1- Check if Git is installed on our computer.
2- Initialize a new Git repository in the current folder "C:\Git-GitHub\GTEC-Training".
3- Check the current state of our working directory and staging area.
4- Stage changes in our working directory for the next commit.
5- Create a new commit with message describing the changes we have staged.
6- List all local branches in this Git repository.
7- Create a new branch, switch to it and list all branches in the Git repository.
8- Return to branch master and display the history of commits in this branch.
9- Merge a new text file into branch master:
    a. Add a new text file "Git-Commands" in the current folder "C:\Git-GitHub\GTEC-Training".
    b. Stage changes in our working directory for the next commit.
    c. Create a new commit with a message describing the changes we have staged and display the history of commits.
10- Create a new remote repository "Git-GitHub" and link it to our local Git repository at "C:\Git-GitHub\GTEC-Training".
11- Check the current state of the remote repository "Git-GitHub":
    a. Show remote names.
    b. List all remotes connected to our local Git repository at "C:\Git-GitHub\GTEC-Training" along with their URLs.
    c. Download updates from the remote repository "Git-GitHub".
    d. Display the URL of the origin remote to which our local project is connected.
12- Create another remote repository "SeleniumJavaAutomation":
    a. Update the origin remote to point to the "SeleniumJavaAutomation" repository.
    b. Switch back to the first remote repository "Git-GitHub" and display its URL.
13- Manage project versions by switching between branches using the Git repository at "C:\Git-GitHub\GTEC-Training":
    a. Highlight the branch currently working on it.
    b. Switch to branch "feature25_05_2025", copy/paste the text file, stage it in our working directory and commit it with clear message.
14- Push & update the remote "feature25_05_2025" branch:
    a. Check that the origin remote is pointing to the "Git-GitHub" repository.
    b. Push our local commits from "feature25_05_2025" branch to the remote repository (origin).
    c. Check that the remote "feature25_05_2025" branch is updated.
15- Push & update the remote "master":
    a. Switch to "master" branch.
    b. Push our local commits from "master" branch to the remote repository (origin).
    c. Check that the remote "master" branch is updated.
16- Create a copy of the remote repository into our local machine.

Solution:

1- git version

```
C:\Git-GitHub\GTEC-Training>git version
git version 2.41.0.windows.1
```

2- git init

```
C:\Git-GitHub\GTEC-Training>git init
Initialized empty Git repository in C:/Git-GitHub/GTEC-Training/.git/
```

Notes: When we run the command git init, Git creates a .git/ folder in the current directory:

This hidden folder contains the metadata and internal files Git needs to track versions (like commits, branches, configuration, etc).

3- git status

```
C:\Git-GitHub\GTEC-Training>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Practrice-Git-GitHub.docx

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

Area	What it tells us
Current branch	Which branch you're working on
Changes to be committed	Files staged for the next commit
Changes not staged	Modified files not yet staged ('git add' needed)
Untracked files	New files not tracked by Git yet
Files ignored	Files ignored via '.gitignore'

4- git add Practrice-Git-GitHub.docx

```
C:\Git-GitHub\GTEC-Training>git add Practrice-Git-GitHub.docx

C:\Git-GitHub\GTEC-Training>git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   Practrice-Git-GitHub.docx
```

This command is used to stage a specific file.

It moves changes from the working Directory → to the Staging Area.

5- git commit -m "add the new file: Practrice-Git-GitHub.docx"

git status

```
C:\Git-GitHub\GTEC-Training>git commit -m "add the new file: Practrice-Git-GitHub.docx"
[master (root-commit) 09bc736] add the new file: Practrice-Git-GitHub.docx
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Practrice-Git-GitHub.docx

C:\Git-GitHub\GTEC-Training>git status
On branch master
nothing to commit, working tree clean
```

6- git branch

```
C:\Git-GitHub\GTEC-Training>git branch
* master
```

→ The only available branch is master, and we are currently checked out on it.

7- git branch feature25_05_2025: Create a new branch named feature25_05_2025

git branch: Presence of two branches master and feature25_05_2025 but still checked out on master branch.

git checkout feature25_05_2025: Switch to branch feature25_05_2025

git branch: Presence of two branches master and feature25_05_2025, and we are currently checked out on branch feature25_05_2025.

git status

