Git/GitHub

11 May 2024 10:35

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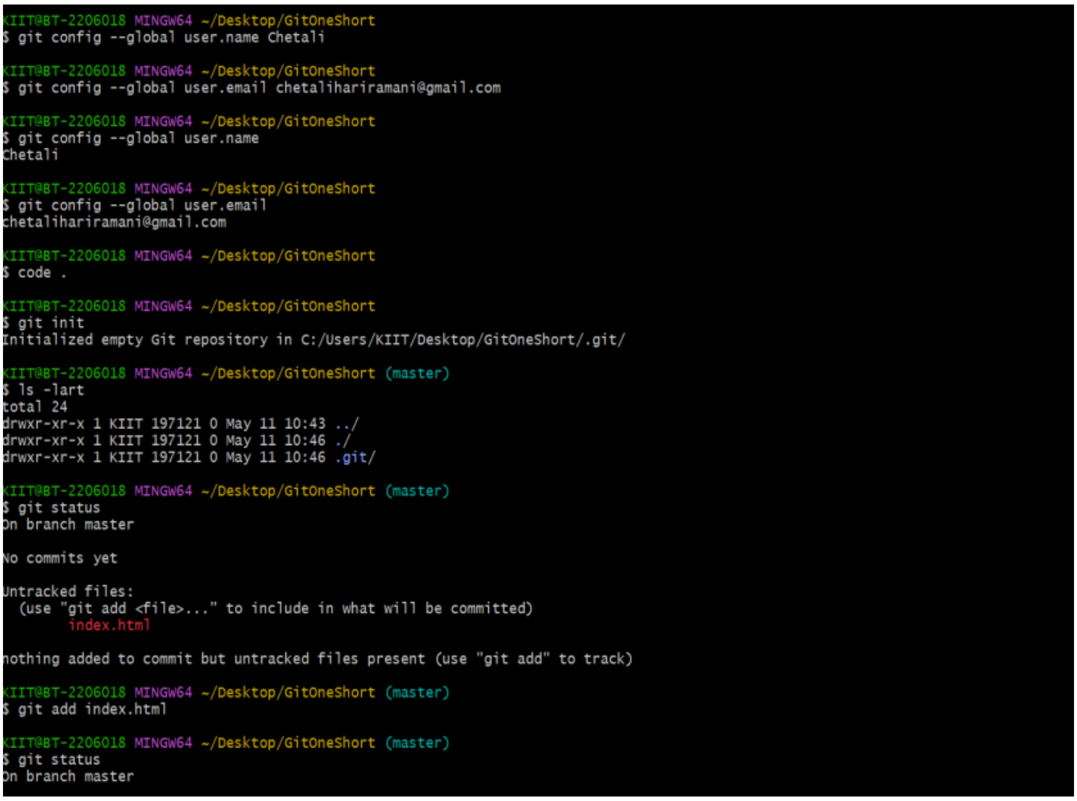
B.Tech, Information Technology
2026

Git Bash Terminal =>

Git - Distributed version control software meant for saving changes made to a code file.

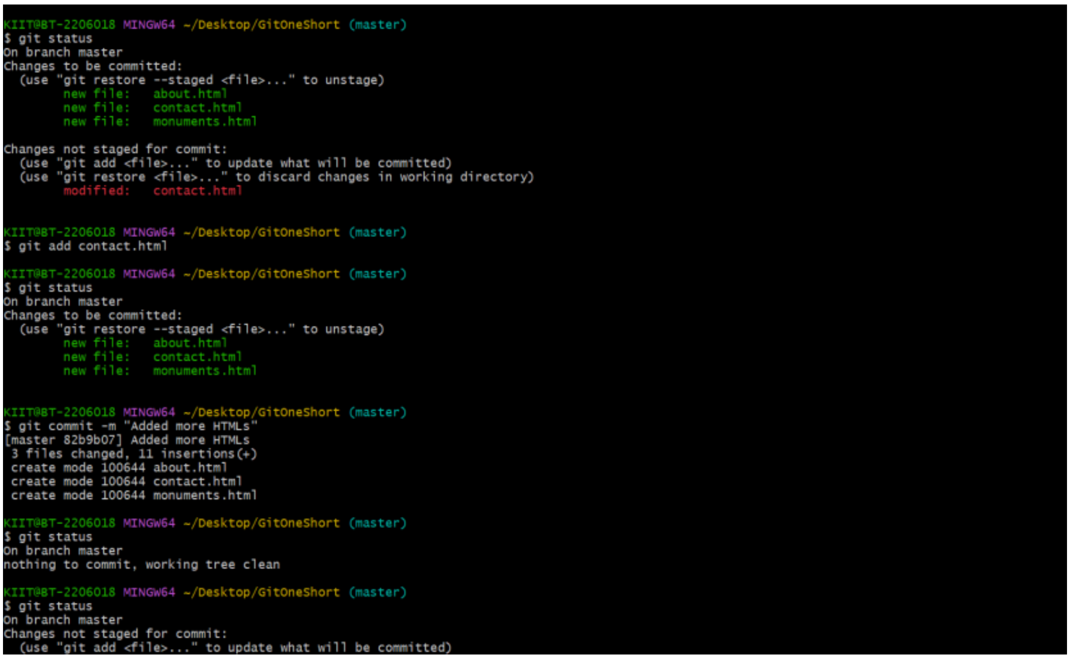
Each user has a copy of the code.

Git Bash - Terminal which works as Unix in Windows.
- Windows' file system works as Linux file system



