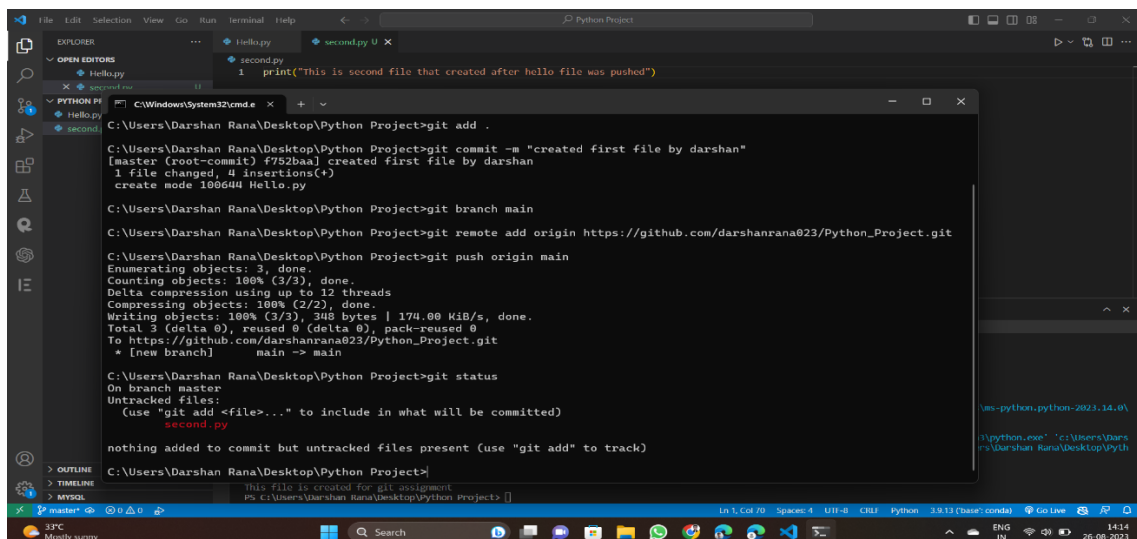


## Assignment 3 Submission Report

Git Repository Link:- [Github Link](#)