```
C:\Git-GitHub\GTEC-Training>git branch feature25_05_2025

C:\Git-GitHub\GTEC-Training>git branch
  feature25_05_2025
* master

C:\Git-GitHub\GTEC-Training>git checkout feature25_05_2025
Switched to branch 'feature25_05_2025'

C:\Git-GitHub\GTEC-Training>git branch
* feature25_05_2025
  master

C:\Git-GitHub\GTEC-Training>git status
On branch feature25_05_2025
nothing to commit, working tree clean
```

8- git checkout master

git log

```
C:\Git-GitHub\GTEC-Training>git checkout master
Switched to branch 'master'

C:\Git-GitHub\GTEC-Training>git log
commit 09bc736ec178eb341ce232e31a3cf6e6c9554ace (HEAD -> master, feature25_05_2025)
Author: ManelDerbel <manel11derbel@gmail.com>
Date:   Sun May 25 05:08:55 2025 +0400

    add the new file: Practrice-Git-GitHub.docx
```

Notes: Displays the history of commits in our current Git branch master, from most recent (HEAD) to oldest. Each commit shows:

- The commit hash (ID)
- The author

- The date
- The commit message

9-

a. Create a new text file "Git-Commands" in the local directory "C:\Git-GitHub\GTEC-Training".

git status

```
C:\Git-GitHub\GTEC-Training>git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Git-Commands.txt

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

→ The file "Git-Commands" exists in the working directory but is not yet tracked by Git.

b. git add .

```
C:\Git-GitHub\GTEC-Training>git add .
```

→ Stage all changes (new, modified, deleted files) in the current directory and below.

git status

```
C:\Git-GitHub\GTEC-Training>git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   Git-Commands.txt
```

→ The file "Git-Commands" exists in the working directory, tracked and staged by Git for the next commit.

c. git commit -m "add the new file: Git-Commands.txt"

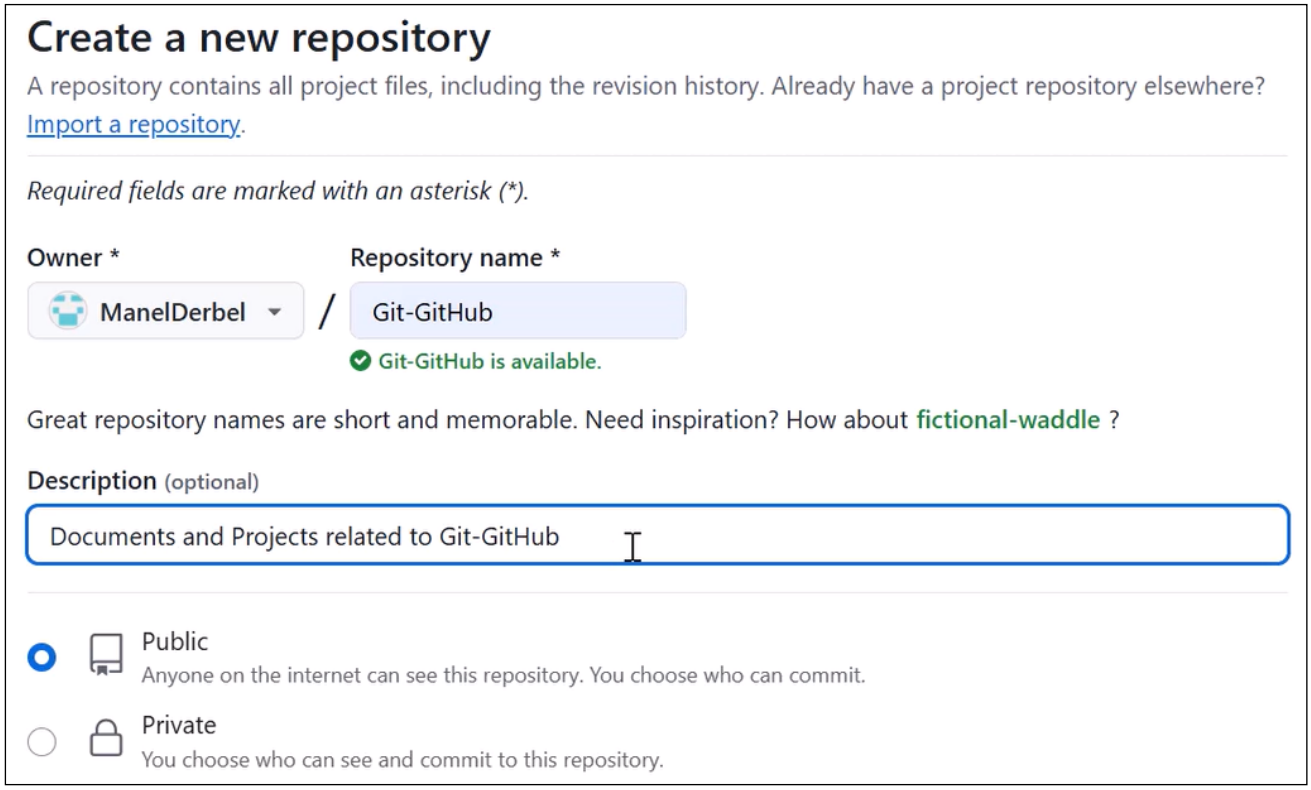
```
C:\Git-GitHub\GTEC-Training>git commit -m "add the new file: Git-Commands.txt"
[master 718abc6] add the new file: Git-Commands.txt
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Git-Commands.txt
```