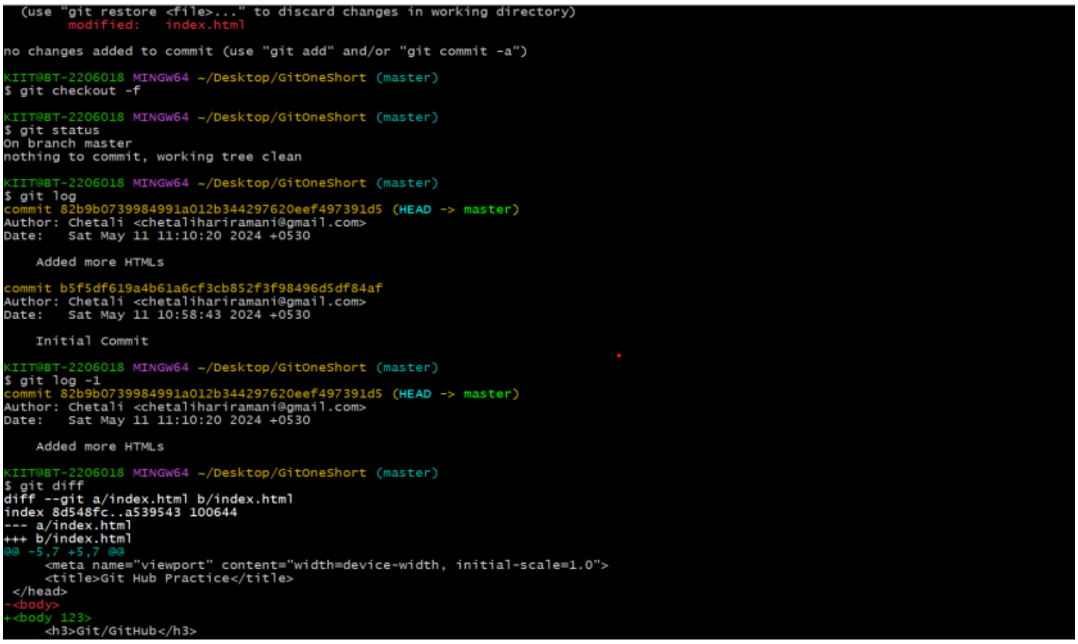
```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ git config --global user.name Chetali

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ git config --global user.email chetalihariramani@gmail.com

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ git config --global user.name
Chetali

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ git config --global user.email
chetalihariramani@gmail.com

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ code .

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort
$ git init
Initialized empty Git repository in C:/Users/KIIT/Desktop/GitOneShort/.git/

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ ls -lart
total 24
drwxr-xr-x 1 KIIT 197121 0 May 11 10:43 ../
drwxr-xr-x 1 KIIT 197121 0 May 11 10:46 ./
drwxr-xr-x 1 KIIT 197121 0 May 11 10:46 .git/

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html

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

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add index.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
```

code . => Opens VSCode
git init => Initializes local git repository
git status => Gives the details of all the changes made in the repository after the previous Git commit.
git add <file name> => Adds file to the stage. The file is now being tracked by the Git Bash platform.



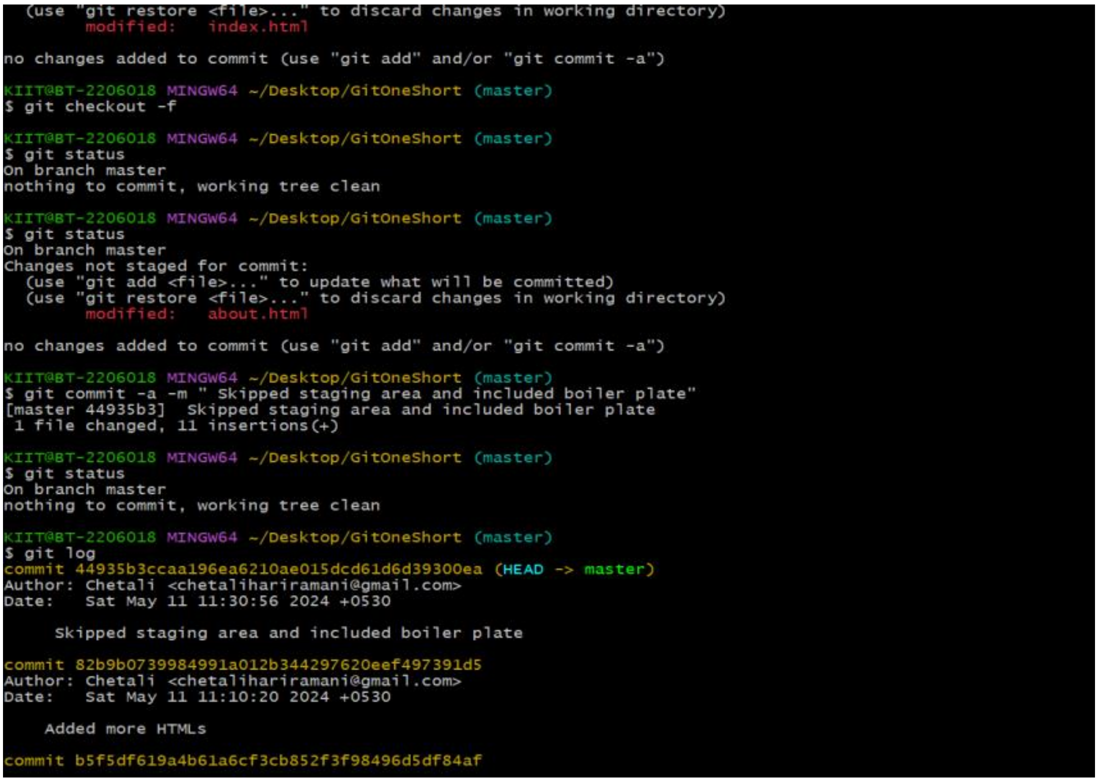
```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   about.html
        new file:   contact.html
        new file:   monuments.html

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   contact.html


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add contact.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   about.html
        new file:   contact.html
        new file:   monuments.html


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git commit -m "Added more HTMLs"
[master 82b9b07] Added more HTMLs
 3 files changed, 11 insertions(+)
 create mode 100644 about.html
 create mode 100644 contact.html
 create mode 100644 monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
```

git commit -m " <message> " => this commits the current state of repository to the Git platform with a message briefly describing the changes made.



