Placement Empowerment Program

Cloud Computing and DevOps Centre

Set Up Git Branching

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Introduction

Git is a powerful version control system used to track changes in code. It allows multiple developers to work on a project simultaneously without interfering with each other's work.

Key concepts include

- repositories (which store project files and their history)
- branches (independent lines of development)
- commits (snapshots of the repo with unique IDs and messages)
- merges (integrating changes from one branch to another)
- pulling (fetching changes from a remote repo)
- pushing (sending changes to a remote repo)
- cloning (copying an existing remote repo to your local machine).

Git is essential for collaboration, tracking changes, and managing project versions efficiently.

Step-by-Step Overview

Step 1:Initialize the repository.

```
C:\Users\Admin\Desktop\poc>git init
Initialized empty Git repository in C:/Users/Admin/Desktop/poc/.git/
```

Step 2

Add the files to the repository

```
PS C:\Users\shalni\OneDrive\Desktop\New folder> git add index.html
```

Step 3

Commit the changes.

```
C:\Users\Admin\Desktop\poc>git add .
```

Step 5

Create the branch

Git branch -M main

```
PS C:\Users\shalni\OneDrive\Desktop\New folder> git branch -M main
PS C:\Users\shalni\OneDrive\Desktop\New folder> git remote add origin https://github.com/Shaliniaa/sample.git
```

Step 6

Push Your Branch to Remote:

```
PS C:\Users\shalni\OneDrive\Desktop\New folder> git push -u origin main
```

Step 7

Merge the Branch: Switch back to your main branch:

```
PS C:\Users\shalni\OneDrive\Desktop\New folder> git branch
* main
```

Expected Outcome

To set up Git branching in Windows PowerShell, navigate to your repo with cd /path/to/your/repo, create a new branch using git checkout -b new-feature-branch, add a new feature by creating or modifying a file, stage your changes with git add new_feature.py, commit them using git commit -m "Add new feature: Print 'Hello, new feature!'", push your branch to remote with git push origin new-feature-branch, switch back to the main branch using git checkout main, merge the feature branch into the main branch with git merge new-feature-branch, and finally push the merged changes to remote using git push origin main. This will create a new branch, add a feature, merge it into the main branch, and push the changes to the remote repository.