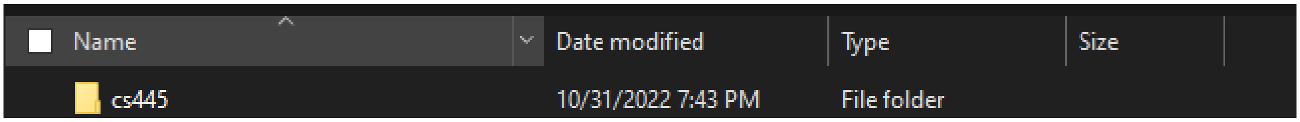
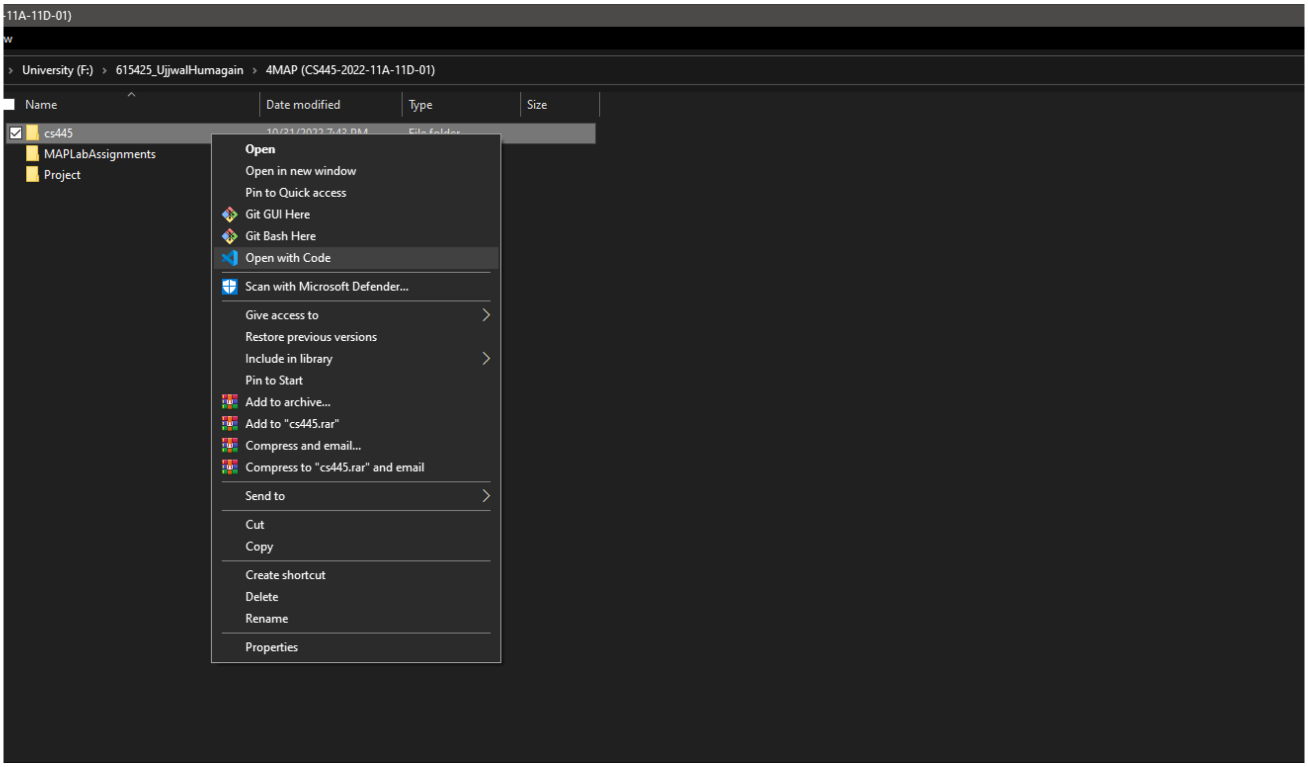
Create a new folder:

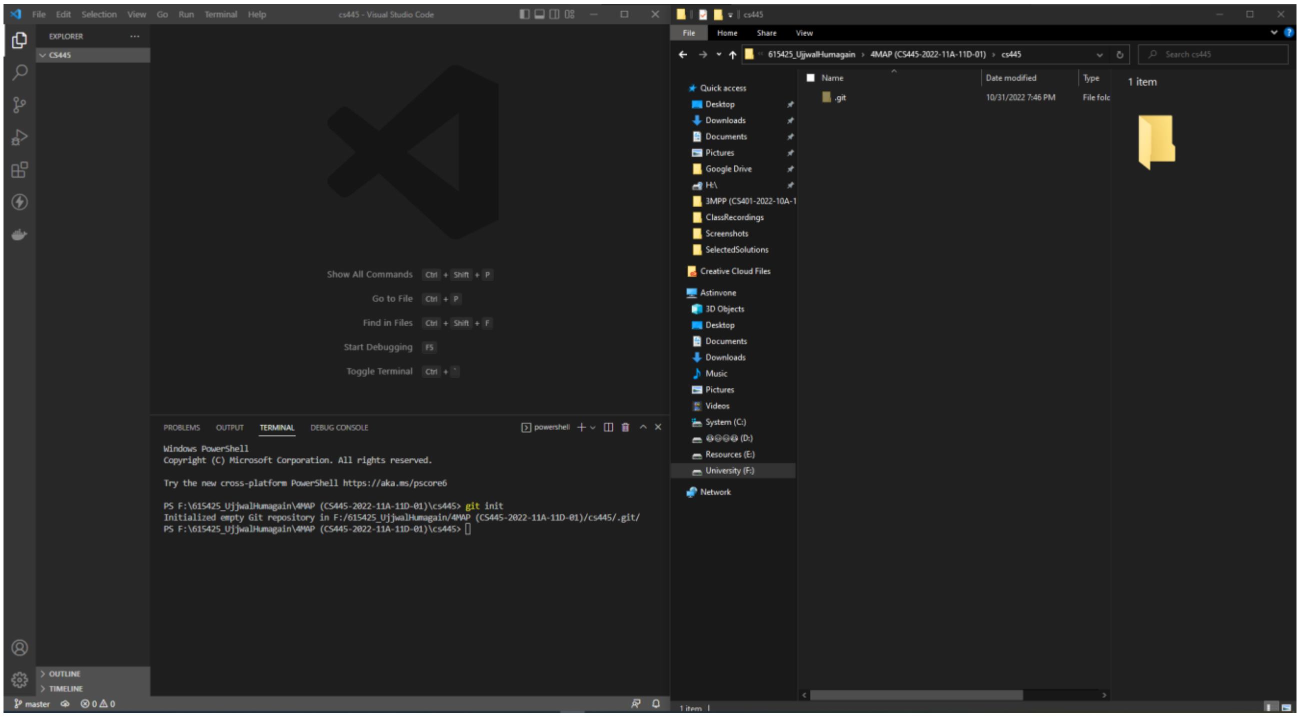


Name	Date modified	Type	Size
cs445	10/31/2022 7:43 PM	File folder	

Open the folder in VS Code:



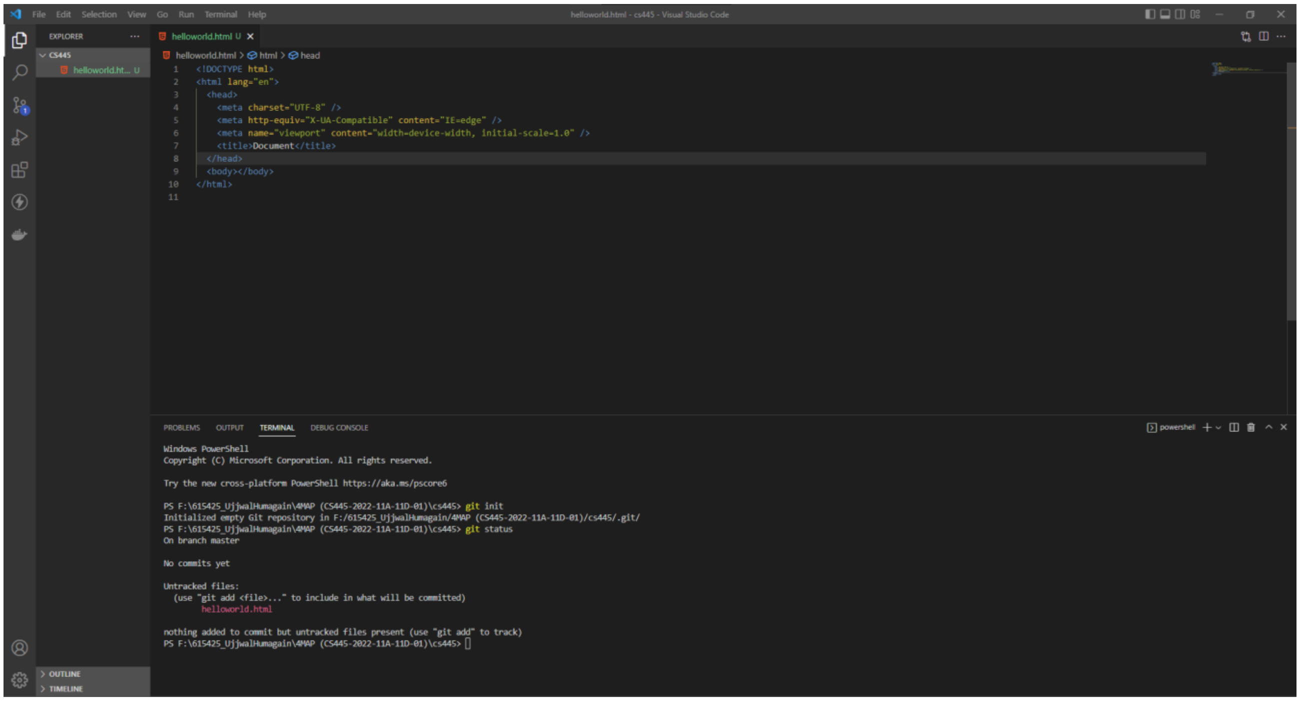
Initialize the folder as a git repository using ‘git init’ command



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git init
Initialized empty Git repository in F:/615425_UjjwalHumagain/4MAP (CS445-2022-11A-11D-01)/cs445/.git/
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

A new folder '.git' is created inside the root folder.