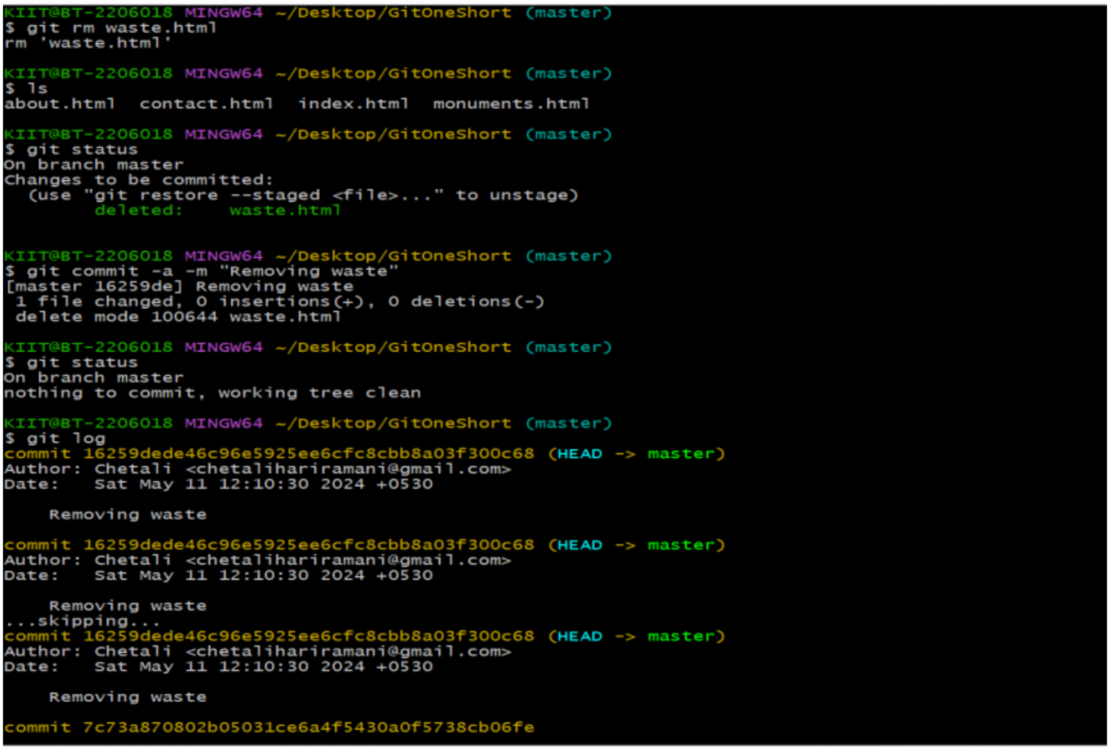
```
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

no changes added to commit (use "git add" and/or "git commit -a")

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout -f

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log
commit 82b9b0739984991a012b344297620eef497391d5 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 11:10:20 2024 +0530

    Added more HTMLs

commit b5f5df619a4b61a6cf3cb852f3f98496d5df84af
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 10:58:43 2024 +0530

    Initial Commit

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log -1
commit 82b9b0739984991a012b344297620eef497391d5 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 11:10:20 2024 +0530

    Added more HTMLs

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git diff
diff --git a/index.html b/index.html
index 8d548fc..a539543 100644
--- a/index.html
+++ b/index.html
@@ -5,7 +5,7 @@
     <meta name="viewport" content="width=device-width, initial-scale=1.0">
     <title>Git Hub Practice</title>
 </head>
-<body>
+<body 123>
     <h3>Git/GitHub</h3>
```

git checkout -f => It discards any changes that haven't been committed.
git log => It shows the details of all the previous commits.
git log -n (n=1,2,3,..) => Shows n number of previous commits.
git diff => Shows the changes made in files since previous commit.



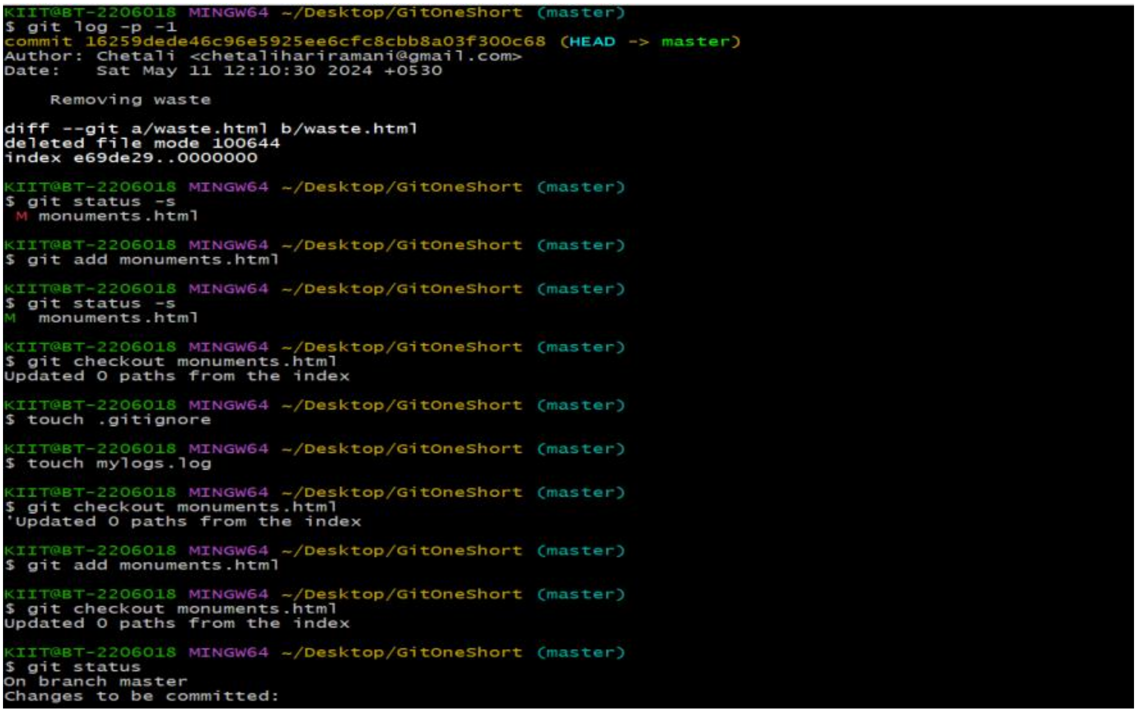
```
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

no changes added to commit (use "git add" and/or "git commit -a")

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout -f

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   about.html

no changes added to commit (use "git add" and/or "git commit -a")

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git commit -a -m " Skipped staging area and included boiler plate"
[master 44935b3]  Skipped staging area and included boiler plate
 1 file changed, 11 insertions(+)

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log
commit 44935b3ccaa196ea6210ae015dcd61d6d39300ea (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 11:30:56 2024 +0530

      Skipped staging area and included boiler plate

commit 82b9b0739984991a012b344297620eef497391d5
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 11:10:20 2024 +0530

    Added more HTMLs

commit b5f5df619a4b61a6cf3cb852f3f98496d5df84af
```

git commit -a -m " < message > " => commits all changes made in the repository in every file together with a message.