git log

```
C:\Git-GitHub\GTEC-Training>git log
commit 718abc65ddf24280bb47331d8a71e5cba673722a (HEAD -> master)
Author: ManelDerbel <manel11derbel@gmail.com>
Date:   Sun May 25 05:37:04 2025 +0400

    add the new file: Git-Commands.txt

commit 09bc736ec178eb341ce232e31a3cf6e6c9554ace (feature25_05_2025)
Author: ManelDerbel <manel11derbel@gmail.com>
Date:   Sun May 25 05:08:55 2025 +0400

    add the new file: Practrice-Git-GitHub.docx
```

→ The most recent commit involving "Git-Commands.txt" is displayed as the HEAD commit on the master branch.

10- Sign up to GitHub and refer to this link: https://github.com/new



git remote add origin https://github.com/ManelDerbel/Git-GitHub

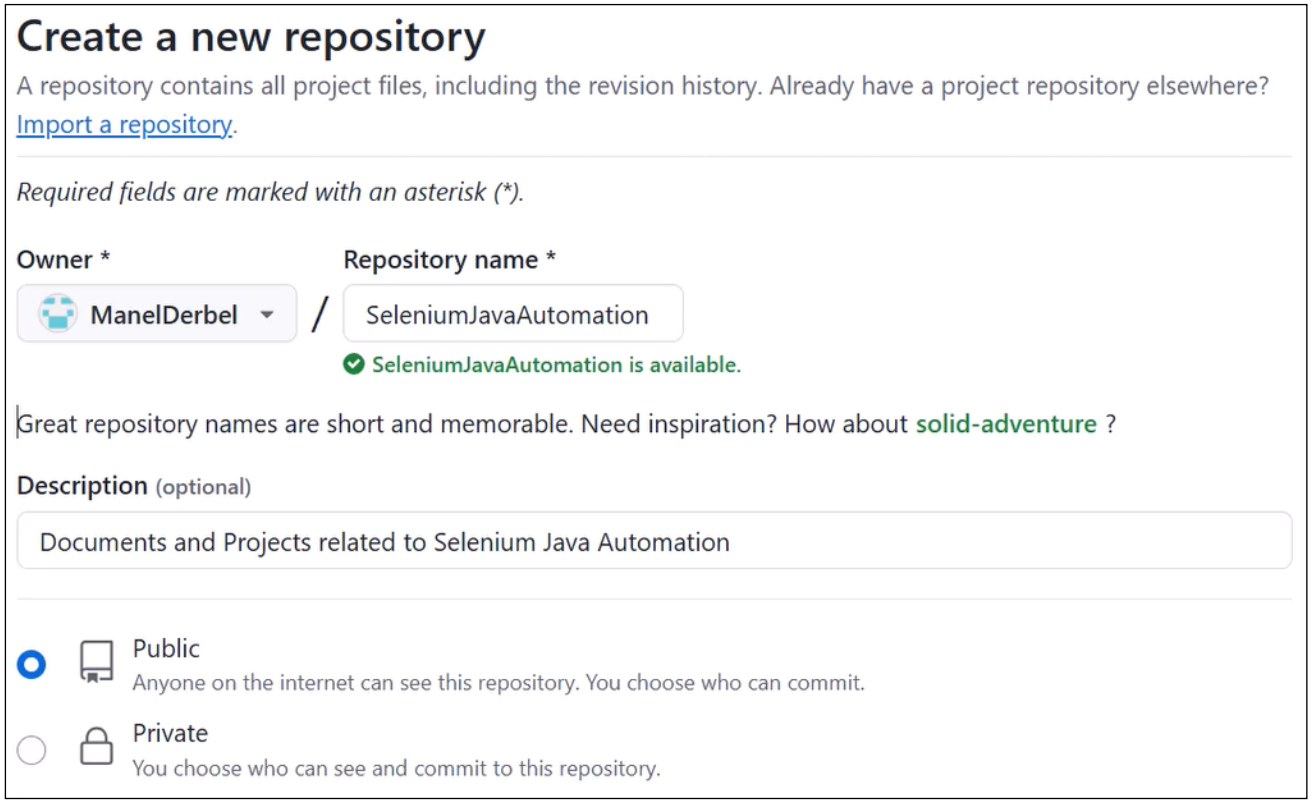
```
C:\Git-GitHub\GTEC-Training>git remote add origin https://github.com/ManelDerbel/Git-GitHub
```

11-

a. git remote
b. git remote -v
c. git fetch: Downloads updates from the remote repository "Git-GitHub" without merge them into our local copy of the remote at "C:\Git-GitHub\GTEC-Training".
d. git remote get-url origin

```
