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MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

Department of Electrical and Electronics Communication Engineering

Subject: Full Stack Development

Semester: VI AY 2025-26

Name: Samyak Bakliwal **Class: T. Y. B. Tech.**
Roll No: 1032221792 **Batch: G3**

Experiment No: 1

Name of the Experiment: Git and Version Control

Performed on: 10 / 1 / 25

Submitted on: 4 / 2 / 25

Marks	Teacher's Signature with date

Aim: Git repository and version control

Objective:

- To introduce the concepts and software behind version control, using the example of Git.
- To understand the use of 'version control' in the context of a coding project.
- To learn Git version control with Clone, commit to, and push, pull from a git repository.

Platform: Git, Git-Hub

THEORY:

Instructions: you are requested to write answer of following questions in A4 size pages.

1. What is Git? What is Version Control?
2. How to use Git for version controlling?

Problem Statement:

Create a public git repository for your team and submit the repo URL as a solution to this assignment, Learn Git concept of Local and Remote Repository, Push, Pull, Merge and Branch.

Output:

1. Screenshots of the output of problem statement to be attached.
2. Screenshots of execution of Git commands

Conclusion:

This experiment provided a solid foundation in version control, which is essential for software development and collaborative coding projects. Understanding Git will help in managing project history, resolving conflicts, and improving workflow efficiency in real-world development environments.

Additional Links:

https://youtu.be/Ez8F0nW6S-w?si=chRvHv4k817yf-4d

https://youtu.be/q8EevlEpQ2A?si=NYoDbL1sZWgjVjTV

GitHub Link - https://github.com/samyakbakliwal05?tab=repositories

Post lab question:

1. What is branching in Git?
2. How to create and merge branches in Git? Write the commands used.
3. What is the difference between git reset, git revert, and git restore?

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Experiment No. - 1

Theory :-

(Q1) What is Git? What is version control?

Ans :- Git is a distributed version control system (VCS) used to track changes in files and coordinate work among multiple developers.
It allows efficient collaboration, branching, merging, and maintaining a history of modification.

Version control :-
→ Version control is a system that helps manage changes to files over time. It allows developers to :
- Revert to previous versions if needed.
- Track modifications and who made them.
- Work on different features simultaneously without conflicts.

There are 3 types of (VCS):
1) Local version control
2) Centralised version control (CVCS)
3) Distributed version control (DVCS)

Q7) How to use git for version controlling?

→
- install Git
- Configure Git
- initialize Git in a project
- Track files
- Connect to github & push code
- check status & history
- Branching & Merging
- Updates & Sync code.

→ Post lab questions :-

Q1) what is branching in Git?

Ans Branching in git allows you to create separate lines of development within a project. It helps in working on new features, bug fixes or experiments without affecting the main codebase.

Q2) How to create and merge branches in Git? With the command used?

Ans
→ create a new branch
→ switch to the branch
→ merge branch into main.

Q3) What is the difference between git reset, git revert and git restore?

→ Git reset :
moves HEAD & branch pointer to an earlier commit, removing later commits.

Git revert :
create a new commit that undo's changes from a specific commit.

Git restore :
Discards uncommitted changes in working directory without affecting commit.