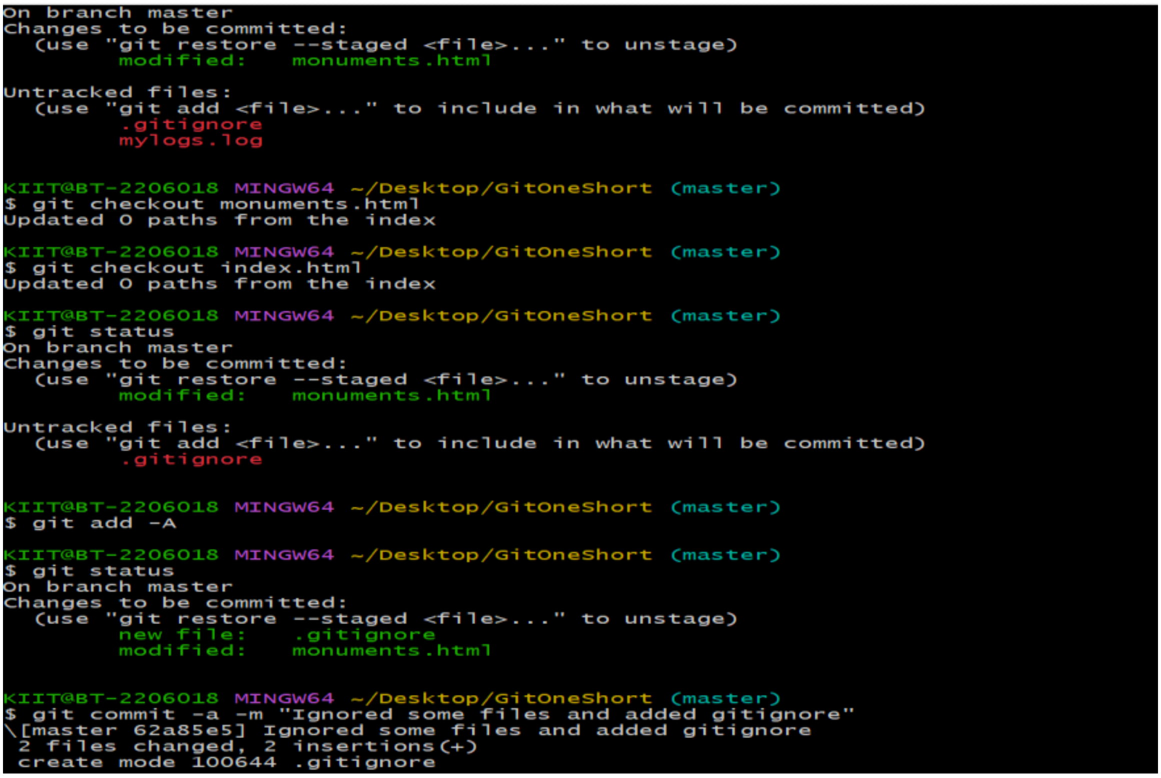
```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git rm waste.html
rm 'waste.html'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ ls
about.html  contact.html  index.html  monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        deleted:    waste.html


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git commit -a -m "Removing waste"
[master 16259de] Removing waste
 1 file changed, 0 insertions(+), 0 deletions(-)
 delete mode 100644 waste.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log
commit 16259dede46c96e5925ee6cfc8cbb8a03f300c68 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 12:10:30 2024 +0530

    Removing waste

commit 16259dede46c96e5925ee6cfc8cbb8a03f300c68 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 12:10:30 2024 +0530

    Removing waste
...skipping...
commit 16259dede46c96e5925ee6cfc8cbb8a03f300c68 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 12:10:30 2024 +0530

    Removing waste

commit 7c73a870802b05031ce6a4f5430a0f5738cb06fe
```

git rm waste.html => Deletes the file waste.html
ls => Gives the lists of all the folders/files present in the repository.
** Deletions have to be committed as well.



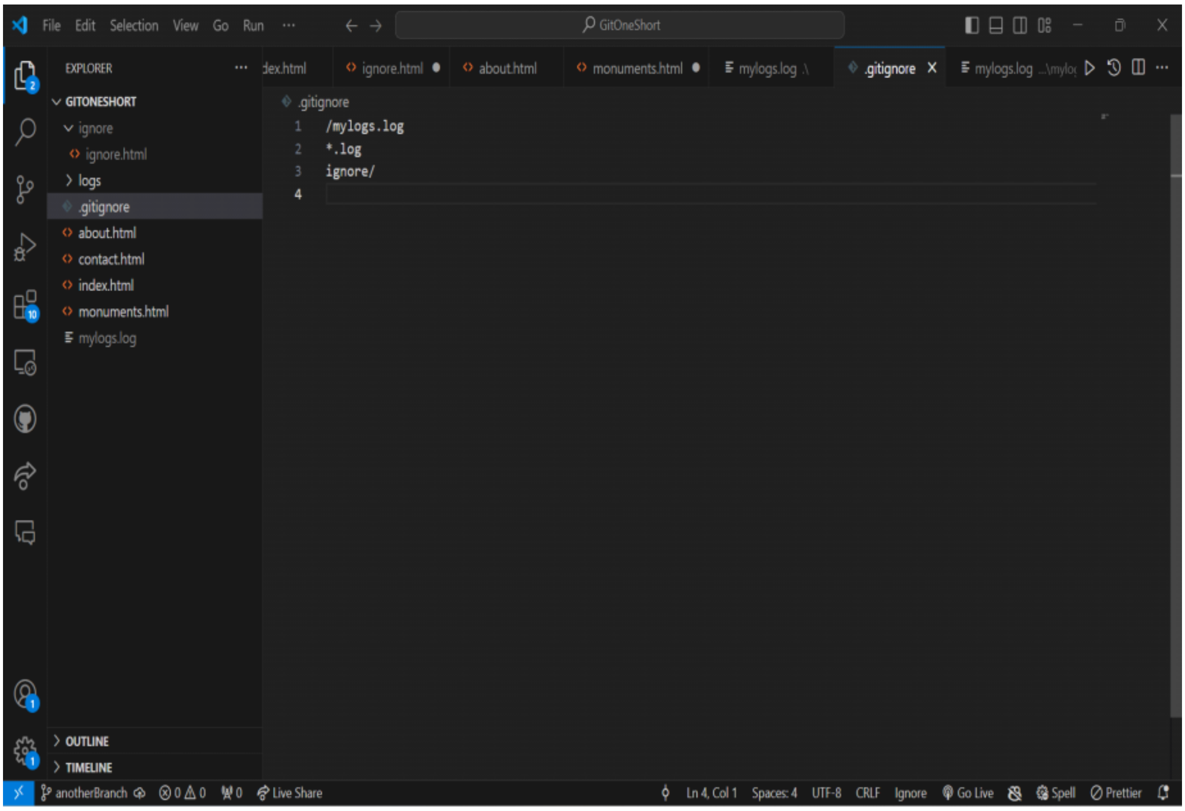
```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log -p -1
commit 16259dede46c96e5925ee6cfc8cbb8a03f300c68 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 12:10:30 2024 +0530

    Removing waste

diff --git a/waste.html b/waste.html
deleted file mode 100644
index e69de29..0000000

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status -s
 M monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status -s
M  monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout monuments.html
Updated 0 paths from the index

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ touch .gitignore

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ touch mylogs.log

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout monuments.html
'Updated 0 paths from the index

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add monuments.html

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout monuments.html
Updated 0 paths from the index

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
```

We have modified the file monuments.html.
git status -s => Provides a short and concise summary of current git repository.
touch <filename> => Creates new files (.gitignore, mylogs.log).



