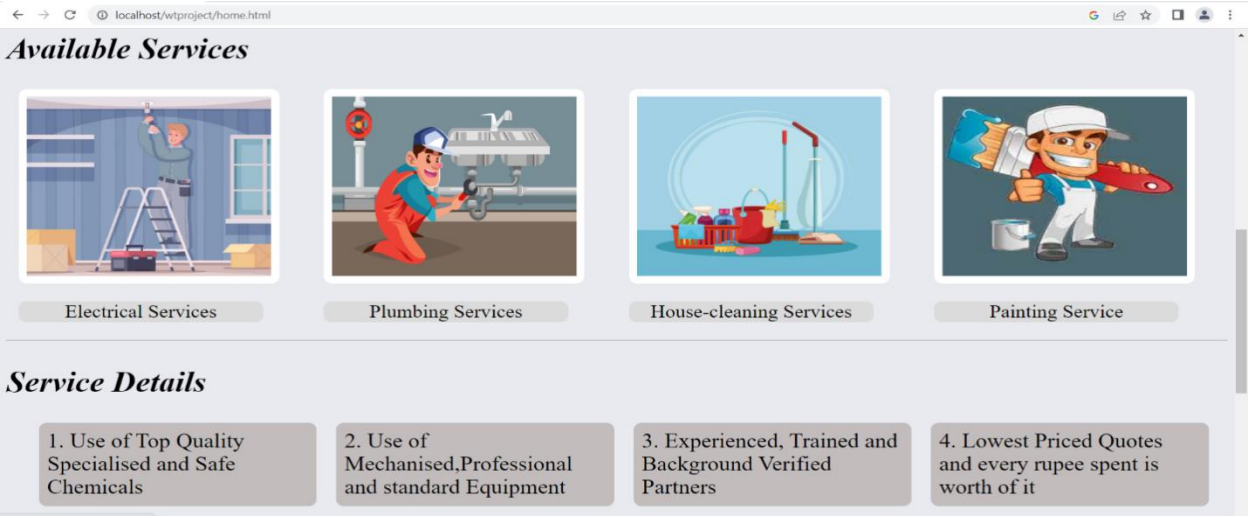
Signup.php

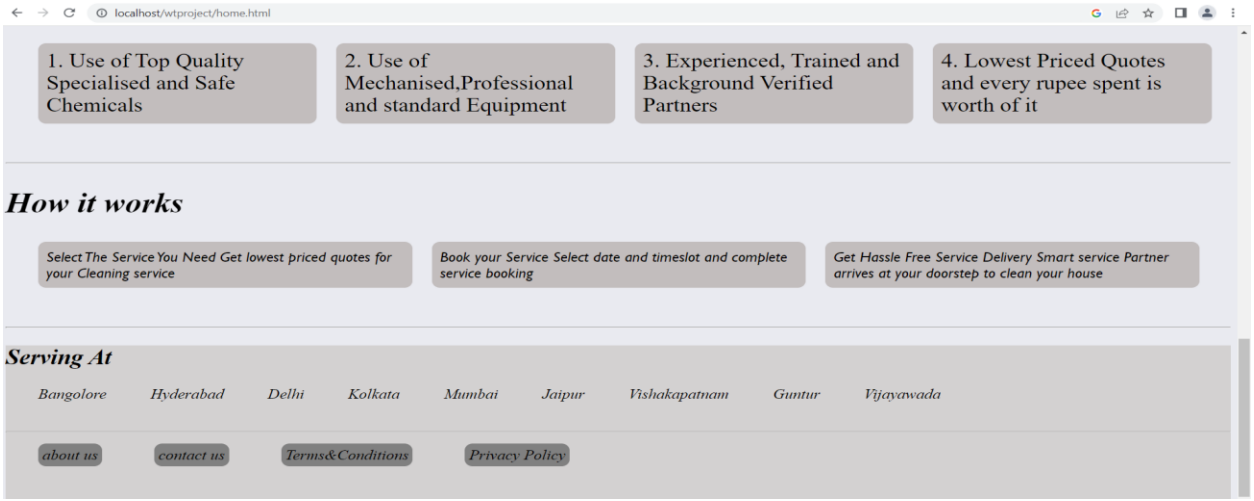


Forgetpassword.php

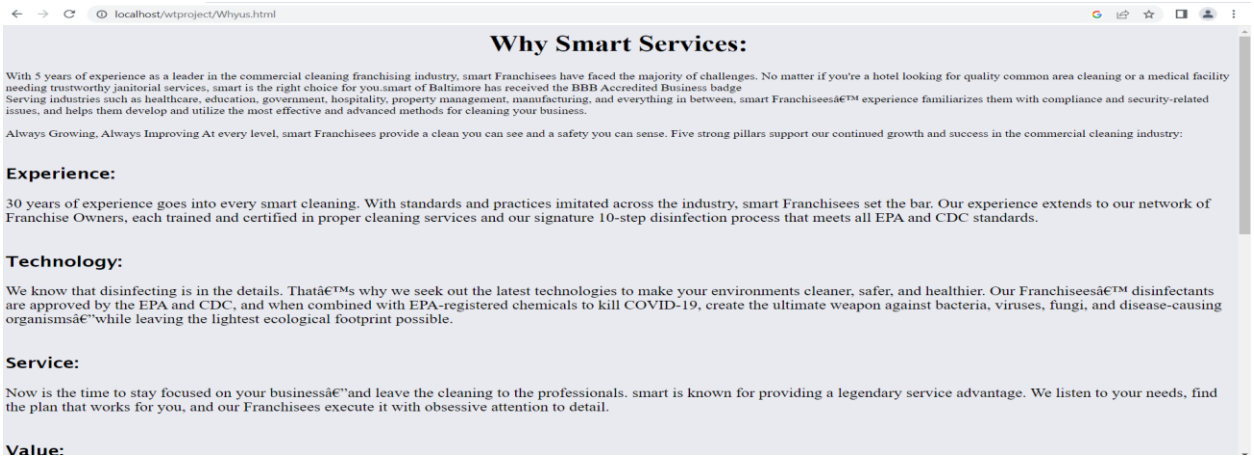


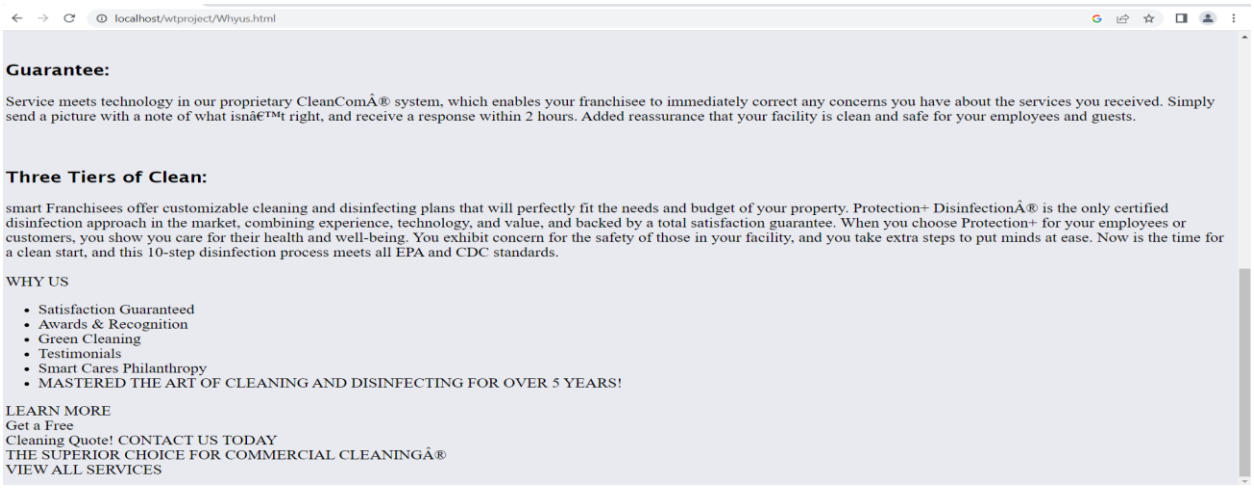
Home.php





Whyus.html





Cleaning.html

localhost/wtproject/cleaning.html

Smart Service

Home About us Contact us

Cleaning Services

Pest Control

Matress cleaning

Exterior cleaning

localhost/wtproject/cleaning.html

Villa Cleaning

Sofa Cleaning

Bathroom cleaning

Window cleaning

Vacant Flat Cleaning

Carpent Cleaning

Register.php

By:

21911A0596 Karishma Upadhay

21911A05A3 Md Zaheer Pasha

21911A05A5 Md Jilani

21911A05A6 M Sailaja

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

AY: 2024-25

Innovative Technique implemented: Role Play

Subject: Computer Networks

Name of the Faculty: G.Surekha

Topic: Star Topology (Switch and Hub working)

Students: III B.Tech I-Sem CSE-C

Objective: The objective of this role-play scenario was to engage students in an innovative and interactive learning experience to understand the concept of **Star Topology** in computer networks. By incorporating hands-on activities, role-playing, and technology, students actively participated in learning rather than passively receiving information.

Implementation:

students acted as computers connected to a central hub or switch.

Phase 1: Understanding Star Topology Using a Hub

- Students were arranged in a circular formation with the hub in the center.
- PC0 sent a message to PC3, but since the student was acting as a hub, the message was **broadcasted to all students (PCs)**.
- PC1and PC2 received the message despite not being the intended recipients, demonstrating the **lack of security and efficiency** in a hub-based network.
- They explained the disadvantages of hubs, including **network congestion and data collisions**.

