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Assignment 1:

Initialize a new Git repository in a directory of your choice. Add a simple text file to the repository and make the first commit.

1. Open your terminal or command prompt.

2. Navigate to the directory where you want to create your Git repository.

Use the `cd` command to change directories. For example, if you want to create the repository on your desktop, you might type:

3. Initialize a Git repository.

A screenshot of a terminal window titled "MINGW64:/c/Users/Bileni/Desktop/git Wipro JFS". The terminal shows the following commands and output:

```
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git init
Reinitialized existing Git repository in C:/Users/Bileni/Desktop/git Wipro JFS/.git/
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$
```

This will create a hidden folder called `.git` in your directory, which stores all the Git metadata for your project.

4. Create a simple text file.

You can use any text editor to create a new file. For example, you could open your preferred text editor and create a new file named `readme.txt`.

5. Add the text file to the staging area.

Use the `git add` command followed by the filename to stage the file for your next commit.

6. Commit the changes.

Type the following command and press Enter. Add a short message describing your commit, like "Initial commit with `readme.txt`".

```
MINGW64:/c:/Users/Bileni/Desktop/git Wipro JFS
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git init
Reinitialized existing Git repository in C:/Users/Bileni/Desktop/git Wipro JFS/.git/

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ notepad readme.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git add readme.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git commit -m "Initial commit with readme.txt"
[master (root-commit) 6bf1bbb] Initial commit with readme.txt
1 file changed, 1 insertion(+)
create mode 100644 readme.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ |
```

This creates your first Git repository with a single commit containing your readme.txt file.

Additional Notes:

- You can verify the status of your Git repository using the git status command.
- To see the history of your commits, use the git log command.

```
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git status
On branch master
nothing to commit, working tree clean

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git log
commit 6bf1bbb2b3ec46b03c935f2b3bbba2289a540b6a (HEAD -> master)
Author: vaishu16003 <vaishalikaler16@gmail.com>
Date: Sat May 18 20:31:50 2024 +0530

    Initial commit with readme.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ |
```

Assignment 2:

Branch Creation and Switching Create a new branch named 'feature' and switch to it. Make changes in the 'feature' branch and commit them

1. Verify your current branch:

Use the `git branch` command to see which branch you're currently on. The output will show the active branch with an asterisk (*).

2. Create a new branch named 'feature':

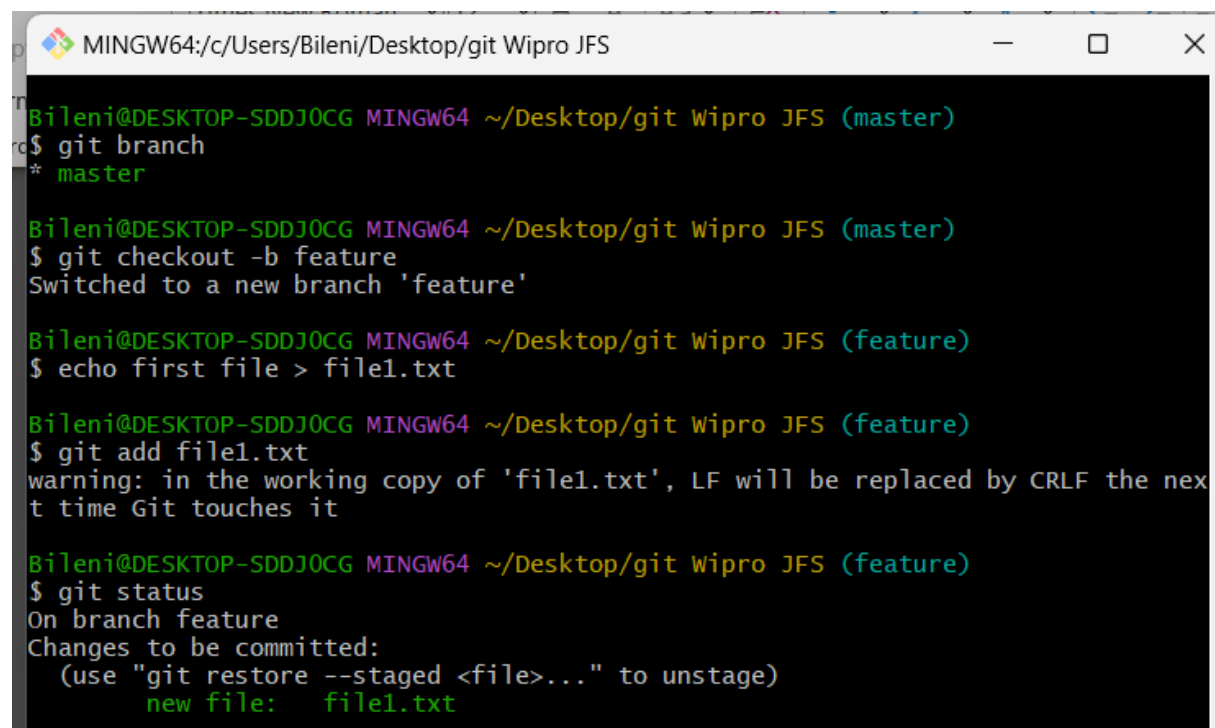
This command creates a new branch named 'feature' and switches your working directory to that branch.