C:\Git-GitHub\GTEC-Training>git remote
origin

C:\Git-GitHub\GTEC-Training>git remote -v
origin  https://github.com/ManelDerbel/Git-GitHub (fetch)
origin  https://github.com/ManelDerbel/Git-GitHub (push)

C:\Git-GitHub\GTEC-Training>git fetch

C:\Git-GitHub\GTEC-Training>git remote get-url origin
https://github.com/ManelDerbel/Git-GitHub
```

12- Refer to the link: https://github.com/new



a. git remote set-url origin https://github.com/ManelDerbel/SeleniumJavaAutomation
   git remote get-url origin

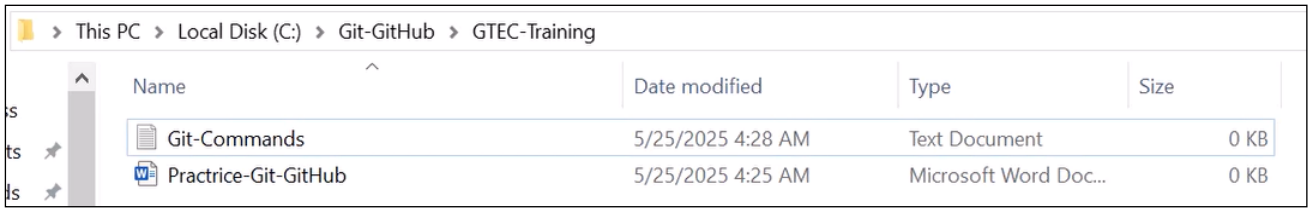
b. git remote set-url https://github.com/ManelDerbel/Git-GitHub
   git remote get-url origin

```
C:\Git-GitHub\GTEC-Training>git remote set-url origin https://github.com/ManelDerbel/SeleniumJavaAutomation

C:\Git-GitHub\GTEC-Training>git remote get-url origin
https://github.com/ManelDerbel/SeleniumJavaAutomation

C:\Git-GitHub\GTEC-Training>git remote set-url origin https://github.com/ManelDerbel/Git-GitHub

C:\Git-GitHub\GTEC-Training>git remote get-url origin
https://github.com/ManelDerbel/Git-GitHub
```