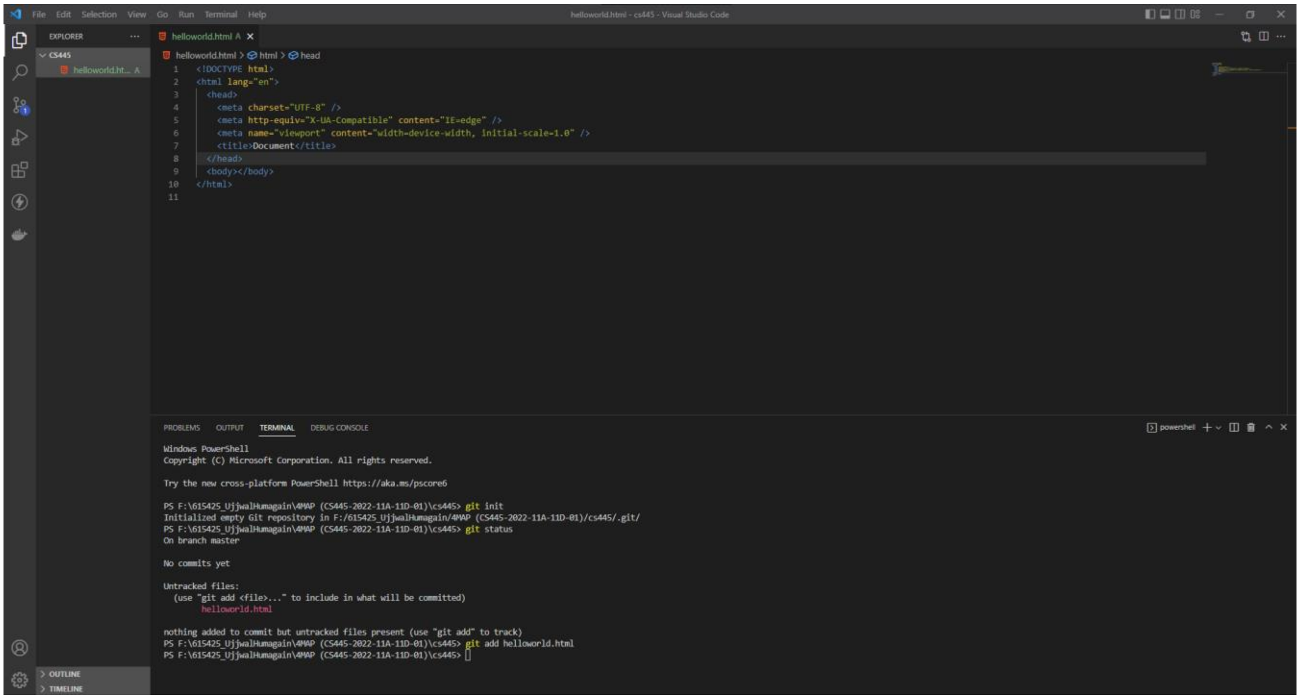
Now let's add a new html file inside the working directory and run the 'git status' command so as to initiate the tracking of new files/folders.



```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Document</title>
  </head>
  <body></body>
</html>
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git init
Initialized empty Git repository in F:/615425_UjjwalHumagain/4MAP (CS445-2022-11A-11D-01)/cs445/.git/
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

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

nothing added to commit but untracked files present (use "git add" to track)
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

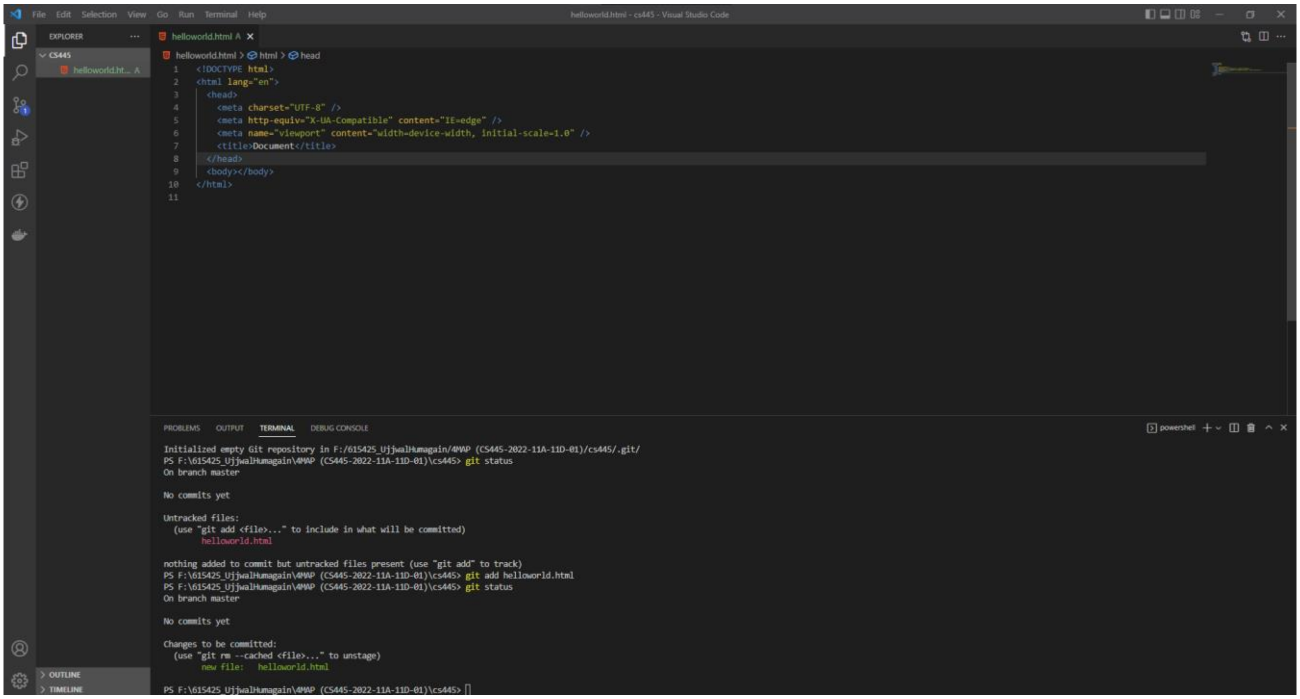
Now in order to track the newly added file by adding it to the staging area we have to use 'git add *filename OR *'* (Here * is as wildcard) command as;