### 1. Project Setup:

- Open a terminal or command prompt and navigate to the directory where you want to create your project.
- Initialize a new Git repository with the command: `git init`
- Create your Python project files.
- Commit your changes using:
  - `git add .` (to stage all changes)
  - `git commit -m "Initial commit"`
- Create a new repository on GitHub.
- Link your local repository to the remote GitHub repository:
  - `git remote add origin "GitHub repository URL"`
  - `git branch -M main`
  - `git push -origin main`



```
C:\Users\Darshan Rana\Desktop\Python Project>git add .
C:\Users\Darshan Rana\Desktop\Python Project>git commit -m "created first file by darshan"
[master (root-commit) f752baa] created first file by darshan
1 file changed, 4 insertions(+)
create mode 100644 Hello.py

C:\Users\Darshan Rana\Desktop\Python Project>git branch main
C:\Users\Darshan Rana\Desktop\Python Project>git remote add origin https://github.com/darshanrana023/Python_Project.git
C:\Users\Darshan Rana\Desktop\Python Project>git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 348 bytes | 178.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/darshanrana023/Python_Project.git
 * [new branch]      main -> main

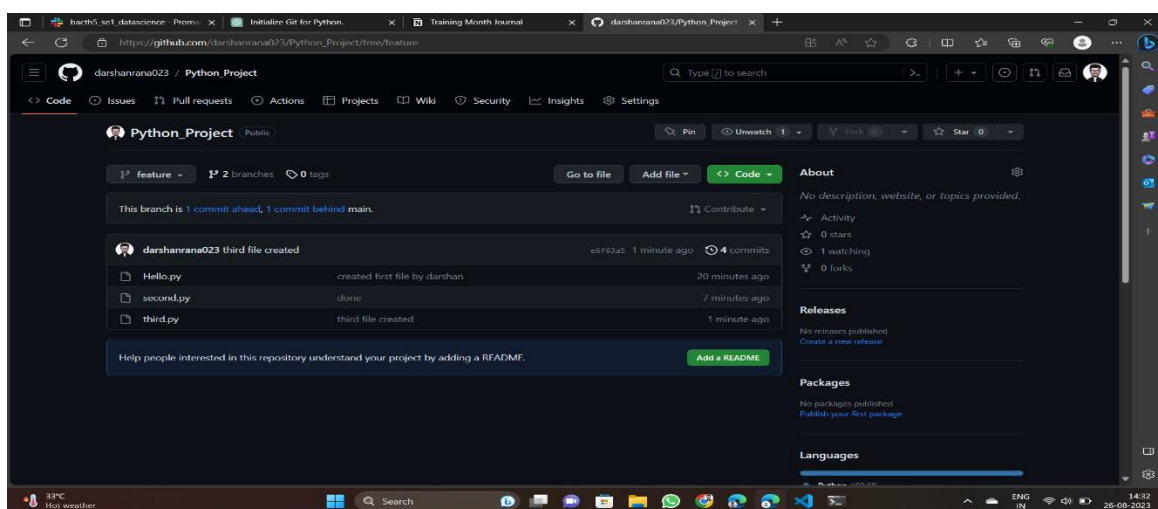
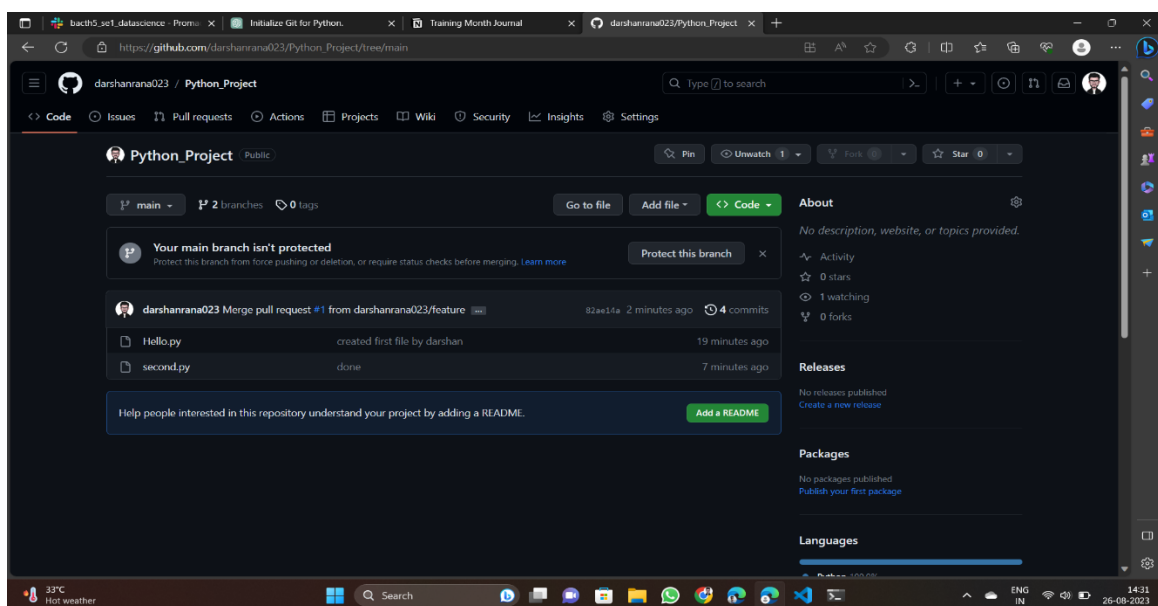
C:\Users\Darshan Rana\Desktop\Python Project>git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        second.py

nothing added to commit but untracked files present (use "git add" to track)

C:\Users\Darshan Rana\Desktop\Python Project>
```

## 2. Branching and Development:

- Create a new branch for a feature:
  - `git checkout feature`
- Develop your feature and commit changes:
  - `git add .`
  - `git commit -m "Implement feature: your feature description"`



