Task 1.1

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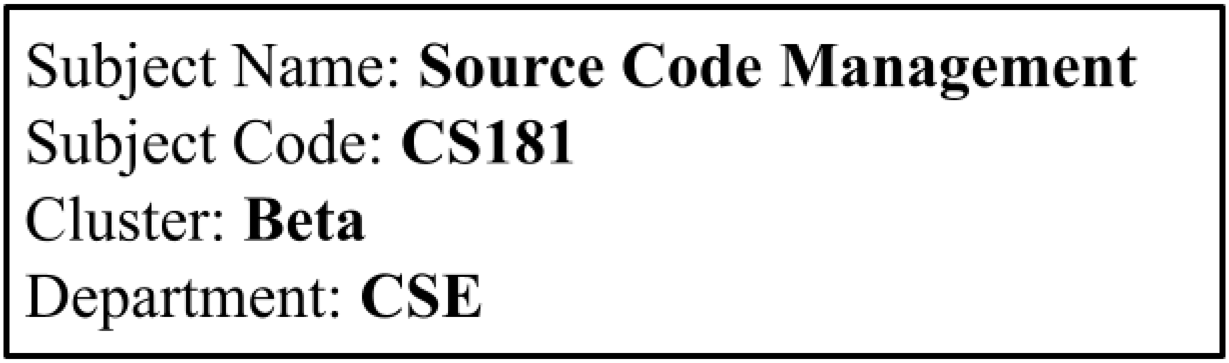


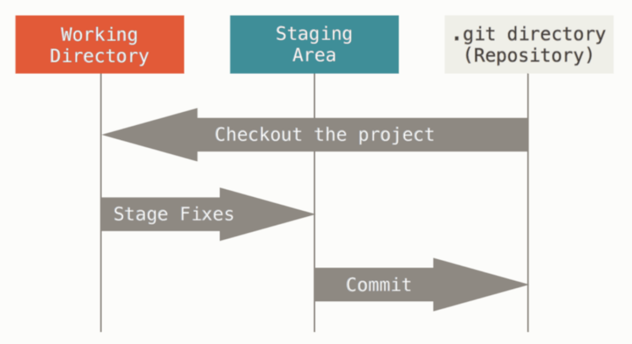
Subject Name: **Source Code Management**
Subject Code: **CS181**
Cluster: **Beta**
Department: **CSE**

Task 1.1 - Experiment No. 01

AIM: Setting up of Git Client

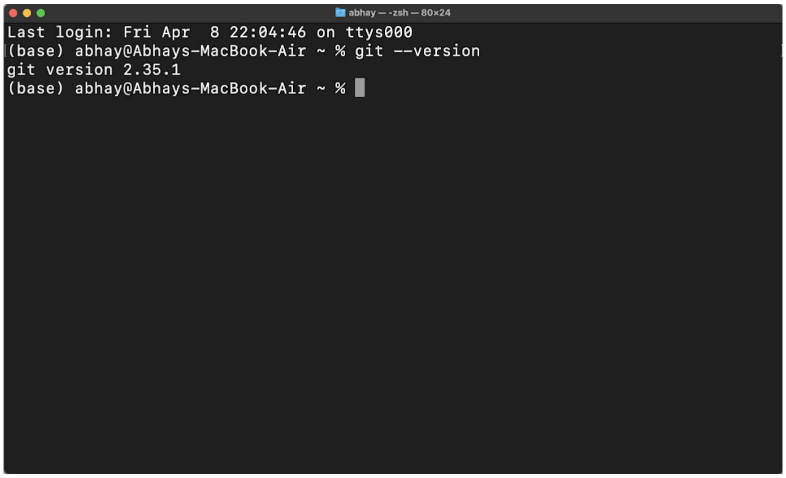
Theory:

- **Git:** Git is an example of Version Control Software. Unlike other VCSs every action on Git has its integrity as it is assigned a **SHA-1** hash. It is basically a 40-Character string that stores all the information about the file at that particular version
- **Advantages of Git:**
    - Git uses snapshots to save data
    - Every operation is local
    - It has integrity
    - Every file has in Git three states:
        - `modified` => File changed but not committed
        - `staged` => marked a modified file in its current version to go into the next commit snapshot
        - `committed` => the data is safely stored on the local database



Procedure:

- On Mac [running OS X or greater] git is pre installed.
- Check by running **git —version** in the terminal.



```
Last login: Fri Apr  8 22:04:46 on ttys000
(base) abhay@Abhays-MacBook-Air ~ % git --version
git version 2.35.1
(base) abhay@Abhays-MacBook-Air ~ % 
```

Task 1.1 - Experiment No. 02

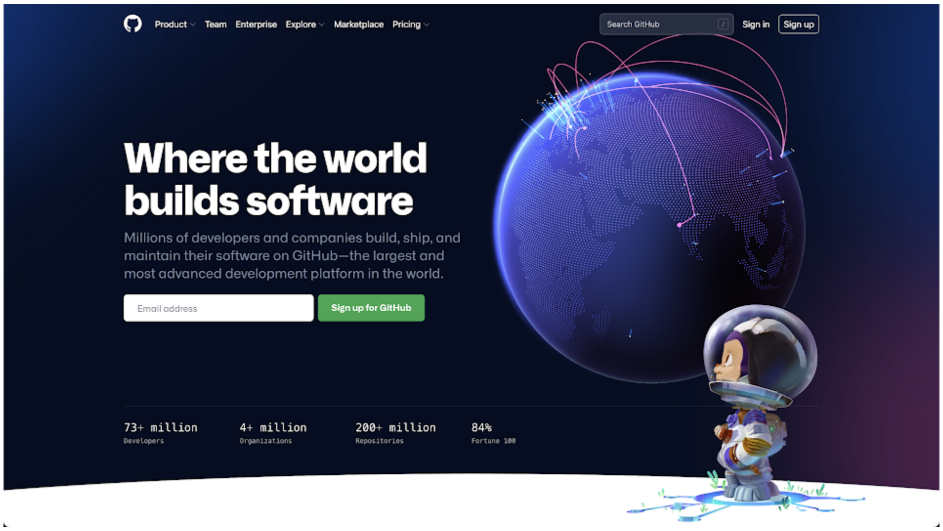
AIM : Setting up GitHub Account

Theory:

- **GitHub:** GitHub is the web implementation of Git. From storing data on local DataBases, now with the help of GitHub, users can push the code to the cloud based servers and perform various actions on it like: hosting, test running, deployment, etc.

Procedure:

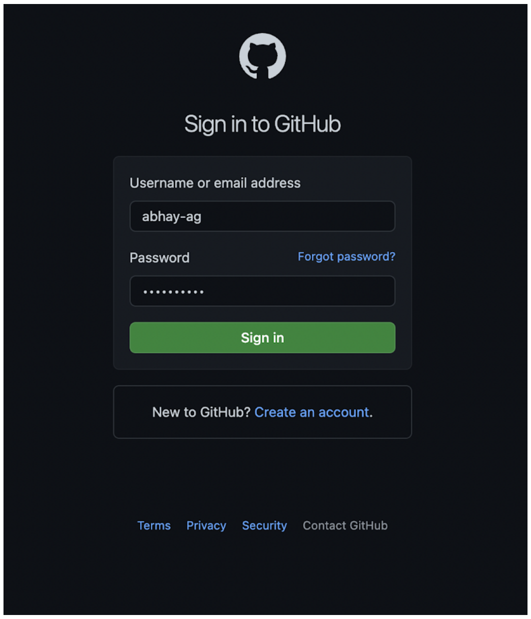
1. Firstly search for GitHub on any search engine.
2. If already have an account then click on **Sign In** else click on **Sign Up**
3. Snapshots of the same are attached below
    a. First Picture -> Landing Page
    b. Second Picture -> Login Page



Where the world builds software

Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.

73+ million Developers · 4+ million Organizations · 200+ million Repositories · 84% Fortune 100

