How to Create a New Branch in Your GitHub Repository, Add a Feature, and Merge It

ABOUT:

Creating a new branch in a GitHub repository is a common practice in software development to test or add new features without impacting the main codebase. By isolating changes in a separate branch, developers can experiment, review, and validate the modifications before merging them into the main branch.

SIGNIFICANCE:

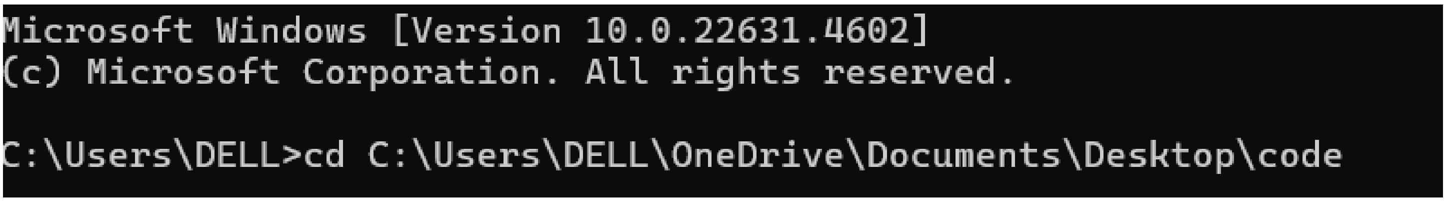
1. Code Isolation: Ensures changes are isolated, minimizing the risk of breaking the main branch or affecting existing functionality.
2. Parallel Development: Allows multiple developers or teams to work on different features simultaneously without interfering with each other's work.
3. Efficient Testing: Features can be tested thoroughly in a dedicated environment, ensuring quality before integration.
4. Conflict Resolution: Makes resolving merge conflicts easier and localized to specific features.

STEP 1:

Create a folder with files.

STEP 2:

Open Command prompt in your system and copy the folder path



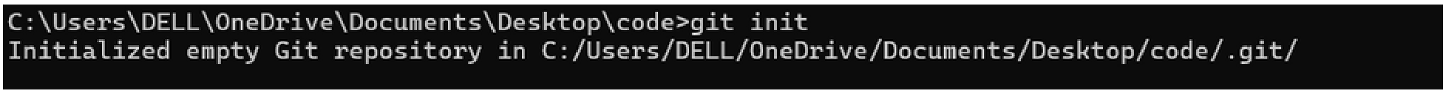
```
Microsoft Windows [Version 10.0.22631.4602]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DELL>cd C:\Users\DELL\OneDrive\Documents\Desktop\code
```

Paste the path next to cd

STEP 3:

Initialize git - git init

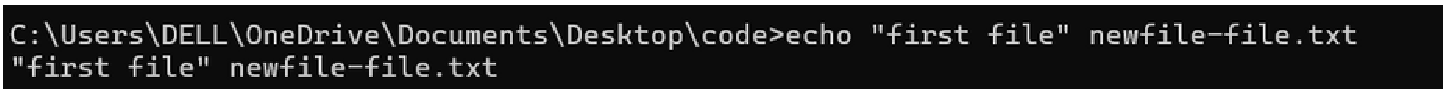
git . folder will be created into your local folder which will record all the files in your folder



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git init
Initialized empty Git repository in C:/Users/DELL/OneDrive/Documents/Desktop/code/.git/
```

STEP 4:

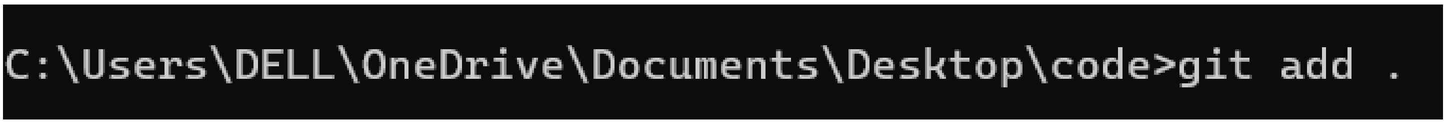
Type the following command to create a new file into your empty repository



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>echo "first file" newfile-file.txt
"first file" newfile-file.txt
```