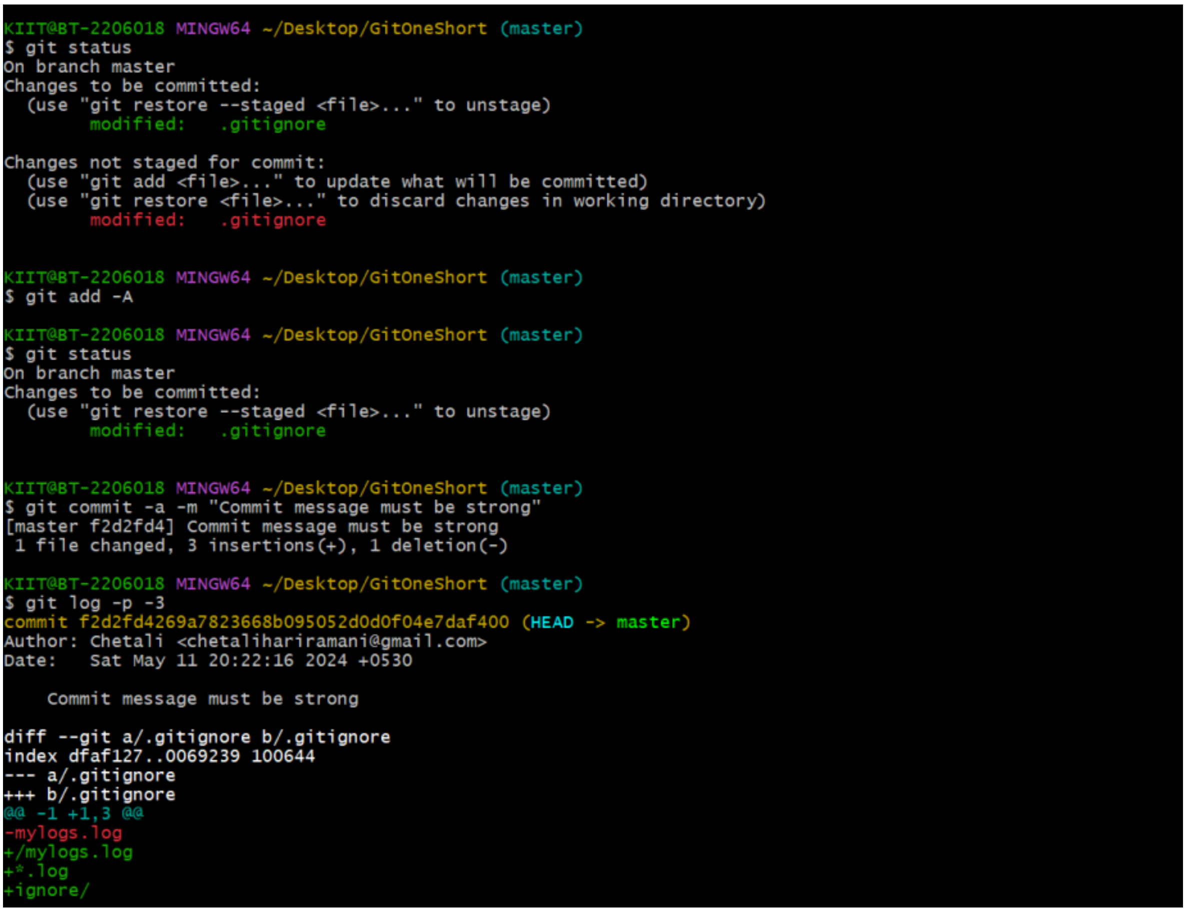
```
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   monuments.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore
        mylogs.log

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout monuments.html
Updated 0 paths from the index

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout index.html
Updated 0 paths from the index

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   monuments.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitignore


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add -A

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   .gitignore
        modified:   monuments.html


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git commit -a -m "Ignored some files and added gitignore"
\[master 62a85e5] Ignored some files and added gitignore
 2 files changed, 2 insertions(+)
 create mode 100644 .gitignore
```

.gitignore => Any files included in the .gitignore file of a repository would be ignored by the Git bash terminal. Thus, any changes made to these files would be overlooked as well.