13-

a. git branch

```
C:\Git-GitHub\GTEC-Training>git branch
  feature25_05_2025
* master
```

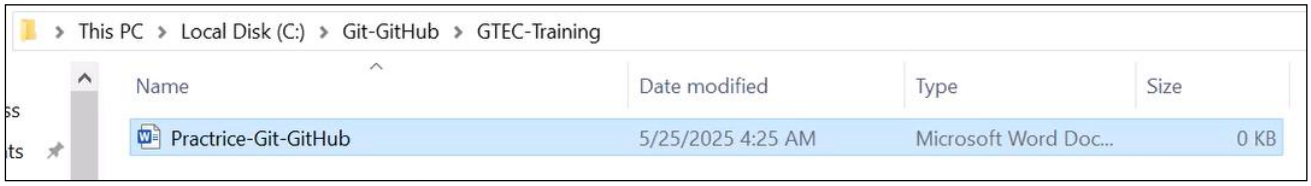


→ By referring to the local repository while working on the master branch, we detected that all files (word and text) are present on the repertoire.

b. git checkout feature25_05_2025
   git branch

git status: Check that there is nothing to be committed in the branch feature25_05_2025

```
C:\Git-GitHub\GTEC-Training>git checkout feature25_05_2025
Switched to branch 'feature25_05_2025'

C:\Git-GitHub\GTEC-Training>git branch
* feature25_05_2025
  master

C:\Git-GitHub\GTEC-Training>git status
On branch feature25_05_2025
nothing to commit, working tree clean
```



→ While working on the feature25_05_2025 branch, we found that only the Word file exists in the local repository. The missing files should be merged into this branch.

c. git add .
   git commit -m "Add the new file: Git-Commands"

```
C:\Git-GitHub\GTEC-Training>git add .

C:\Git-GitHub\GTEC-Training>git commit -m "Add the new file: Git-Commands"
[feature25_05_2025 e201e9c] Add the new file: Git-Commands
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Git-Commands.txt
```

14-

a. git remote get-url origin

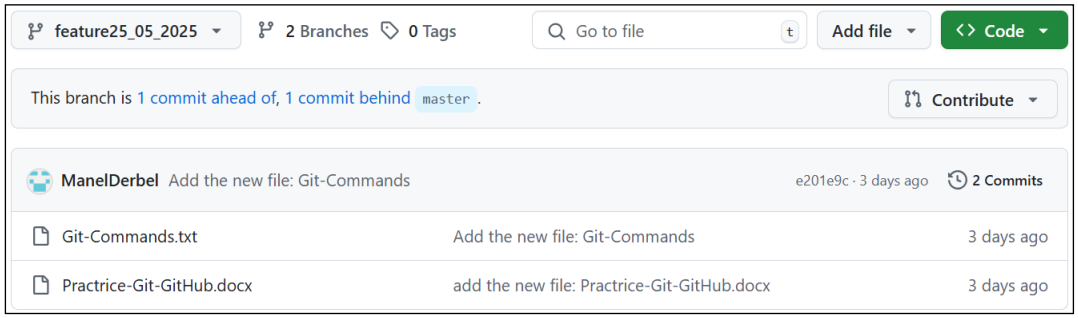
```
C:\Git-GitHub\GTEC-Training>git remote get-url origin
https://github.com/ManelDerbel/Git-GitHub
```

b. git push origin feature25_05_2025

```
C:\Git-GitHub\GTEC-Training>git push origin feature25_05_2025
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 510 bytes | 255.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/ManelDerbel/Git-GitHub
 * [new branch]      feature25_05_2025 -> feature25_05_2025
```

c. Using GitHub:

   Go to: https://github.com/ManelDerbel/Git-GitHub/tree/feature25_05_2025 and confirm that feature25_05_2025 branch contains our latest commits.