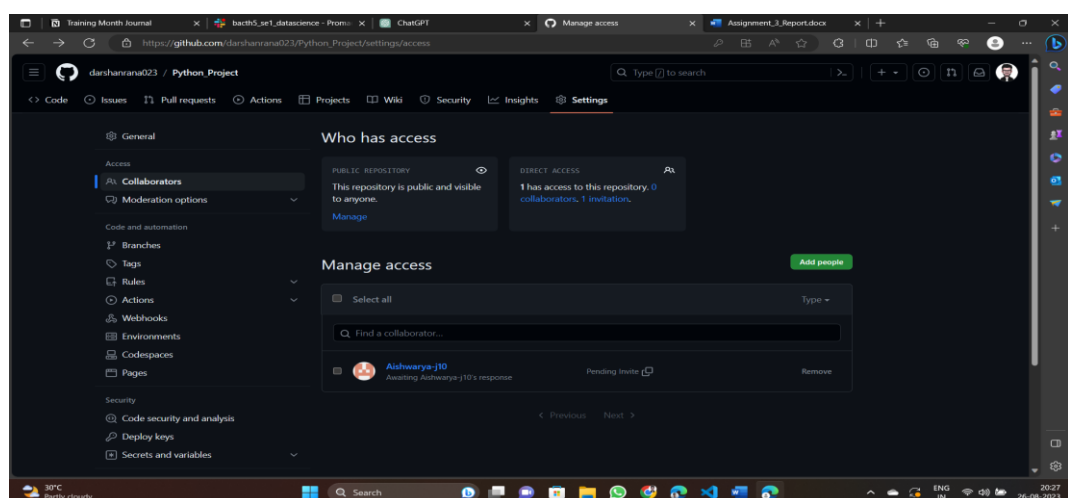
```

First file
This file is created for git assignment
PS C:\Users\Darshan Rana\Desktop\Python Project> git add .
PS C:\Users\Darshan Rana\Desktop\Python Project> git commit -m "all files are pushed by darshan"
On branch master
nothing to commit, working tree clean
PS C:\Users\Darshan Rana\Desktop\Python Project> git push origin main
Everything up-to-date
PS C:\Users\Darshan Rana\Desktop\Python Project> git status
On branch feature
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        third.py
nothing added to commit but untracked files present (use "git add" to track)
PS C:\Users\Darshan Rana\Desktop\Python Project> git add
PS C:\Users\Darshan Rana\Desktop\Python Project> git commit -m "third file created"
[feature edfe58e] third file created
1 file changed, 1 insertion(+)
create mode 100644 third.py
PS C:\Users\Darshan Rana\Desktop\Python Project> git status
On branch feature
nothing to commit, working tree clean
PS C:\Users\Darshan Rana\Desktop\Python Project> git push origin feature
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 361 bytes | 181.00 KiB/s, done.
Total: 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/darshanrana2/Python_Project.git
7b132f5..e0f61a5 feature -> feature
PS C:\Users\Darshan Rana\Desktop\Python Project>

```

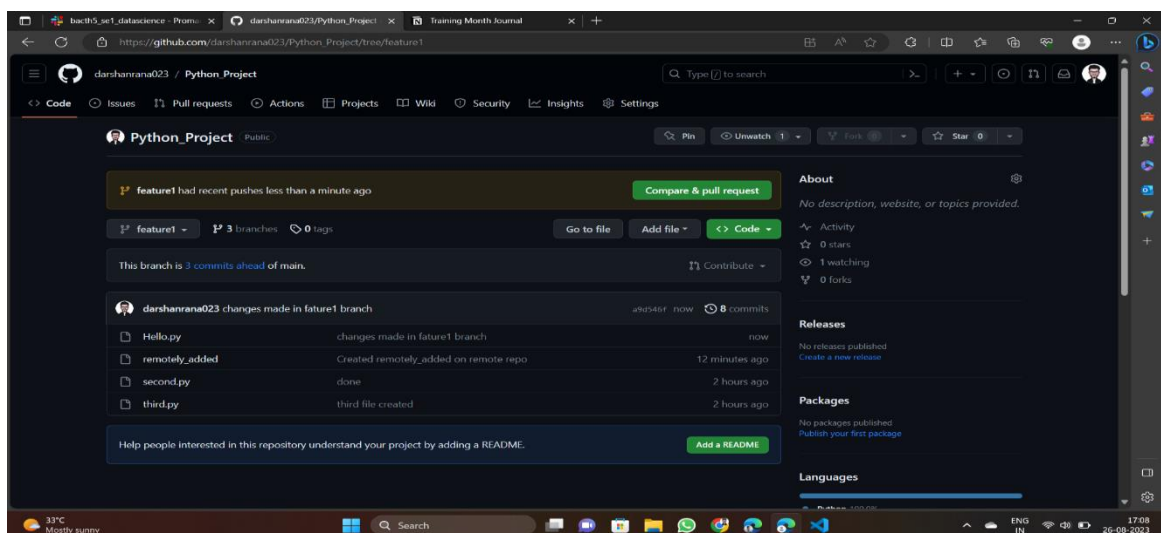
### 3. Collaboration Simulation:

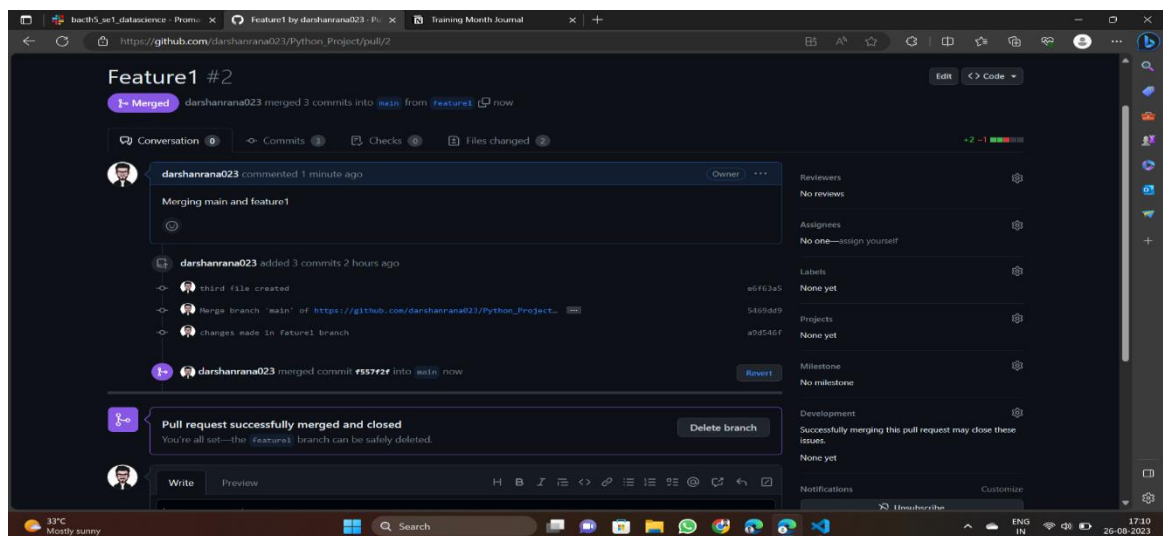
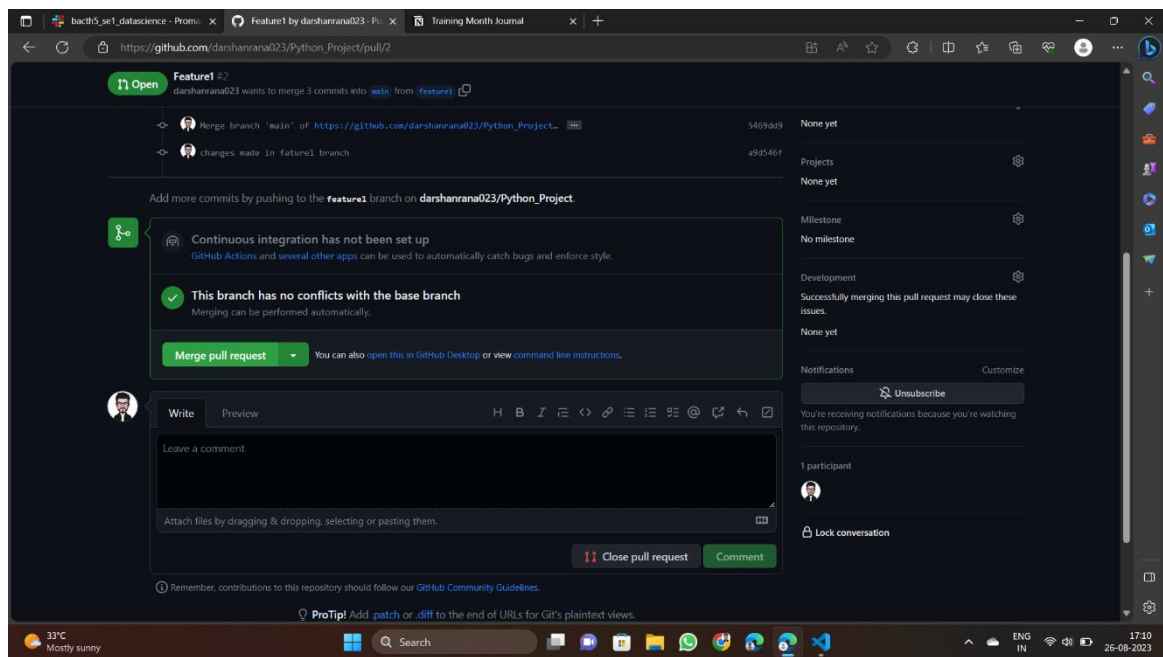
- Peer should clone the repository:
  - `git clone <GitHub repository URL>`
- Peer creates a new branch, makes changes, and commits:
  - `git checkout -b feature/peer-feature`
- Peer pushes changes to their branch:
  - `git push origin feature/peer-feature`
- Create a pull request on GitHub. Review, comment, and merge the pull request.



