

Experiment No 2

Title: Implementation of Staging, Commit, and Push on GitHub

Objective:

To understand and perform version control using Git by staging, committing, and pushing code to a remote repository on GitHub.

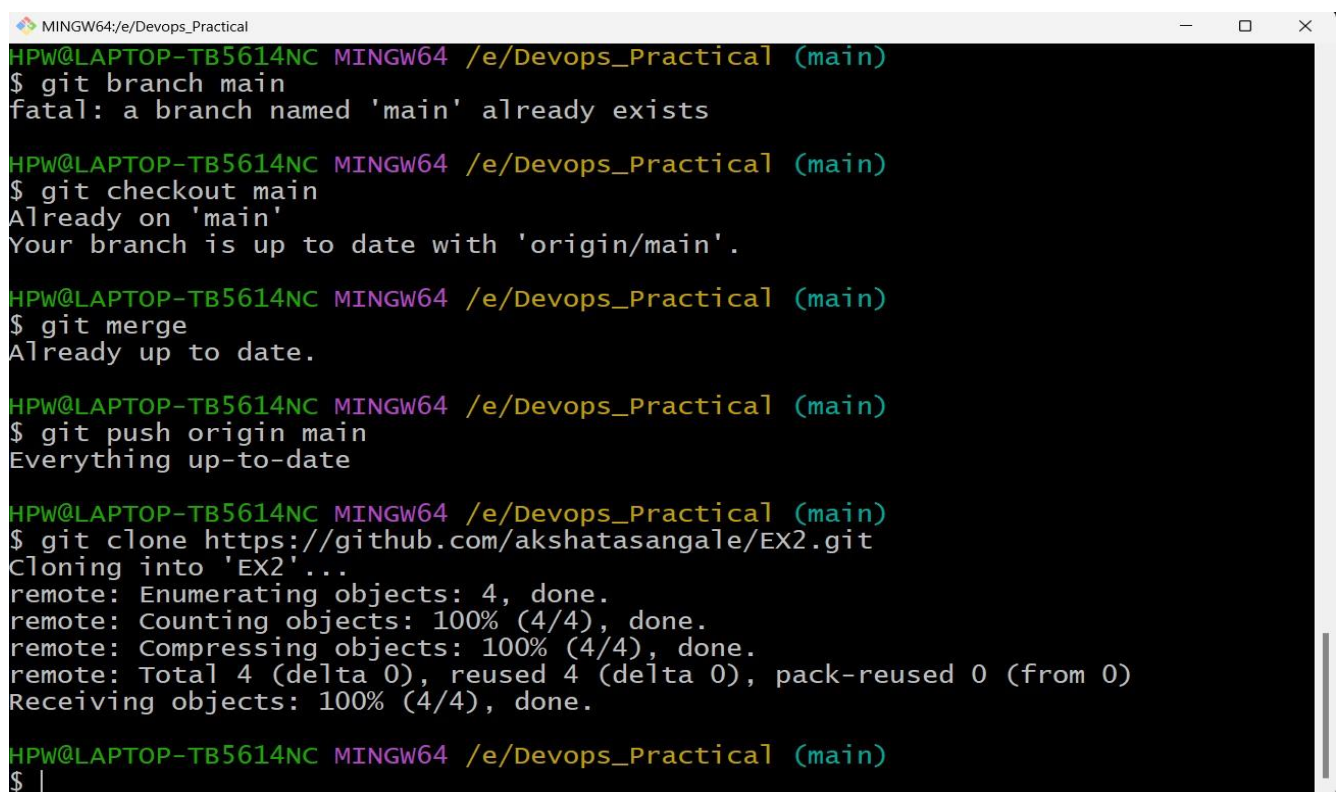
Important Steps

1. Git Installation:

- Installed Git using `sudo apt install git` (Ubuntu) or downloaded from [Git website](#) (Windows).
- Verified installation using `git --version`.

2. Initializing and Cloning a Repository:

- Created a new repository on GitHub.
- Cloned the repository using `git clone <repository-url>`.
- Navigated to the repository using `cd <repository-name>`.



```
MINGW64:/e/Devops_Practical
HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git branch main
fatal: a branch named 'main' already exists

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git merge
Already up to date.

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git push origin main
Everything up-to-date

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git clone https://github.com/akshatasangale/EX2.git
Cloning into 'EX2'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 4 (delta 0), reused 4 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (4/4), done.

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$
```

3. Staging and Committing Changes:

- Created a new file and added source code.
- Staged the changes using `git add <file-name>`.
- Committed the changes using `git commit -m "Commit message"`.

4 Pushing Changes to GitHub:

- Used `git push origin master` to upload changes to the remote repository.
- Verified changes on GitHub.

```
MINGW64:/e/Devops_Practical
HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git init
Reinitialized existing Git repository in E:/Devops_Practical/.git/

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git add .

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git commit -m "commit"
On branch main
nothing to commit, working tree clean

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git branch -M main

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git remote add origin https://github.com/akshatasangale/EX2.git
error: remote origin already exists.

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git push -u origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1010 bytes | 1010.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
```

5. Branching and Merging:

- Created a new branch using `git branch <branch-name>`.
- Switched branches using `git checkout <branch-name>`.
- Merged changes using `git merge <branch-name>`.

```
MINGW64:/e/Devops_Practical
HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git log
commit 4c72b485530bd98a6c28c59d25d2bef0686d5007 (HEAD -> main, origin/main)
Author: akshatasangale <sangaleakshata1@gmail.com>
Date: Fri Feb 28 19:32:14 2025 +0530

    First commit

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git checkout index.html
Updated 0 paths from the index

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git checkout style.css
Updated 0 paths from the index

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git branch main
fatal: a branch named 'main' already exists

HPW@LAPTOP-TB5614NC MINGW64 /e/Devops_Practical (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.
```

Conclusion:

This experiment provided hands-on experience in version control using Git. It covered essential operations such as staging, committing, pushing, branching, and merging, which are crucial for managing source code in collaborative software development projects.