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Semester: ..... Program: ..... Branch: ..... Specialization: .....

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# Applied and Action Learning

(Learning by Doing and Discovery)

**Name of the Experiement : Team Dev – Git and Collaboration in Projects**

## Objective/Aim:

To understand how **Git** enables version control and team collaboration in software and blockchain development projects by using distributed repositories and collaborative workflows.

## Apparatus/Software Used:

- **Git CLI / Git Bash**
- **GitHub / GitLab** (Remote Repository Hosting)
- **VS Code** (for code editing and Git integration)
- **Internet Connection** (for push/pull operations)
- **Team Members' Git Accounts**

## Theory:

**What is Git?**

Git is a **distributed version control system (DVCS)** that tracks changes in source code during software development.
It enables multiple developers to work on the same project simultaneously without overwriting each other's work.

**Git and Collaboration**

Git allows teams to:

- Work **independently** on branches.
- **Merge** work efficiently without overwriting others' code.
- Track **who made what changes and when**.
- Rollback or **revert** mistakes easily.

Blockchain development also uses Git for **open-source collaboration**, **smart contract versioning**, and **auditable code management**.

# Procedure:



1. **Install Git**
   - Download and install Git from https://git-scm.com.
   - Verify installation using:

```
PS C:\Users\shrut\OneDrive\Desktop\WEB3> git --version
>>
git version 2.50.1.windows.1
PS C:\Users\shrut\OneDrive\Desktop\WEB3>
```

2. **Configure Git User**

```
PS C:\Users\shrut\OneDrive\Desktop\WEB3> git config --global user.name "Shruti Prusty"
PS C:\Users\shrut\OneDrive\Desktop\WEB3> git config --global user.email "shrutiprusty10@gmail.com"
PS C:\Users\shrut\OneDrive\Desktop\WEB3>
```

3. **Create a New Local Repository**

```
mkdir team-dev-lab
cd team-dev-lab
git init
```

4. **Create and Add Files**

```
echo "My first blockchain project" > README.md
git add README.md
git commit -m "Initial commit"
```

**5. Create a Remote Repository on GitHub**

- Log in to GitHub → Click **New Repository** → Name: `team-dev-lab`.
- Copy the remote URL.

**6. Connect Local Repo to Remote**

```
git remote add origin https://github.com/username/team-dev-lab.git
git branch -M main
git push -u origin main
```

**7. Collaborate with Team Members**

- **Each member clones the repo:**

```
git clone https://github.com/username/team-dev-lab.git
```

# Observation:



From this experiment, we conclude that:

- **Git** enables efficient, decentralized collaboration for development teams.
- **Branching and merging** allow multiple developers to contribute simultaneously.
- **Pull requests and reviews** ensure code quality and team synchronization.
- Version control is essential for large-scale **blockchain and DApp projects**, maintaining transparency and traceability.

## ASSESSMENT

| Rubrics | Full Mark | Marks Obtained | Remarks |
|---|---|---|---|
| Concept | 10 | | |
| Planning and Execution/ Practical Simulation/ Programming | 10 | | |
| Result and Interpretation | 10 | | |
| Record of Applied and Action Learning | 10 | | |
| Viva | 10 | | |
| **Total** | **50** | | |

***Signature of the Student:***

***Name :***

***Signature of the Faculty:***

***Regn. No. :***



**As applicable according to the experiment.*
*Two sheets per experiment (10-20) to be used.*