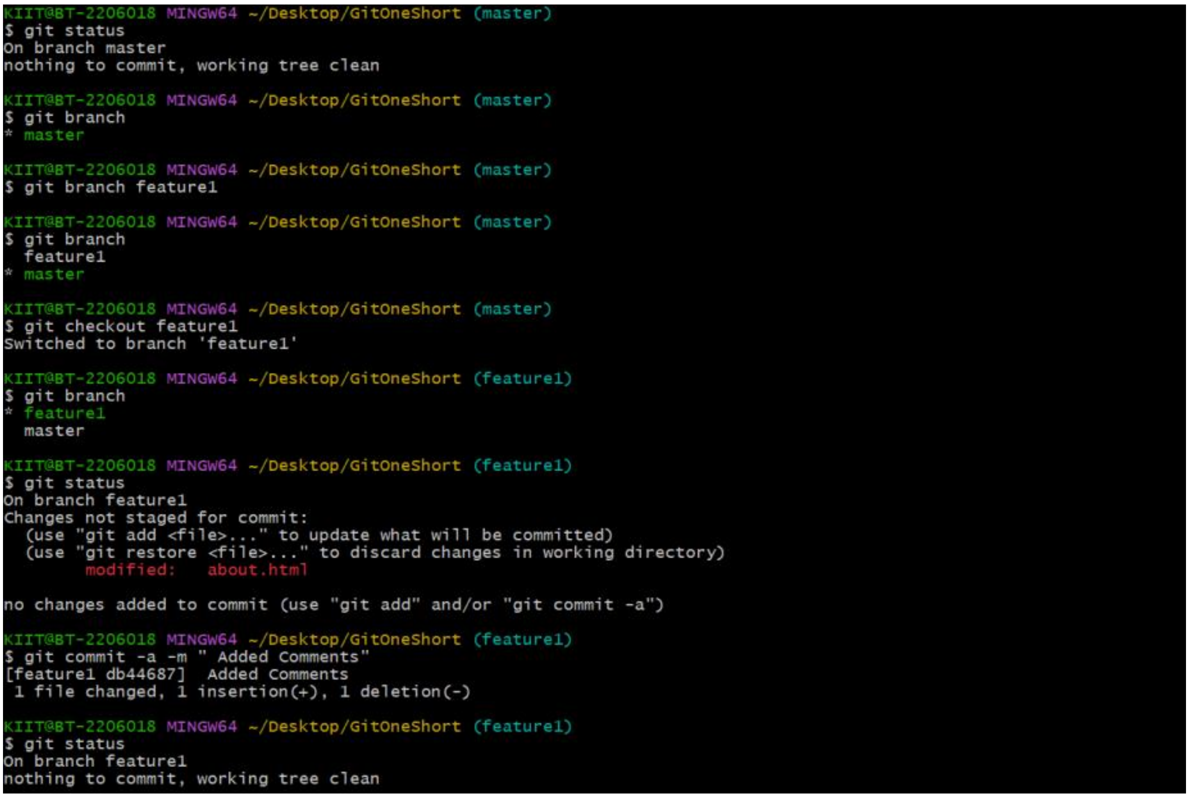
```
/mylogs.log
*.log
ignore/
```

/mylogs.log => The file mylogs.log would be ignored.
*.log => Any file with .log extension would be ignored.
ignore/ => The folder ignore would be overlooked by the terminal.



```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   .gitignore

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   .gitignore


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git add -A

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   .gitignore


KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git commit -a -m "Commit message must be strong"
[master f2d2fd4] Commit message must be strong
 1 file changed, 3 insertions(+), 1 deletion(-)

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log -p -3
commit f2d2fd4269a7823668b095052d0d0f04e7daf400 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 20:22:16 2024 +0530

    Commit message must be strong

diff --git a/.gitignore b/.gitignore
index dfaf127..0069239 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1 +1,3 @@
-mylogs.log
+/mylogs.log
+*.log
+ignore/
```

.gitignore has been modified, added and committed.



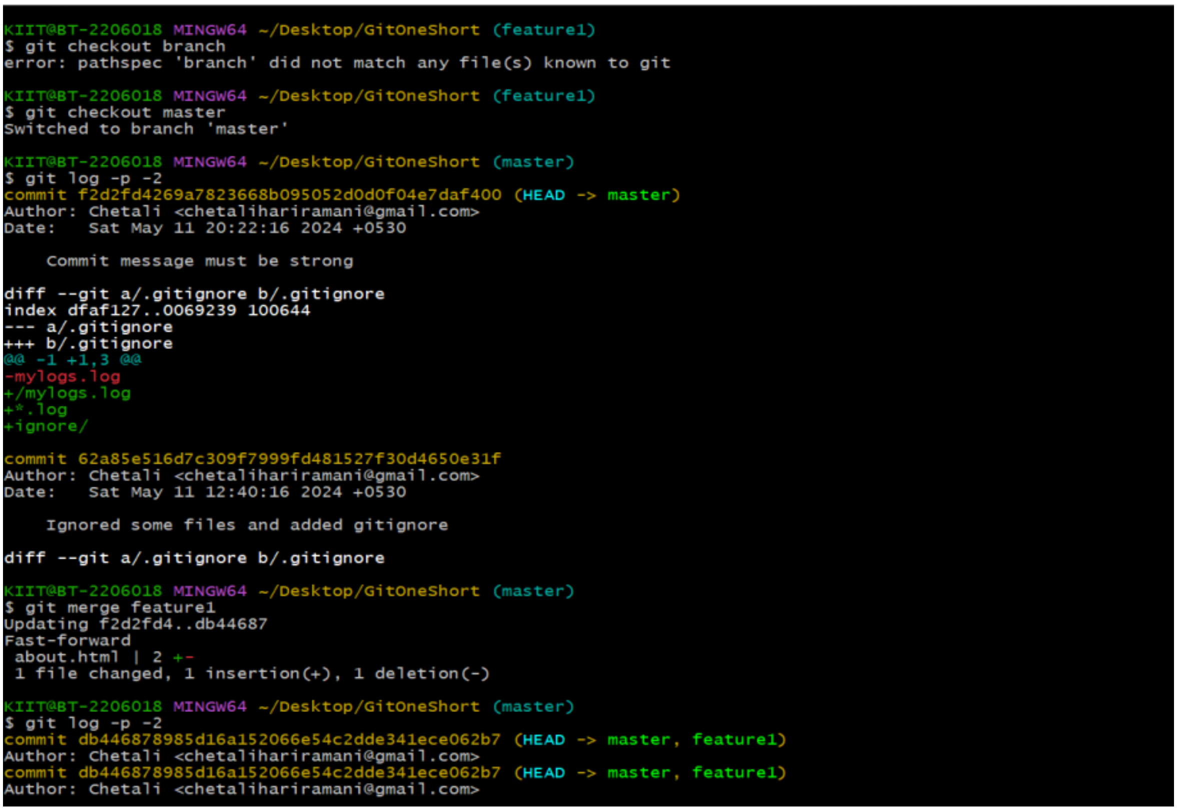
```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git branch
* master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git branch feature1

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git branch
  feature1
* master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout feature1
Switched to branch 'feature1'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git branch
* feature1
  master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git status
On branch feature1
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   about.html

no changes added to commit (use "git add" and/or "git commit -a")

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git commit -a -m " Added Comments"
[feature1 db44687]  Added Comments
 1 file changed, 1 insertion(+), 1 deletion(-)

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git status
On branch feature1
nothing to commit, working tree clean
```

git branch => To check the number of branches present and figure out which branch are we currently present in.

git branch <branch name> => To create a new branch.