```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Document</title>
  </head>
  <body></body>
</html>
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git init
Initialized empty Git repository in F:/615425_UjjwalHumagain/4MAP (CS445-2022-11A-11D-01)/cs445/.git/
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

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

nothing added to commit but untracked files present (use "git add" to track)
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git add helloworld.html
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

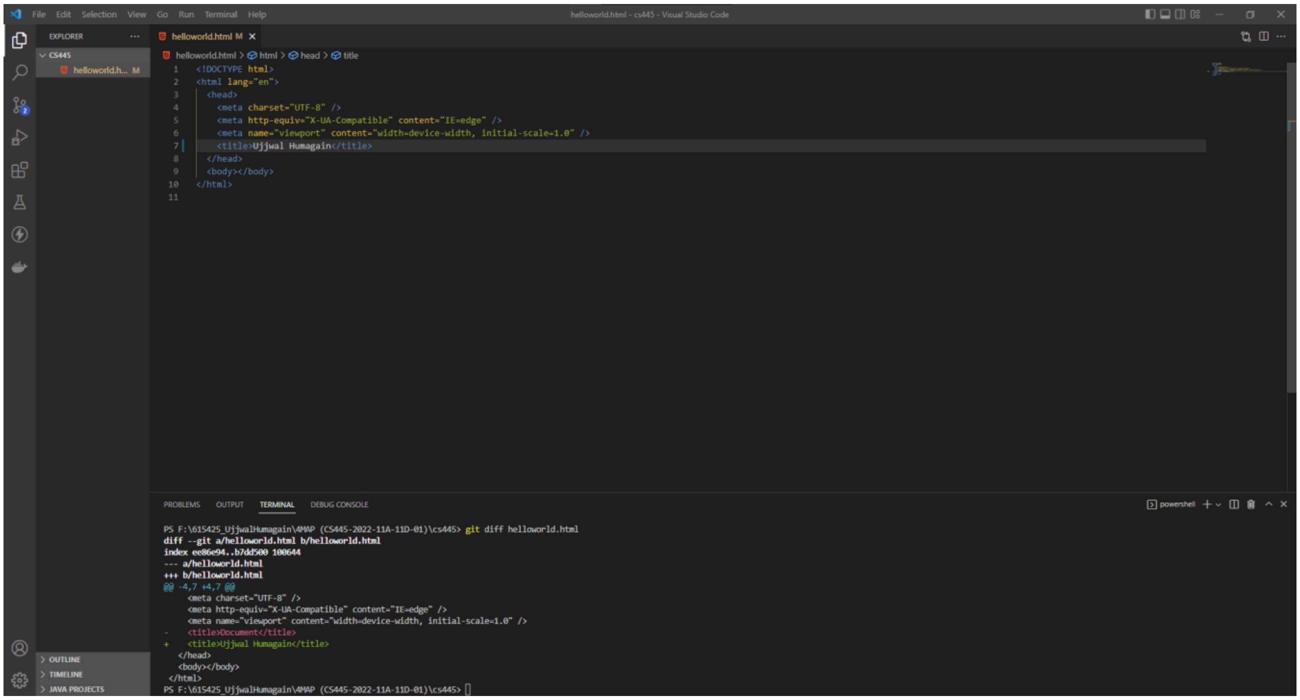
After this let us again see whether the file has been tracked or not using ‘git status’ command;


