VIGNAN'S NIRULA
INSTITUTE OF TECHNOLOGY & SCIENCE FOR WOMEN
(Approved by AICTE, New Delhi & Affiliated to JNTU Kakinada)
Vignan Avenue, Peda Palakaluru, Guntur - 522009

Department of Information Technology

Innovative Teaching Practices

Faculty Name : Mrs. P. Sandhya Krishna, Mr. K. Nageswara Rao
Course Name : Principles of Software Engineering
Class : II B. Tech II Semester
Academic Year : 2021-2022
Title of the Topic : Version Control
Activity Name : Mind Mapping

CO3:Give exposure to a variety of Software Engineering practices such as requirements analysis and specification, code analysis, code debugging, testing, traceability, and version control

Objective

The main objective of version control in software engineering, when viewed through the innovative lens of mind mapping, is to visualize and organize the intricate process of tracking changes, fostering collaboration, and ensuring traceability in a structured yet creative way.

Method to Implement

Introduction:

Begin with a brief explanation of Version Control concepts and their significance in software development, emphasizing its role in collaboration, traceability, and maintaining project integrity.

Mind Map Creation:

- **Central Topic:**"Version Control Systems Overview."
- **Subtopics to Branch Out:**
  - Key Features of Version Control
  - Types of Version Control Systems (Centralized vs. Distributed)
  - Common Tools (e.g., Git, SVN)
  - Workflow Concepts (Branches, Merges, Commits, Pull Requests)
  - Benefits of Version Control in Team Collaboration
  - Real-World Applications of Version Control

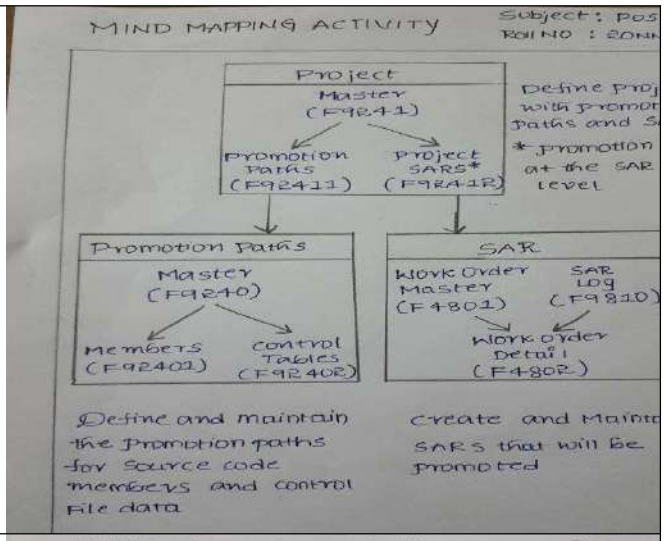
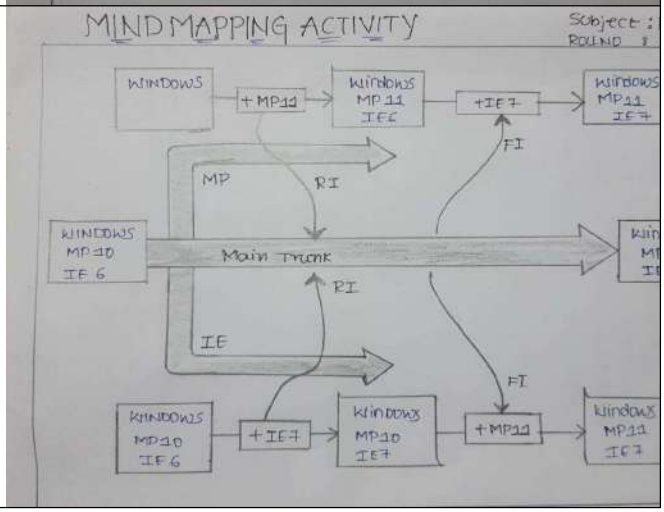
- **Collaborative Activity:**

Divide the class into groups and provide them with large sheets of paper or digital tools to collaboratively create a mind map focusing on the central topic and subtopics. Encourage the use of examples, diagrams, and flowcharts to enrich the map.

- **Discussion:**

  Have each group present their mind maps to the class, explaining the connections between subtopics, key insights, and practical scenarios. Facilitate a discussion to clarify doubts and reinforce the importance of version control in software engineering practices.

Screenshot of the Practice

Mind Mapping Activity by 20NN1A1235	
Mind Mapping Activity by 20NN1A12B1	

Central Node: Version Control Systems Overview

Branch 1: Types of Version Control Systems

- **Sub-branches:** Centralized Version Control (e.g., SVN), Distributed Version Control

Branch 2: Core Concepts

- **Sub-branches:** Commits, Branching, Merging, Conflict Resolution, Rollbacks

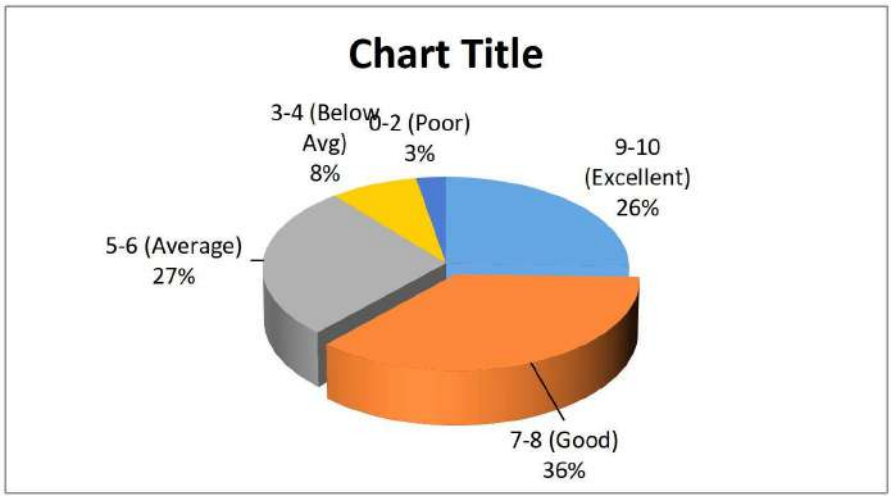
Branch 3: Tools and Platforms

- **Sub-branches:** Git, GitHub, GitLab, Bitbucket

Branch 4: Workflows

- **Sub-branches:** Feature Branch Workflow, Gitflow Workflow, Forking Workflow

Marks Range	Number of Students	Percentage
9-10 (Excellent)	28	25.45%
7-8 (Good)	40	36.36%
5-6 (Average)	30	27.27%
3-4 (Below Avg)	9	8.18%
0-2 (Poor)	3	2.73%
Total	110	100%



Conclusion

The mind mapping technique effectively helped students understand and connect core concepts of Version Control in Software Engineering. Most students performed exceptionally well, as this activity enhanced their learning through visualization and collaborative discussions, making the intricate processes of tracking changes, managing versions, and resolving conflicts more accessible and engaging.

Signature of the Faculty **Head of the Department**