Phase 2: Understanding Star Topology Using a Switch

- Students were arranged in a circular formation with the switch in the center.
- PC0 sent a message to PC3,here the student was acting as a Switch, the message was **only forwarded to PC3.**
- PC1and PC2 did not receive the message, illustrating the **efficiency and security of a switch-based network**.

OUTCOME:

The role-play activity successfully demonstrated innovative teaching by making the abstract concept of Star Topology **interactive and experiential**. Students actively participated, engaged in meaningful discussions, and gained a deeper understanding of networking principles. This approach to teaching not only enhances understanding but also fosters creativity, collaboration, and problem-solving skills among students.

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Department of Computer Science and Engineering

List of Innovative Teaching Methodologies AY:2024-25

S.No	Faculty Name	Course	Topic	Innovative methods adopted	Goals	Preparation	The significance of Result	Availability of review and critique	Reproducibility and Reusability
1	B.Sailaja	Data Structures	Binary search tree	Role-play	To help students learn, debate ,teamwork and persuasion	Assign roles to students	Enhances the analysis capacity.	Report on concept demonstrate will be availed in website	This can be adopted by any faculty and implement in their course
2	V.Narsing Rao	Database Management Systems	Employee management system	Flipped classroom	Students can learn and take responsibility for their learning innovatively	Students will come with the good preparation on a topic	The level of understanding of technical concepts of the students is depicted	Report on concept demonstrate will be availed in website	This can be utilized by any faculty member and incorporated into their course.

3	A.Swarna	Database Management Systems	Movie Database	Project based learning	To encourage learning by actively engaging in real-world projects.	Students Should have in-depth knowledge of the topic	Students are capable of doing real time projects	Report on concept demonstrate will be availed in website	This can be used by any faculty and implement in their course
4	K.Ramesh Babu	FLAT	DFA	Role-play	To help students explore values and understand the consequences of their behaviour	Assign roles to students	All students are actively participated in this activity.	Report on concept demonstrate will be availed in website	This can be utilized by any faculty member and incorporated into their course.
5	K.Bhavya	Computer Networks	Assignments,seminars	LMS(Google classroom)	To help students flourish with different activities and learn effectively	Students should have basic knowledge about platform	To provide central location,to communicate with students,ask questions and make assignments	Report on concept demonstrate will be availed in website	This can be used by any faculty and implement in their course
6	K.Shirisha	Mobile Application Development	Developing user interface of mobile application	Think-pair-share	To help students in problem solving and develop critical thinking	Students Should have good knowledge of the topic	To improve collaborative and communication skills	Report on concept demonstrate will be availed in website	This can be adopted by any faculty and implement in their course

7	A.Lalitha	R PROGRAMMING	Hands on session	Interactive learning	To improve learning skills both inside and outside of the classroom	Students will come with the basic preparation on a topic	Students will understand the topic easily and effectively.	Report on concept demonstrate will be availed in website	This can be adopted by any faculty and implement in their course
8	Dr. Zaheer Ahmed	Advanced Databases	Data delivery alternatives	Interactive learning	Provide students with the opportunity to analyze and learn from real cases	Students should perform research and analyze the topic	All students are actively participated in this activity and successfully identified few real time applications	Report on concept demonstrate will be availed in website	This can be utilized by any faculty member and incorporated into their course.
9	G.Kalpana	Advanced Databases	Distributed DBMS Architecture	Think-pair-share	To help students in problem solving and develop critical thinking	Students Should have good knowledge of the topic	To improve collaborative and communication skills	Report on concept demonstrate will be availed in website	This can be used by any faculty and implement in their course
10	S.Divya	Mathematical Foundation of computer science	Combinations	Interactive learning (Mathematical chair)	To reinforce math skills, quick thinking, active learning	Students should have basic idea on the topic	Combines movement with learning, help the students stay active	Report on concept demonstrate will be availed in website	This can be utilized by any faculty member and incorporated into their course.
11	M.Vijaya	Mathematic	Combinations	Role-play	To enhance	Assign roles	Improve	Report on	This can be

		al Foundation of computer science			teamwork cooperation and negotiation	to students	Communication and cooperative skills	concept demonstrate will be availed in website	used by any faculty and implement in their course
12	V.Srilaxmi	Web Technologies	Client side vs Server side rendering	Think-pair-share	Deeper understanding and ability to think of their own	Students will come with the good preparation on a topic	To work in a collaborative environment	Report on concept demonstrate will be availed in website	This can be adopted by any faculty and implement in their course
13	R.Yogesh	Natural Language Processing	N-gram Language model	Role-play	To motivate and engage students In real world scenarios	Assign roles to students	Improve Communication and cooperative skills	Report on concept demonstrate will be availed in website	This can be adopted by any faculty and implement in their course
14	P.Laxmi priya	Database Management Systems	Inventory management system	Project based learning	To encourage learning by actively engaging in real-world projects	Students Should have in-depth knowledge of the topic	Students are capable of doing real time projects	Report on concept demonstrate will be availed in website	This can be utilized by any faculty member and incorporated into their course.