File Edit Selection View Go Run Terminal Help
helloworld.html - cs445 - Visual Studio Code
EXPLORER
CS445
helloworld.ht... A
helloworld.html A
helloworld.html > html > head
OUTLINE
TIMELINE
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Document</title>
  </head>
  <body></body>
</html>
```

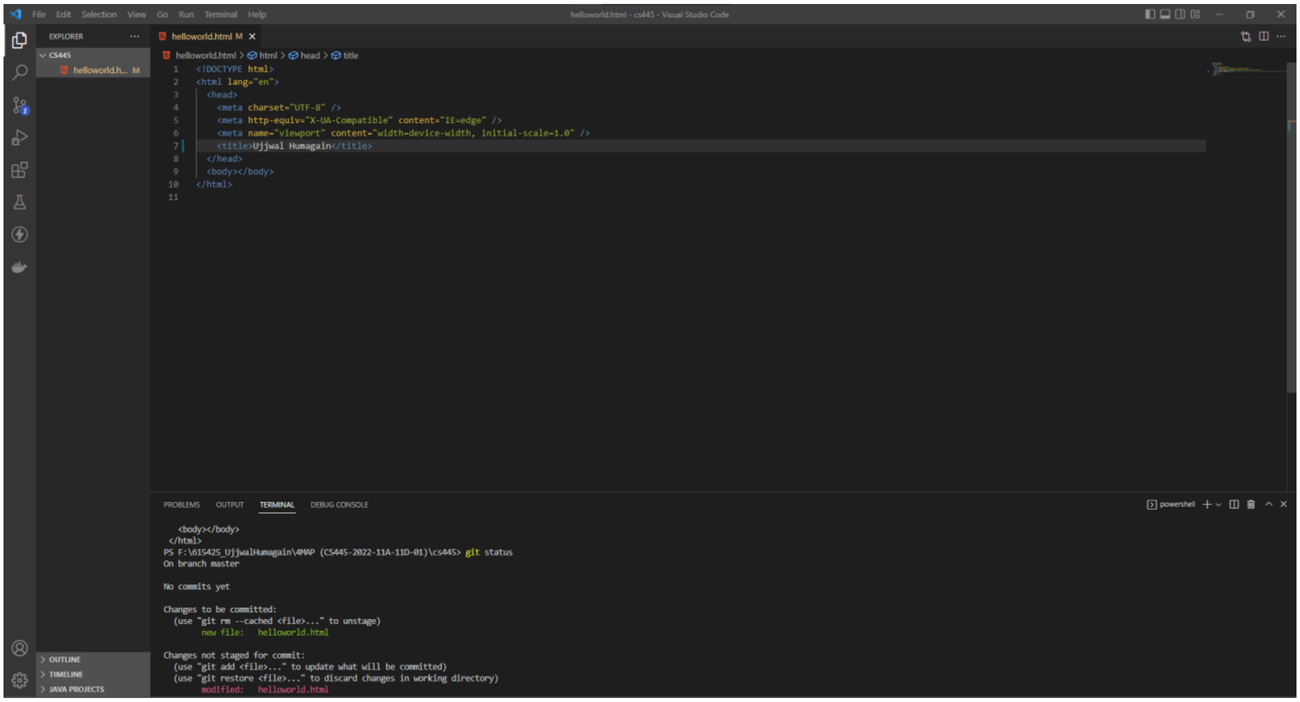
```
Initialized empty Git repository in F:/615425_UjjwalHumagain/4MAP (CS445-2022-11A-11D-01)/cs445/.git/
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

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

nothing added to commit but untracked files present (use "git add" to track)
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git add helloworld.html
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   helloworld.html

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

Since, we have the file in staging area, so any changes made to it is tracked and we have to add it again. In order to see the changes we have made to the file there is a command ‘git diff *filename*’ which shows what changes are made to the specific file.


File Edit Selection View Go Run Terminal Help
helloworld.html - cs445 - Visual Studio Code
EXPLORER
CS445
helloworld.h... M
helloworld.html M
helloworld.html > html > head > title
OUTLINE
TIMELINE
JAVA PROJECTS
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Ujjwal Humagain</title>
  </head>
  <body></body>
</html>
```

```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git diff helloworld.html
diff --git a/helloworld.html b/helloworld.html
index ee86e94..b7dd500 100644
--- a/helloworld.html
+++ b/helloworld.html
@@ -4,7 +4,7 @@
     <meta charset="UTF-8" />
     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
-    <title>Document</title>
+    <title>Ujjwal Humagain</title>
   </head>
   <body></body>
 </html>
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```


File Edit Selection View Go Run Terminal Help
helloworld.html - cs445 - Visual Studio Code
EXPLORER
CS445
helloworld.h... M
helloworld.html M
helloworld.html > html > head > title
PROBLEMS
OUTPUT
TERMINAL
DEBUG CONSOLE
powershell
OUTLINE
TIMELINE
JAVA PROJECTS

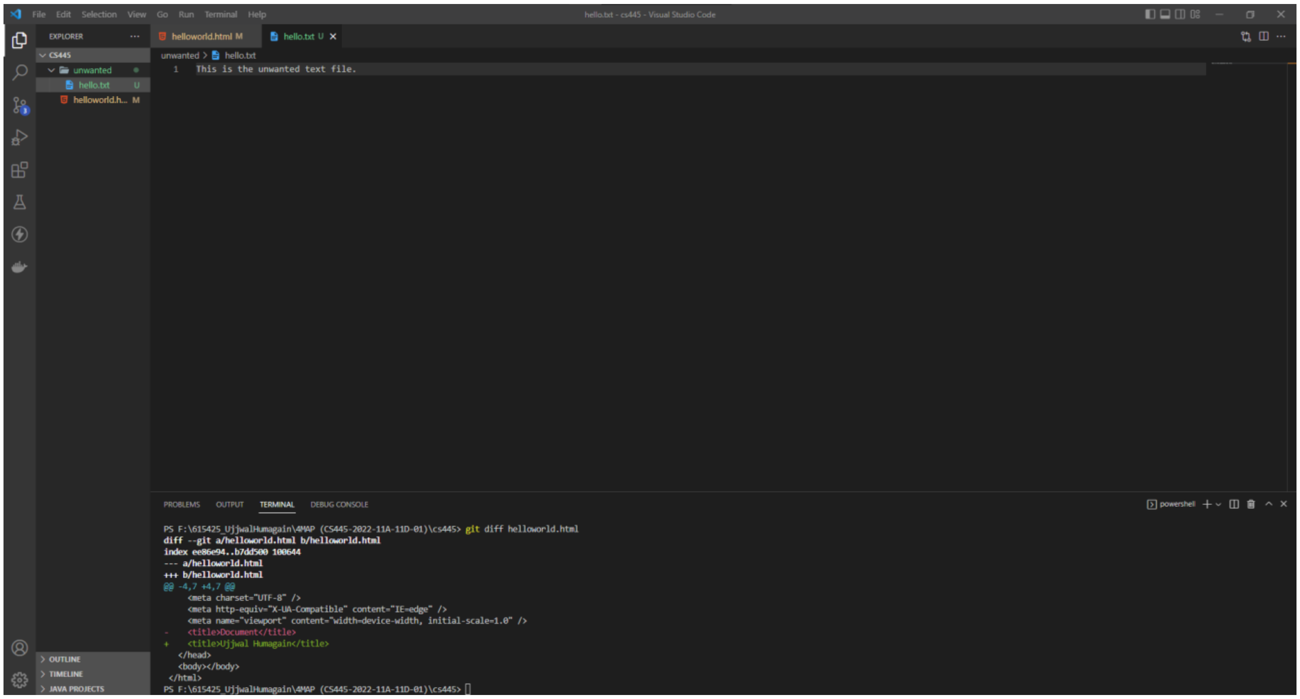
```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Ujjwal Humagain</title>
  </head>
  <body></body>
</html>
```

```
   <body></body>
 </html>
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   helloworld.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:   helloworld.html
```

