

Assignment 1: Git Basics

Familiarize with git init, git status, git add, git commit, git push, git pull, configuring Git, setting Notepad++ as default editor, and adding a file to the repository.

Step 1: Git Configuration

```
git --version
```

Expected Output:

```
git version 2.39.3
```

```
git config --global user.name "Sai Kushyanth"
```

Expected Output:

```
git config --global user.email "your-email@example.com"
```

Expected Output:

```
git config --list
```

Expected Output:

```
user.name=Sai Kushyanth user.email=your-email@example.com
```

Step 2: Set Notepad++ as Default Editor

```
notepad++
```

Expected Output:

```
Opens Notepad++ window
```

```
alias npp="notepad++"
```

Expected Output:

```
git config --global core.editor "notepad++"
```

Expected Output:

```
git config --global -e
```

Expected Output:

```
Opens config file in Notepad++
```

Step 3: Create GitDemo Repository

```
mkdir GitDemo && cd GitDemo
```

Expected Output:

```
git init
```

Expected Output:

```
Initialized empty Git repository in /path/to/GitDemo/.git/
```

```
echo "Welcome to Git" > welcome.txt
```

Expected Output:

```
cat welcome.txt
```

Expected Output:

```
Welcome to Git
```

```
git status
```

Expected Output:

```
Untracked files: welcome.txt
```

```
git add welcome.txt
```

Expected Output:

```
git commit -m 'Add welcome.txt'
```

Expected Output:

```
[master (root-commit) abc1234] Add welcome.txt 1 file changed, 1 insertion(+) create mode 100644
```

welcome.txt

```
git remote add origin <remote_repo_url>
```

Expected Output:

```
git pull origin master
```

Expected Output:

Already up to date.

```
git push origin master
```

Expected Output:

Enumerating objects: 3, done. To * [new branch] master -> master

Assignment 2: Git Ignore

Learn to ignore files and folders using .gitignore.

```
touch error.log
```

Expected Output:

```
mkdir logs
```

Expected Output:

```
echo "*.log" > .gitignore
```

Expected Output:

```
echo "logs/" >> .gitignore
```

Expected Output:

```
git status
```

Expected Output:

.gitignore: untracked error.log and logs folder ignored

Assignment 3: Branching & Merging

Learn to create branches, make changes, and merge.

```
git branch GitNewBranch
```

Expected Output:

```
git branch
```

Expected Output:

* master GitNewBranch

```
git checkout GitNewBranch
```

Expected Output:

Switched to branch 'GitNewBranch'

```
echo "Branch file" > branch.txt
```

Expected Output:

```
git add branch.txt
```

Expected Output:

```
git commit -m 'Add branch.txt'
```

Expected Output:

[GitNewBranch abc5678] Add branch.txt 1 file changed, 1 insertion(+) create mode 100644 branch.txt

```
git checkout master
```

Expected Output:

Switched to branch 'master'

```
git diff master GitNewBranch
```

Expected Output:

```
diff --git a/branch.txt b/branch.txt new file mode 100644 +Branch file
```

```
git merge GitNewBranch
```

Expected Output:

```
Merge made by the 'recursive' strategy. branch.txt | 1 + 1 file changed, 1 insertion(+) create mode 100644 branch.txt
```

```
git log --oneline --graph --decorate
```

Expected Output:

```
* abc5678 (HEAD -> master, GitNewBranch) Add branch.txt * 1234567 Add welcome.txt
```

```
git branch -d GitNewBranch
```

Expected Output:

```
Deleted branch GitNewBranch (was abc5678).
```

Assignment 4: Conflict Resolution

Resolve merge conflicts.

```
git checkout -b GitWork
```

Expected Output:

```
Switched to a new branch 'GitWork'
```

```
echo "Branch hello" > hello.xml
```

Expected Output:

```
git add hello.xml && git commit -m 'Add hello.xml in branch'
```

Expected Output:

```
[GitWork xyz1234] Add hello.xml in branch 1 file changed, 1 insertion(+) create mode 100644 hello.xml
```

```
git checkout master
```

Expected Output:

```
Switched to branch 'master'
```

```
echo "Master hello" > hello.xml
```

Expected Output:

```
git add hello.xml && git commit -m 'Add hello.xml in master'
```

Expected Output:

```
[master pqr5678] Add hello.xml in master 1 file changed, 1 insertion(+) create mode 100644 hello.xml
```

```
git merge GitWork
```

Expected Output:

```
Auto-merging hello.xml CONFLICT (content): Merge conflict in hello.xml Automatic merge failed; fix conflicts and then commit the result.
```

```
git mergetool
```

Expected Output:

```
Opens P4Merge tool for conflict resolution
```

```
git add hello.xml && git commit -m 'Resolved conflict'
```

Expected Output:

```
[master abc1111] Resolved conflict
```

```
echo "*.bak" >> .gitignore
```

Expected Output:

```
git add .gitignore && git commit -m 'Ignore backup files'
```

Expected Output:

```
[master def2222] Ignore backup files
```

```
git branch -d GitWork
```

Expected Output:

Deleted branch GitWork (was xyz1234).

Assignment 5: Cleanup & Push

Clean up local repo and push changes to remote.

```
git status
```

Expected Output:

On branch master nothing to commit, working tree clean

```
git branch
```

Expected Output:

```
* master
```

```
git pull origin master
```

Expected Output:

Already up to date.

```
git push origin master
```

Expected Output:

Everything up-to-date