15-

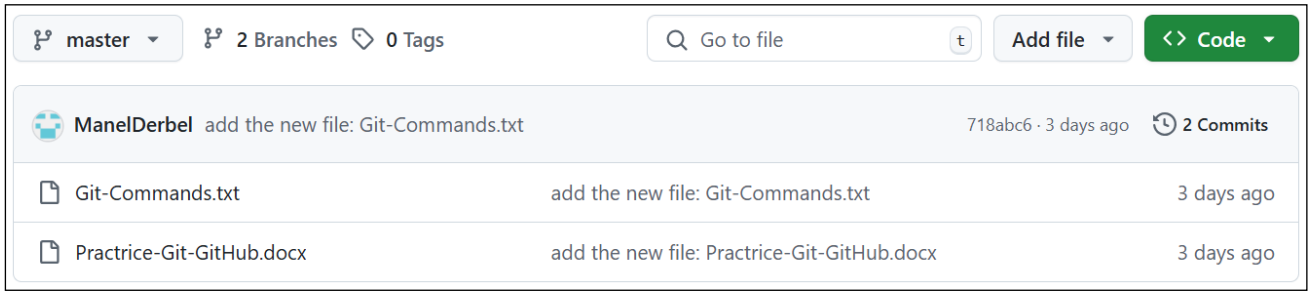
a. git checkout master
   git status: Check if there are any staged files that not yet committed.

```
C:\Git-GitHub\GTEC-Training>git branch
  feature25_05_2025
* master

C:\Git-GitHub\GTEC-Training>git status
On branch master
nothing to commit, working tree clean
```

b. git push -u origin master

```
C:\Git-GitHub\GTEC-Training>git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 289 bytes | 96.00 KiB/s, done.
Total 2 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:      https://github.com/ManelDerbel/Git-GitHub/pull/new/master
remote:
To https://github.com/ManelDerbel/Git-GitHub
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

c. By using GitHub:
   Go to: https://github.com/ManelDerbel/Git-GitHub/tree/master and confirm that master branch contains our latest commits.



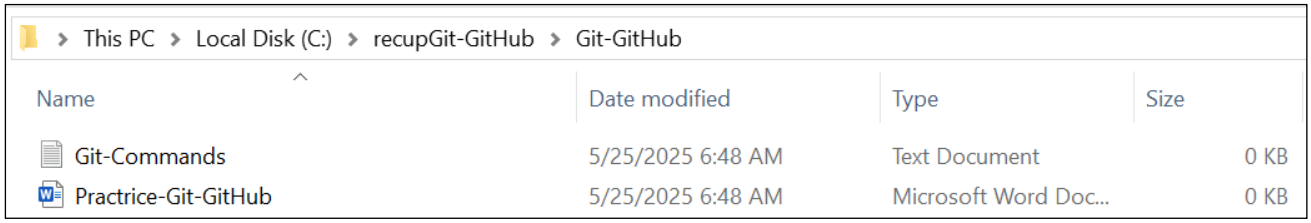
16- Create a new folder "recupGit-GitHub" and type cmd

git init

git clone https://github.com/ManelDerbel/Git-GitHub

```
C:\recupGit-GitHub>git init
Initialized empty Git repository in C:/recupGit-GitHub/.git/
```

```
C:\recupGit-GitHub>git clone https://github.com/ManelDerbel/Git-GitHub
Cloning into 'Git-GitHub'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 6 (delta 1), reused 5 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (6/6), done.
Resolving deltas: 100% (1/1), done.
```


This PC
Local Disk (C:)
recupGit-GitHub
Git-GitHub
Name
Date modified
Type
Size
Git-Commands
5/25/2025 6:48 AM
Text Document
0 KB
Practrice-Git-GitHub
5/25/2025 6:48 AM
Microsoft Word Doc...
0 KB