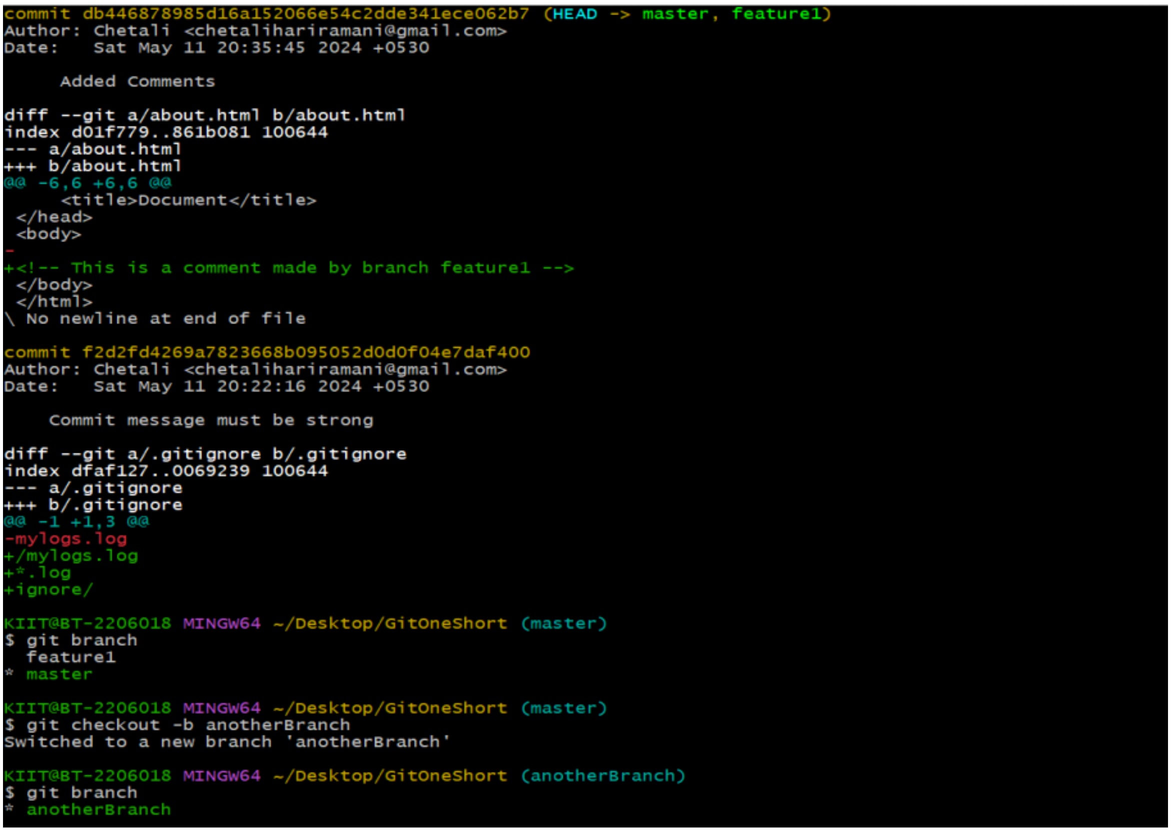
git checkout <branch name> => To switch to another branch.

Commit the changes made in new branch.



```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git checkout branch
error: pathspec 'branch' did not match any file(s) known to git

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git checkout master
Switched to branch 'master'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log -p -2
commit f2d2fd4269a7823668b095052d0d0f04e7daf400 (HEAD -> master)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 20:22:16 2024 +0530

    Commit message must be strong

diff --git a/.gitignore b/.gitignore
index dfaf127..0069239 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1 +1,3 @@
-mylogs.log
+/mylogs.log
+*.log
+ignore/

commit 62a85e516d7c309f7999fd481527f30d4650e31f
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 12:40:16 2024 +0530

    Ignored some files and added gitignore

diff --git a/.gitignore b/.gitignore

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git merge feature1
Updating f2d2fd4..db44687
Fast-forward
 about.html | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git log -p -2
commit db446878985d16a152066e54c2dde341ece062b7 (HEAD -> master, feature1)
Author: Chetali <chetalihariramani@gmail.com>
commit db446878985d16a152066e54c2dde341ece062b7 (HEAD -> master, feature1)
Author: Chetali <chetalihariramani@gmail.com>
```

git merge <branch name> => To merge the changes made in new branch in the main branch as well.



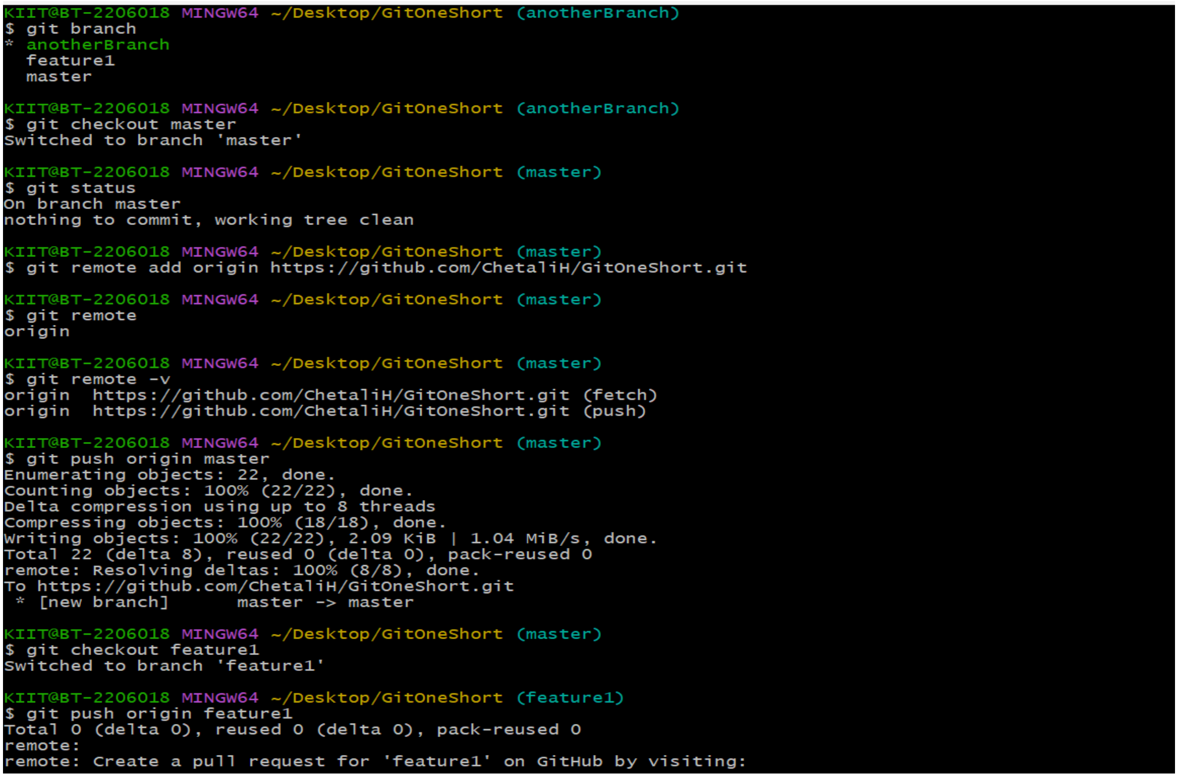
```
commit db446878985d16a152066e54c2dde341ece062b7 (HEAD -> master, feature1)
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 20:35:45 2024 +0530

     Added Comments

diff --git a/about.html b/about.html
index d01f779..861b081 100644
--- a/about.html
+++ b/about.html
@@ -6,6 +6,6 @@
     <title>Document</title>
 </head>
 <body>
-
+<!-- This is a comment made by branch feature1 -->
 </body>
 </html>
\ No newline at end of file

commit f2d2fd4269a7823668b095052d0d0f04e7daf400
Author: Chetali <chetalihariramani@gmail.com>
Date:   Sat May 11 20:22:16 2024 +0530

    Commit message must be strong

diff --git a/.gitignore b/.gitignore
index dfaf127..0069239 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1 +1,3 @@
-mylogs.log
+/mylogs.log
+*.log
+ignore/

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git branch
  feature1
* master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout -b anotherBranch
Switched to a new branch 'anotherBranch'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (anotherBranch)
$ git branch
* anotherBranch
```

git checkout -b <new branch name> => Creating as well as switching into a new branch simultaneously.