We have to add the file again to stage changes made to it.

In most of the software projects there are different files and folders which are machine generated and build artifacts. So, in order to track the version of those projects by considering the development code only we have to ignore the generated files and folders. In order to do so, we have to create a new file '.gitignore' inside the working directory and add path to the respective files and folders which are to be ignored and discarded from being tracked during the versioning of the project.

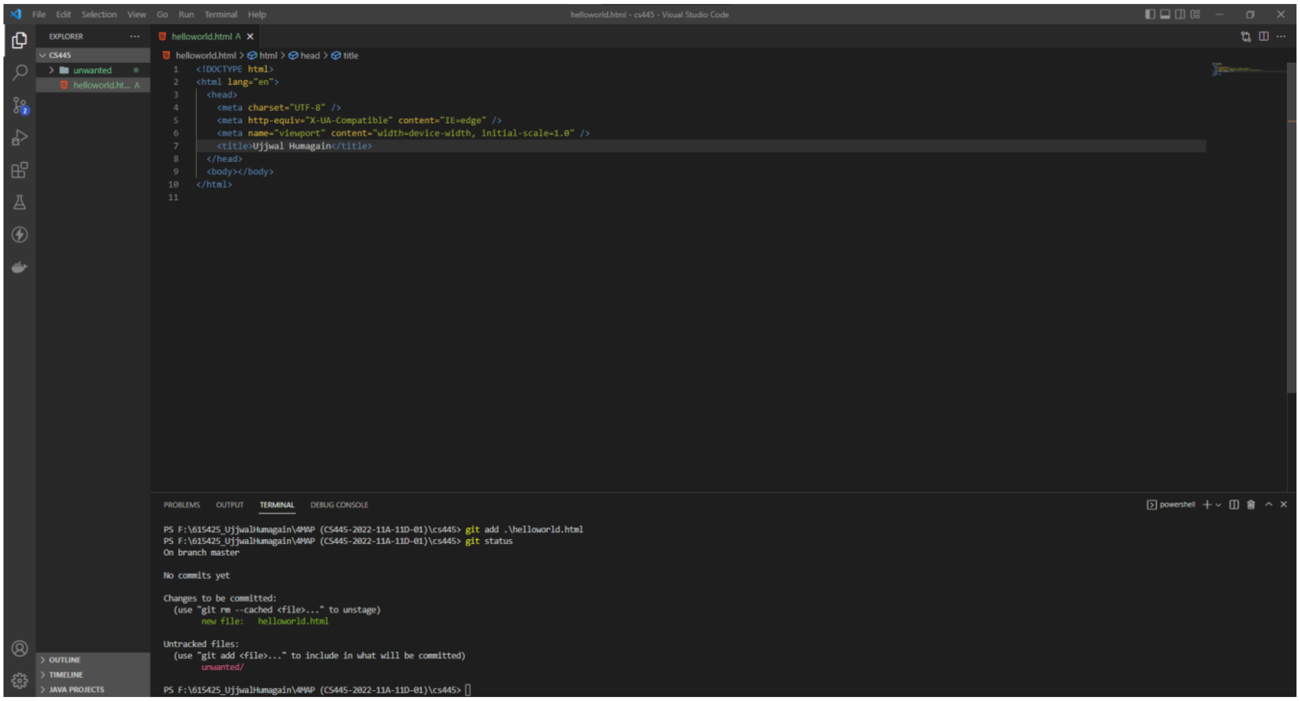
To demonstrate the working of .gitignore at first let us create a new folder and add a file inside it as;



```
This is the unwanted text file.
```

```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git diff helloworld.html
diff --git a/helloworld.html b/helloworld.html
index ee86e94..b7dd500 100644
--- a/helloworld.html
+++ b/helloworld.html
@@ -4,7 +4,7 @@
     <meta charset="UTF-8" />
     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
-    <title>Document</title>
+    <title>Ujjwal Humagain</title>
   </head>
   <body></body>
 </html>
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

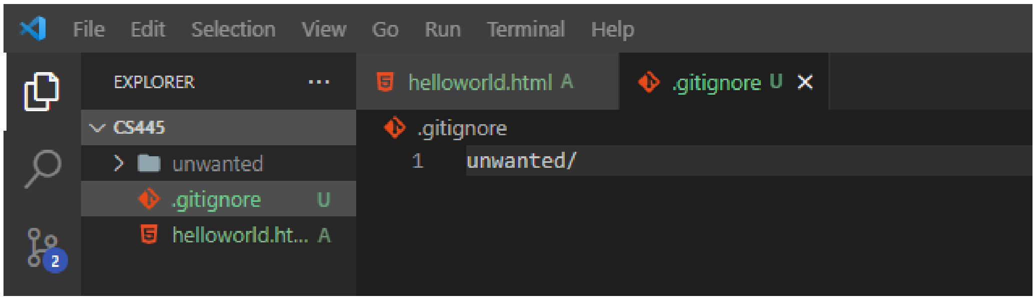
Since we created a new folder and file which are untracked at first as;



