

Git Hands-On Activity

Learning Objectives

By the end of this activity, students will:

- Track files with Git
 - Understand staging and commits
 - Create and switch branches
 - Merge branches
 - Resolve merge conflicts
-

Step 0: Clone the Repository

```
git clone <your-github-classroom-repo-url>  
cd <repo-name>
```

Step 1: Check Repository Status

```
git status
```

Expected:

```
On branch main  
nothing to commit, working tree clean
```

Step 2: Create a New File

Create a file named `notes.txt`:

```
touch notes.txt
```

Add the following content:

```
This line was written first.
```

Step 3: Check Status Again

```
git status
```

Expected:

```
Untracked files:  
  notes.txt
```

Step 4: Stage the File

```
git add notes.txt
```

Check status:

```
git status
```

Expected:

```
Changes to be committed:  
  new file:   notes.txt
```

Step 5: Commit the File

```
git commit -m "Add notes.txt"
```

Step 6: Push to GitHub

```
git push origin main
```

Step 7: Create and Switch to a New Branch

```
git checkout -b feature/edit-notes
```

Step 8: Modify the SAME Line in the Branch

Edit notes.txt:

This line is edited in the feature branch.

```
git add notes.txt
```

```
git commit -m "Edit notes.txt in feature branch"
```

Step 9: Switch Back to main

```
git checkout main
```

Step 10: Modify the SAME Line in main

Edit notes.txt:

This line is edited in the main branch.

```
git add notes.txt
git commit -m "Edit notes.txt in main branch"
git push origin main
```

Step 11: Pull main into Feature Branch (Conflict Guaranteed)

First, set **pull behavior** (run once):

```
git config pull.rebase false
```

Now pull:

```
git checkout feature/edit-notes
git pull --no-rebase origin main
```

Expected:

CONFLICT (content): Merge conflict in notes.txt

Step 12: Inspect the Conflict

Open notes.txt:

```
<<<<<< HEAD
This line is edited in the feature branch.
=====
This line is edited in the main branch.
>>>>>> main
```

Step 13: Resolve the Conflict

Edit notes.txt to:

This line is resolved after a merge conflict.

Save the file.

```
git add notes.txt
git commit -m "Resolve merge conflict"
```

Step 14: Merge Feature Branch into Main

```
git checkout main  
git merge feature/edit-notes  
git push origin main
```

Step 15: View Commit History

```
git log --oneline --graph --all
```

Commands Covered

```
git clone git status git add git commit git push git checkout  
-b git pull --no-rebase git merge git log
```