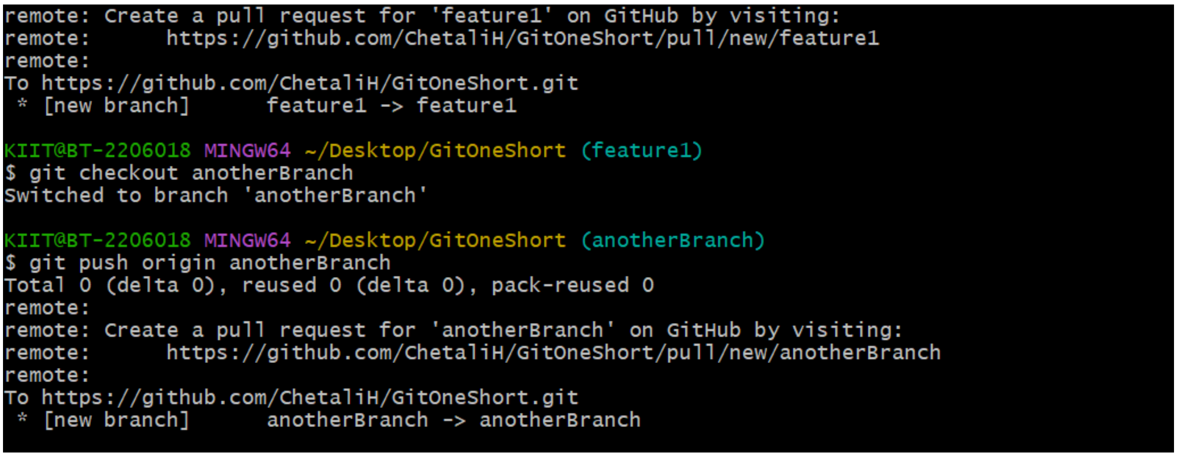
GitHub =>

Remote repository => Create a remote repository on your GitHub account.

GitHub is a hosting service for Git Repositories.



```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (anotherBranch)
$ git branch
* anotherBranch
  feature1
  master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (anotherBranch)
$ git checkout master
Switched to branch 'master'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git remote add origin https://github.com/ChetaliH/GitOneShort.git

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git remote
origin

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git remote -v
origin  https://github.com/ChetaliH/GitOneShort.git (fetch)
origin  https://github.com/ChetaliH/GitOneShort.git (push)

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git push origin master
Enumerating objects: 22, done.
Counting objects: 100% (22/22), done.
Delta compression using up to 8 threads
Compressing objects: 100% (18/18), done.
Writing objects: 100% (22/22), 2.09 KiB | 1.04 MiB/s, done.
Total 22 (delta 8), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (8/8), done.
To https://github.com/ChetaliH/GitOneShort.git
 * [new branch]      master -> master

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git checkout feature1
Switched to branch 'feature1'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git push origin feature1
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'feature1' on GitHub by visiting:
```

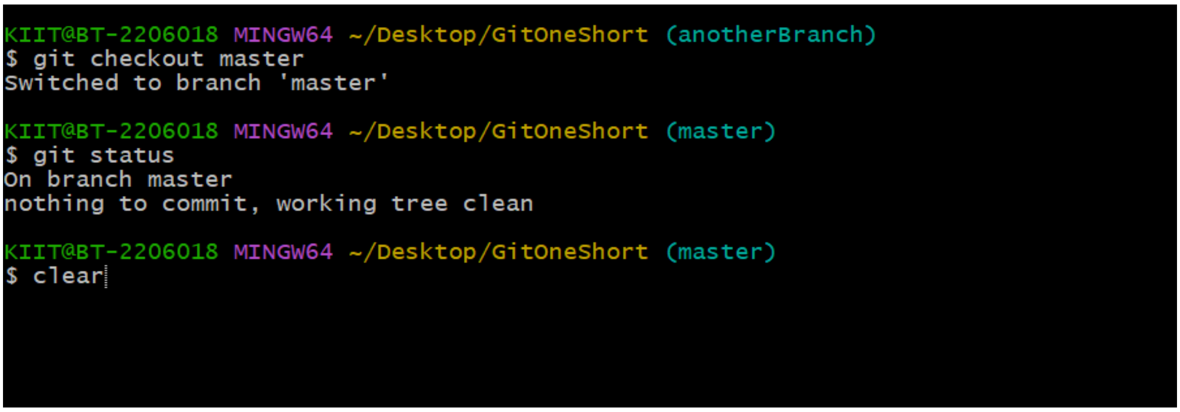


```
remote: Create a pull request for 'feature1' on GitHub by visiting:
remote:      https://github.com/ChetaliH/GitOneShort/pull/new/feature1
remote:
To https://github.com/ChetaliH/GitOneShort.git
 * [new branch]      feature1 -> feature1

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (feature1)
$ git checkout anotherBranch
Switched to branch 'anotherBranch'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (anotherBranch)
$ git push origin anotherBranch
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'anotherBranch' on GitHub by visiting:
remote:      https://github.com/ChetaliH/GitOneShort/pull/new/anotherBranch
remote:
To https://github.com/ChetaliH/GitOneShort.git
 * [new branch]      anotherBranch -> anotherBranch
```

git remote add origin < link > => It will save the link of remote repository in the variable origin.

git push origin master => It pushes the master branch in the public repository.

git push origin < branch name > => It pushes the mentioned branch in the public repository.



```
KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (anotherBranch)
$ git checkout master
Switched to branch 'master'

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ git status
On branch master
nothing to commit, working tree clean

KIIT@BT-2206018 MINGW64 ~/Desktop/GitOneShort (master)
$ clear
```

clear => Clears the Git Bash terminal.