```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Ujjwal Humagain</title>
  </head>
  <body></body>
</html>
```

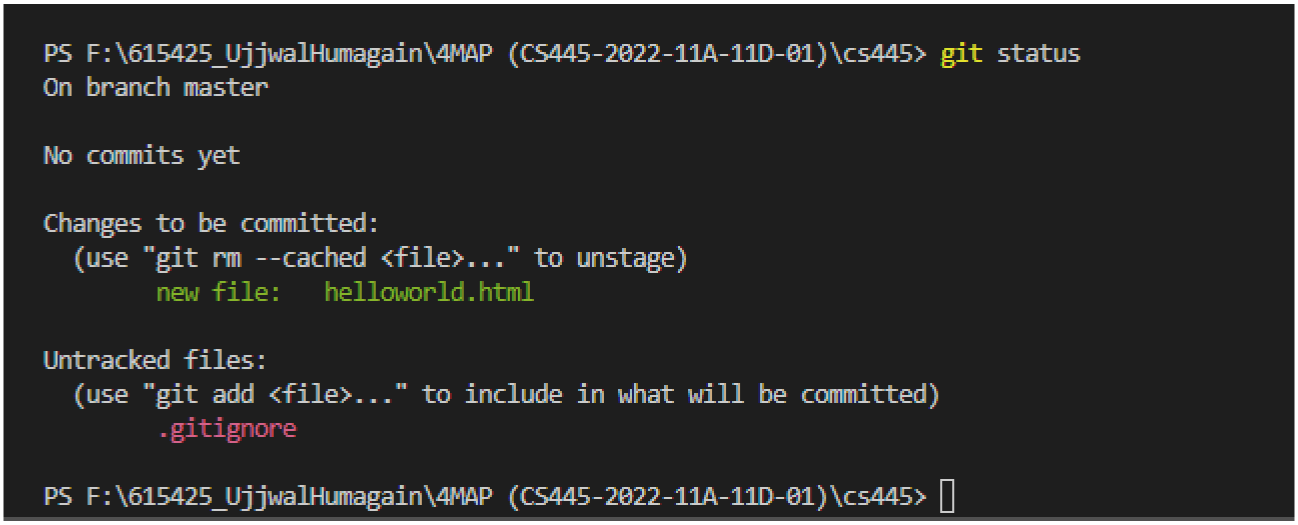
```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git add .\helloworld.html
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   helloworld.html

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

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

But we want to ignore the folder and files inside it so for this at first we have to add .gitignore in the working directory and add the path to the folder in it as;



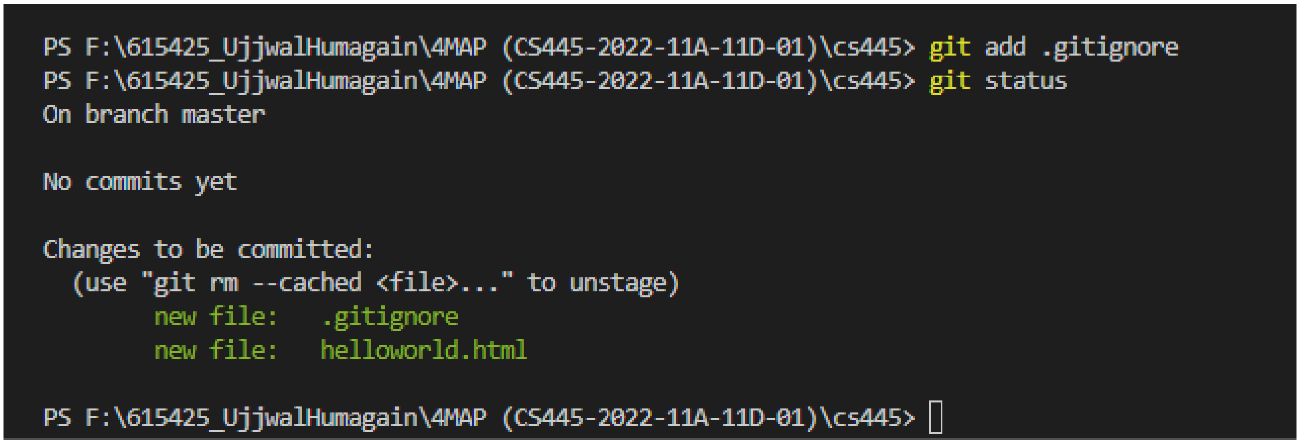
```
unwanted/
```

Again, let us do the ‘git status’. This time the .gitignore file is untracked instead of the folder that we created previously.