## 4. Handling Merge Conflicts:

- Introduce a merge conflict by editing the same lines in the same file on different branches.
- Commit changes on one branch.
- Attempt to merge the other branch:
  - `git checkout main`
  - `git merge feature/other-branch`
- Resolve the conflict by editing the conflicted file. Then:
  - `git add .`
  - `git commit -m "Resolve merge conflict"`

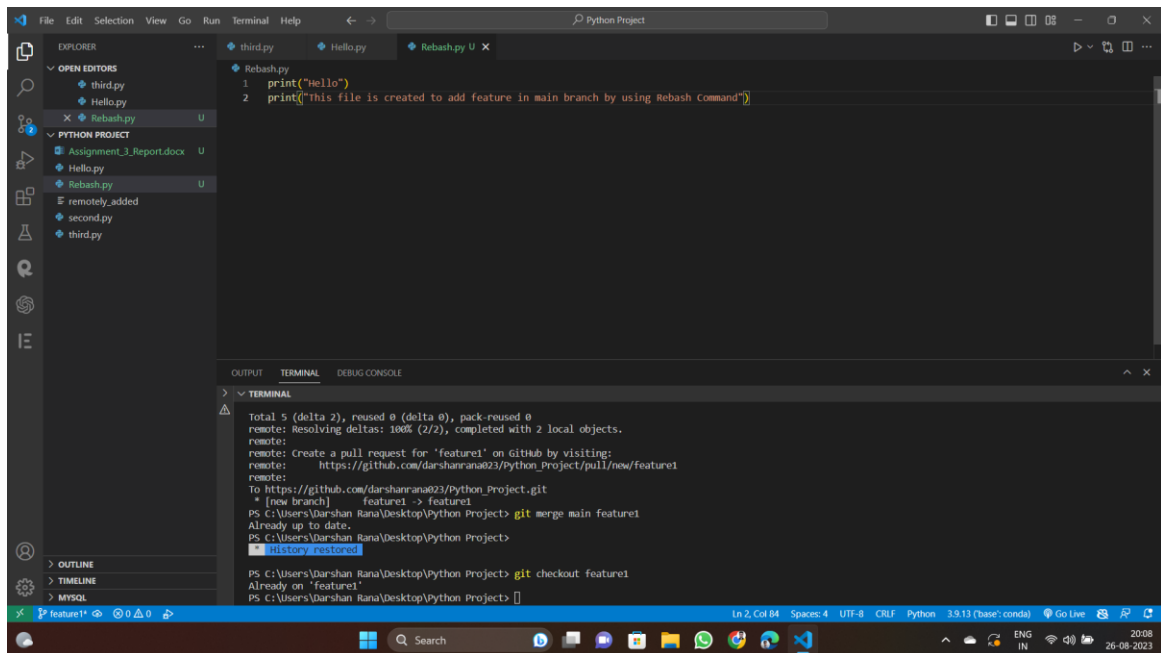




## 5. Rebasing and History Cleanup:

- Create a new branch and make several commits.
- Rebase the branch interactively:
  - `git checkout feature/rebase-branch`
  - `git rebase -i HEAD~<number of commits>`

- Squash, reword, or rearrange commits in the interactive rebase menu.
  - Merge the branch back to main using a fast-forward merge:
- git checkout main
- git merge feature/rebase-branch



The screenshot shows the Visual Studio Code interface. The Explorer pane on the left shows the project structure with files like `third.py`, `Hello.py`, `Rebask.py`, `Assignment_3_Report.docx`, `remotely_added`, `second.py`, and `third.py`. The main editor shows a Python file with the following code:

```
1 print("Hello")
2 print("This file is created to add feature in main branch by using Rebask Command")
```

The TERMINAL pane at the bottom shows the output of a `git merge` command:

```
Total 5 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote: Create a pull request for 'feature1' on GitHub by visiting:
remote:   https://github.com/darshanrana023/Python_Project/pull/new/feature1
remote:
To https://github.com/darshanrana023/Python_Project.git
 * (new branch) feature1 -> feature1
PS C:\Users\Darshan Rana\Desktop\Python Project> git merge main feature1
Already up to date.
PS C:\Users\Darshan Rana\Desktop\Python Project>
History restored
PS C:\Users\Darshan Rana\Desktop\Python Project> git checkout feature1
Already on 'feature1'
PS C:\Users\Darshan Rana\Desktop\Python Project>
```