3. Make changes to your files:

Now that you're in the 'feature' branch, you can edit your existing files or create new ones.

4. Stage your changes:

Once you've made your modifications, use `git add` to stage the changes for your next commit. For example, to stage a modified file named `file1.txt`:



```
MINGW64:/c/Users/Bileni/Desktop/git Wipro JFS
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git branch
* master

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (master)
$ git checkout -b feature
Switched to a new branch 'feature'

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (feature)
$ echo first file > file1.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (feature)
$ git add file1.txt
warning: in the working copy of 'file1.txt', LF will be replaced by CRLF the next time Git touches it

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (feature)
$ git status
On branch feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   file1.txt
```

5. Commit your changes:

Use the `git commit` command followed by a descriptive message for your commit. For instance:

This creates a commit in your 'feature' branch, recording the changes you made.

6. Verify your branch (optional):

Use `git branch` again to confirm that you're still on the 'feature' branch and see the newly created branch.

```
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git wipro JFS (feature)
$ git status
On branch feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   file1.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git wipro JFS (feature)
$ git commit -m "file1 is created"
[feature dale8fe] file1 is created
1 file changed, 1 insertion(+)
create mode 100644 file1.txt

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git wipro JFS (feature)
$ git branch
* feature
  master

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git wipro JFS (feature)
$
```

Assignment 3:

Feature Branches and Hotfixes Create a 'hotfix' branch to fix an issue in the main code. Merge the 'hotfix' branch into 'main' ensuring that the issue is resolved.

Steps:

1). Clone the Repository :

```
MINGW64:/c:/Users/Bileni/Desktop/git Wipro JFS/git-Wipro-JFS

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (main)
$ git clone https://github.com/vaishu16003/git-Wipro-JFS.git
Cloning into 'git-Wipro-JFS'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 7 (delta 1), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (7/7), done.
Resolving deltas: 100% (1/1), done.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS (main)
$ cd git-Wipro-JFS
```

2). Create a Hotfix Branch:

```
MINGW64:/c:/Users/Bileni/Desktop/git Wipro JFS/git-Wipro-JFS

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git pull origin main
From https://github.com/vaishu16003/git-Wipro-JFS
* branch      main      -> FETCH_HEAD
Already up to date.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git checkout -b hotfix
Switched to a new branch 'hotfix'

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ echo "//hotfix applied to resolve issue X" >> app.js

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git add app.js
warning: in the working copy of 'app.js', LF will be replaced by CRLF the next time Git touches it
```

3). Make the Necessary Changes:

Edit the files that need fixing. For example, let's say there's a bug in app.js. Open the file and make the necessary changes.

4). Stage and Commit the Changes:

```
MINGW64:/c/Users/Bileni/Desktop/git Wipro JFS/git-Wipro-JFS

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git add .

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git commit -m "fix issue with .... in relevant files:"
[hotfix 1acb80f] fix issue with .... in relevant files:
1 file changed, 1 insertion(+)
create mode 100644 app.js
```

5). Push the Hotfix Branch to Remote:

```
MINGW64:/c/Users/Bileni/Desktop/git Wipro JFS/git-Wipro-JFS

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git push --set-upstream origin hotfix

Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 402 bytes | 402.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'hotfix' on GitHub by visiting:
remote:   https://github.com/vaishu16003/git-Wipro-JFS/pull/new/hotfix
remote:
To https://github.com/vaishu16003/git-Wipro-JFS.git
 * [new branch]      hotfix -> hotfix
branch 'hotfix' set up to track 'origin/hotfix'.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

6).Create a Pull Request (PR) on GitHub:

- Go to your repository on GitHub.
- You'll see a prompt to compare and pull request your recent pushed branch.
- Click on it, fill in the details, and create the pull request.

7).Merge the Hotfix Branch into Main:

- Review the changes in the pull request.
- If everything looks good, merge the pull request.

- Alternatively, you can merge from the command line:

```
MINGW64:/c/Users/Bileni/Desktop/git Wipro JFS/git-Wipro-JFS
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (hotfix)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git pull origin main
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (1/1), 912 bytes | 912.00 KiB/s, done.
From https://github.com/vaishu16003/git-Wipro-JFS
* branch          main          -> FETCH_HEAD
   9f4967a..7ad6503  main          -> origin/main
Updating 9f4967a..7ad6503
Fast-forward
 app.js | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 app.js

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git merge hotfix
Already up to date.
```

8).Push the Merged Changes to Remote:

```
Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git merge hotfix
Already up to date.

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$ git push origin main
Everything up-to-date

Bileni@DESKTOP-SDDJ0CG MINGW64 ~/Desktop/git Wipro JFS/git-Wipro-JFS (main)
$
```