STEP 5:

Add the file to your git repository and keep track your file’s activity

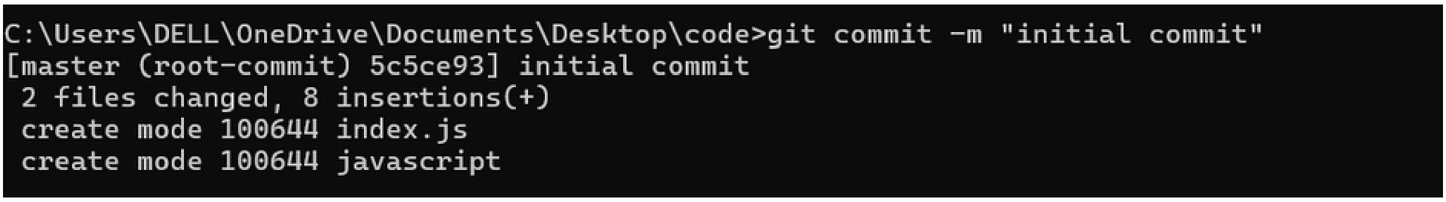


```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git add .
```

STEP 6:

Commit the files inside your folder to git

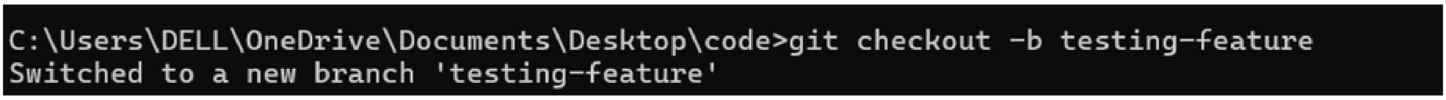
using the command: git commit -m “message”



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git commit -m "initial commit"
[master (root-commit) 5c5ce93] initial commit
 2 files changed, 8 insertions(+)
 create mode 100644 index.js
 create mode 100644 javascript
```

STEP 7:

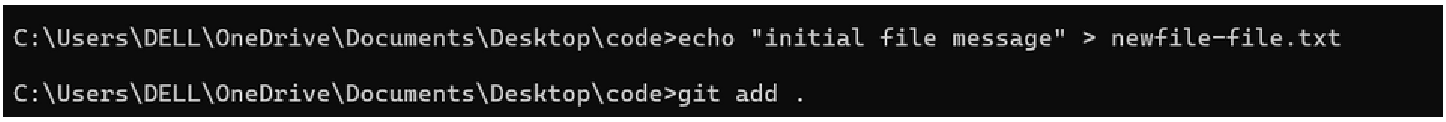
switch to a new branch



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git checkout -b testing-feature
Switched to a new branch 'testing-feature'
```

STEP 8:

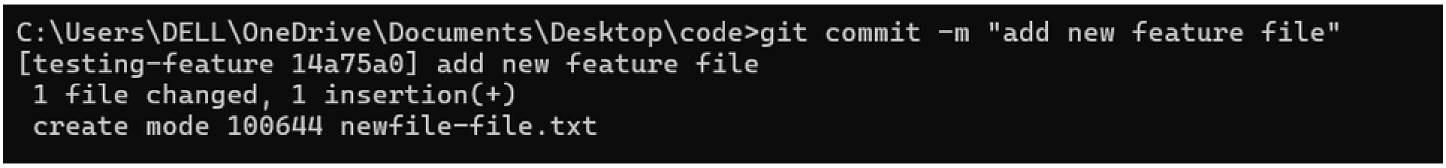
add a file to the feature and stage the content



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>echo "initial file message" > newfile-file.txt