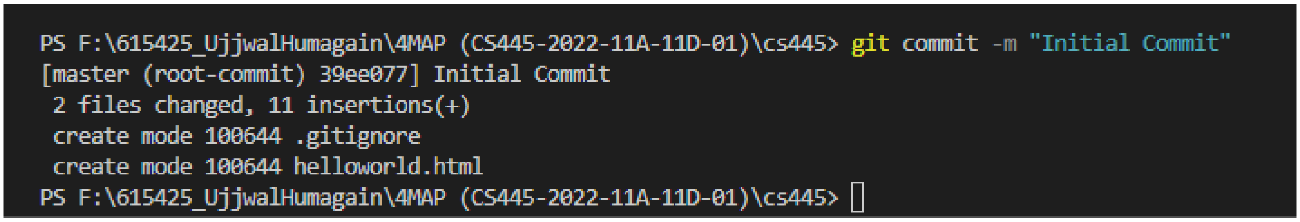
```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   helloworld.html

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

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

Now, let us add the .gitignore file and move everything in the staging area as;



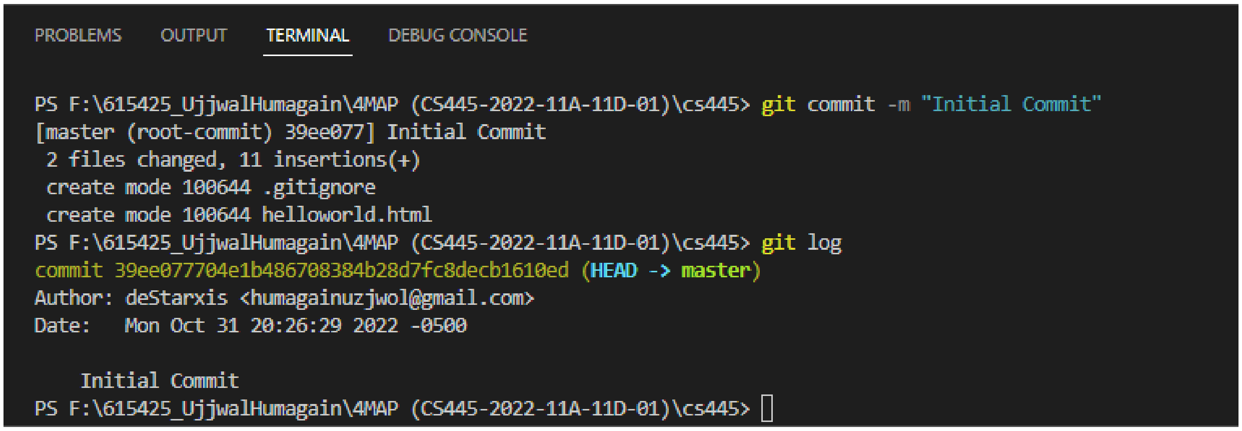
```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git add .gitignore
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   .gitignore
        new file:   helloworld.html

PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

Since our main intention is to create a local repository and version the working directory so we have to create checkpoints for tracking every change made inside it. For this we have to use “git commit -m ‘commit message’ ” command. This saves the everything presented in the staging area to the repository. The commit message attached in this command explains what changes has been done in a single unit of codebase.



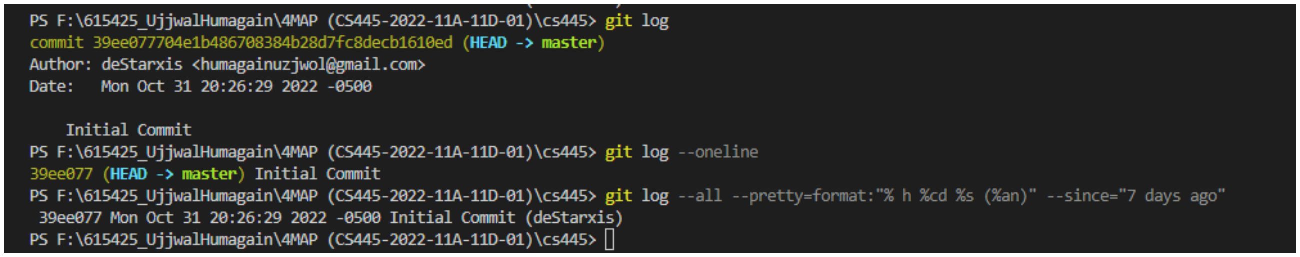
```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git commit -m "Initial Commit"
[master (root-commit) 39ee077] Initial Commit
 2 files changed, 11 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 helloworld.html
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

In every project there are more than one commits so to see all the commits there is a command as ‘git log’ that displays every commit made in that repository



```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git commit -m "Initial Commit"
[master (root-commit) 39ee077] Initial Commit
 2 files changed, 11 insertions(+)
 create mode 100644 .gitignore
 create mode 100644 helloworld.html
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git log
commit 39ee077704e1b486708384b28d7fc8decb1610ed (HEAD -> master)
Author: deStarxis <humagainuzjwol@gmail.com>
Date:   Mon Oct 31 20:26:29 2022 -0500

    Initial Commit
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```

We can also format the git log using other optional command attributes as;



```
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git log
commit 39ee077704e1b486708384b28d7fc8decb1610ed (HEAD -> master)
Author: deStarxis <humagainuzjwol@gmail.com>
Date:   Mon Oct 31 20:26:29 2022 -0500

    Initial Commit
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git log --oneline
39ee077 (HEAD -> master) Initial Commit
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> git log --all --pretty=format:"% h %cd %s (%an)" --since="7 days ago"
 39ee077 Mon Oct 31 20:26:29 2022 -0500 Initial Commit (deStarxis)
PS F:\615425_UjjwalHumagain\4MAP (CS445-2022-11A-11D-01)\cs445> 
```