## Assignment 1

Q)Create a local Git repository and practice basic commands (init, add, commit). Task Overview: In this assignment, you will initialize a Git repository, add files, and commit them using basic Git commands.

## Command Prompt

```
Microsoft Windows [Version 10.0.19045.5247]
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C:\Users\Adwaiy>mkdir project_1
C:\Users\Adwaiy>cd project_1
C:\Users\Adwaiy\project_1>git init
Initialized empty Git repository in C:/Users/Adwaiy/project 1/.git/
C:\Users\Adwaiy\project 1>echo "# Project 1" > README.md
C:\Users\Adwaiy\project 1>git add README.md
C:\Users\Adwaiy\project_1>echo "This is file 1" > file1.txt
C:\Users\Adwaiy\project_1>echo "This is file 2" > file2.txt
C:\Users\Adwaiy\project_1>git add file1.txt
C:\Users\Adwaiy\project 1>git add file2.txt
C:\Users\Adwaiy\project_1>git status
On branch master
No commits yet
Changes to be committed:
 (use "git rm --cached <file>..." to unstage)
       new file: README.md
new file: file1.txt
C:\Users\Adwaiy\project_1>
```

## Assignment 2

Q) Create a branch for a new feature, make changes, and then merge it back into the main branch.

Task Overview: In this assignment, I have created a new branch, make changes, and merge it back into the main branch using Git.

```
C:\Users\Adwaiy\project_1>git branch feature-branch
C:\Users\Adwaiy\project_1>git checkout feature-branch
Switched to branch 'feature-branch'
C:\Users\Adwaiy\project_1>echo "This is a feature branch file" > feature.txt
C:\Users\Adwaiy\project_1>git add feature.txt
C:\Users\Adwaiy\project_1>git commit -m "Added feature.txt in feature branch"
[feature-branch 250f0fe] Added feature.txt in feature branch
1 file changed, 1 insertion(+)
create mode 100644 feature.txt
C:\Users\Adwaiy\project_1>git checkout main
error: pathspec 'main' did not match any file(s) known to git
C:\Users\Adwaiy\project_1>git checkout master
Switched to branch 'master'
C:\Users\Adwaiy\project_1>git merge feature-branch
Updating 9c68592..250f0fe
Fast-forward
feature.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 feature.txt
C:\Users\Adwaiy\project_1>git branch -d feature-branch
Deleted branch feature-branch (was 250f0fe).
C:\Users\Adwaiy\project_1>
```

## Assignment 3

Q) Write a short reflection on the importance of version control in collaborative projects.

Version control is essential in collaborative projects because it allows multiple contributors to work on the same codebase without overwriting each other's work.

It tracks changes made to the code, enabling team members to easily review, modify, and revert code if necessary. With version control systems like Git, each change is documented with a commit message, providing context for each modification.

This transparency ensures that every contributor's changes are integrated smoothly, and it simplifies collaboration across different teams. Furthermore, version control provides a safety net by allowing teams to maintain multiple branches for different features and quickly merge them without losing valuable work.

Ultimately, it enhances teamwork, minimizes conflicts, and improves project management efficiency.

Github