C:\Users\DELL\OneDrive\Documents\Desktop\code>git add .
```

STEP 9:

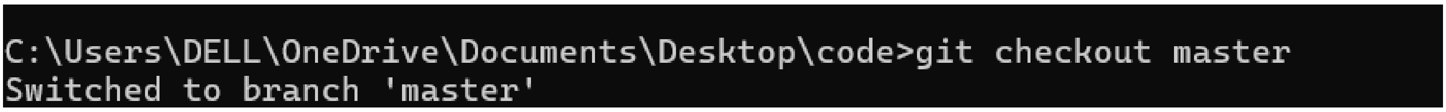
commit the content change



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git commit -m "add new feature file"
[testing-feature 14a75a0] add new feature file
 1 file changed, 1 insertion(+)
 create mode 100644 newfile-file.txt
```

STEP 10:

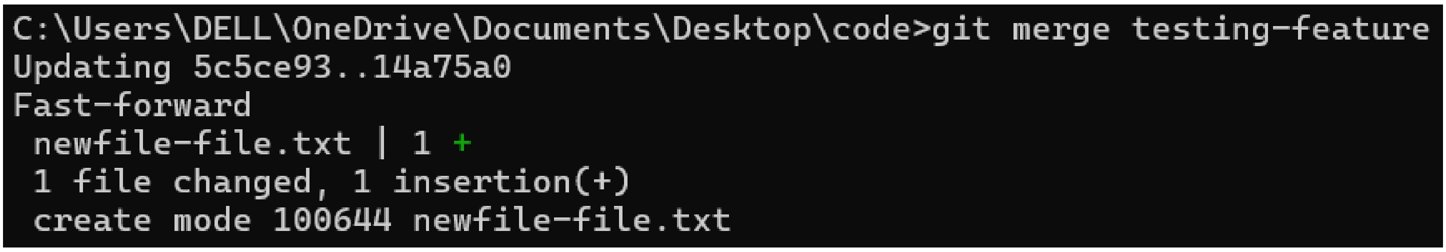
Go to master branch



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git checkout master
Switched to branch 'master'
```

STEP 11:

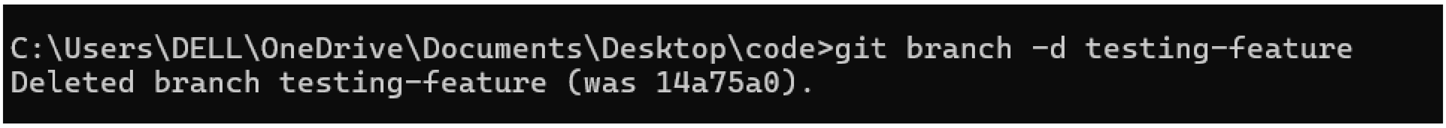
follow the command and merge changes to master branch



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git merge testing-feature
Updating 5c5ce93..14a75a0
Fast-forward
 newfile-file.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 newfile-file.txt
```

STEP 12:

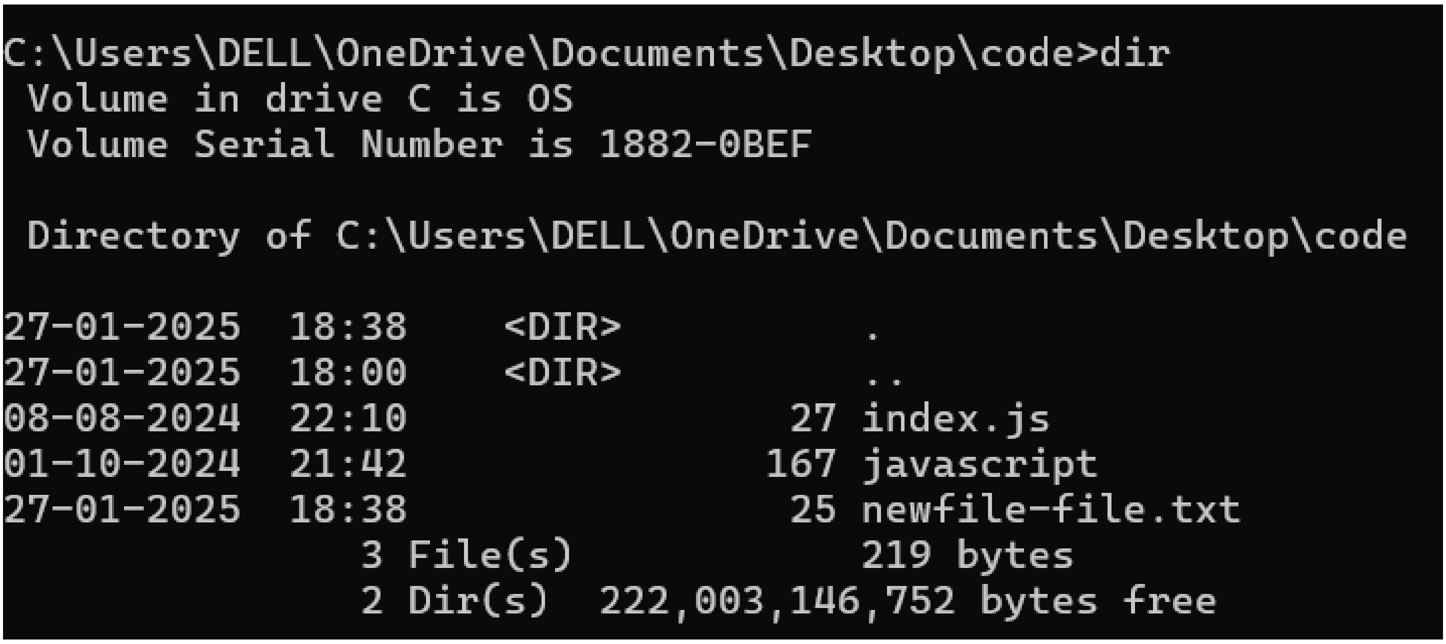
delete the merged branch



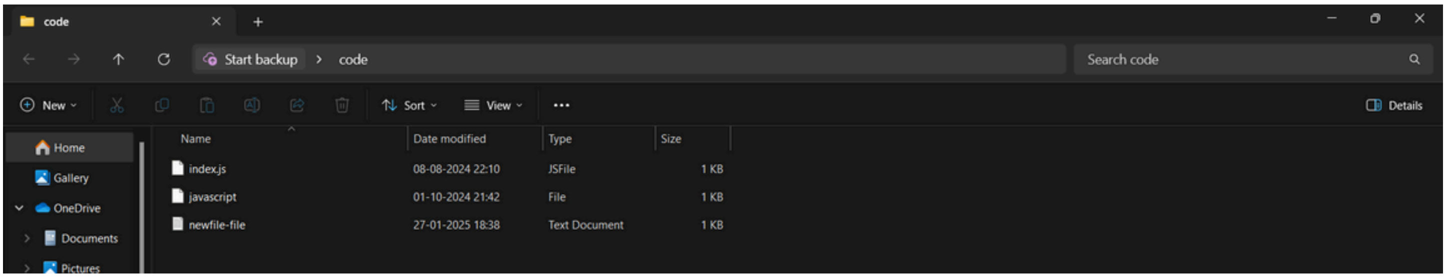
```
C:\Users\DELL\OneDrive\Documents\Desktop\code>git branch -d testing-feature
Deleted branch testing-feature (was 14a75a0).
```

STEP 13:

files are copied inside folder



```
C:\Users\DELL\OneDrive\Documents\Desktop\code>dir
 Volume in drive C is OS
 Volume Serial Number is 1882-0BEF

 Directory of C:\Users\DELL\OneDrive\Documents\Desktop\code

27-01-2025  18:38    <DIR>          .
27-01-2025  18:00    <DIR>          ..
08-08-2024  22:10                27 index.js
01-10-2024  21:42               167 javascript
27-01-2025  18:38                25 newfile-file.txt
               3 File(s)            219 bytes
               2 Dir(s)  222,003,146,752 bytes free
```



Name	Date modified	Type	Size
index.js	08-08-2024 22:10	JSFile	1 KB
javascript	01-10-2024 21:42	File	1 KB
newfile-file	27-01-2025 18:38	Text Document	1 KB

Outcomes:

1. A new branch (feature/test-branch) is created and used for testing or adding new features.
2. The changes are safely merged into the main branch without disrupting the production codebase.
3. Efficient collaboration and code management through Git’s branching and merging workflows.