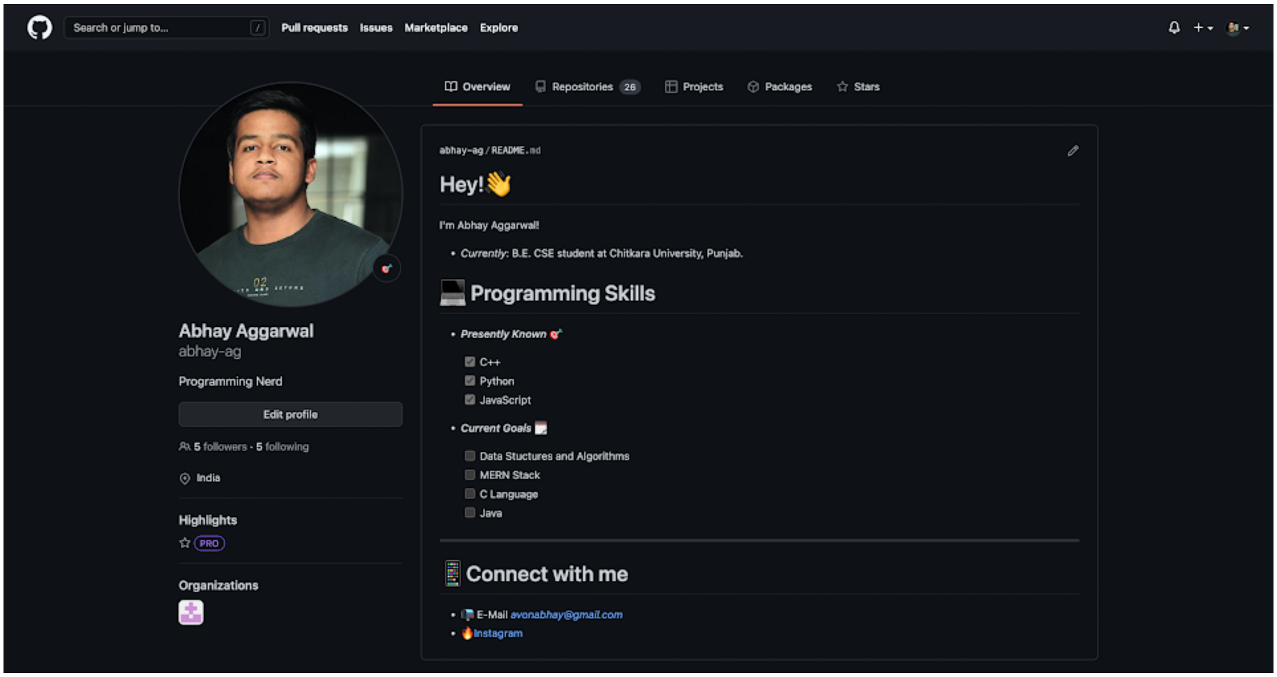


Sign in to GitHub

Username or email address: abhay-ag

Password: ••••••••••

4. Interface of GitHub:



Abhay Aggarwal
abhay-ag

Programming Nerd

5 followers · 5 following

India

abhay-ag / README.md

Hey! 👋

I'm Abhay Aggarwal!

- *Currently*: B.E. CSE student at Chitkara University, Punjab.

💻 Programming Skills

- ***Presently Known*** 🎯
  - ☑ C++
  - ☑ Python
  - ☑ JavaScript
- ***Current Goals*** 📅
  - □ Data Stuctures and Algorithms
  - □ MERN Stack
  - □ C Language
  - □ Java

📱 Connect with me

- 📪 E-Mail *avonabhay@gmail.com*
- 🔥Instagram

5. Commands to link GitHub with Git Bash:

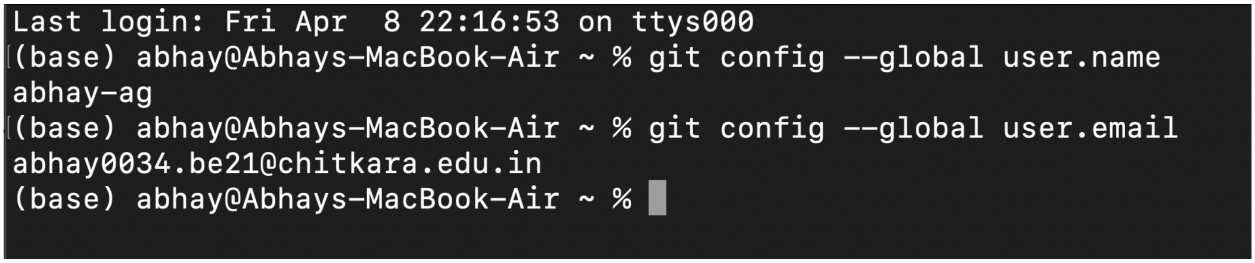
   For Username:

   git config —global user.name “<GitHub user.name>”

   For E-Mail

   git config —global user.email “<GitHub user.email>”

6. For verification: Run the same commands without the string. It will return the username and email of the current user.



```
Last login: Fri Apr  8 22:16:53 on ttys000
(base) abhay@Abhays-MacBook-Air ~ % git config --global user.name
abhay-ag
(base) abhay@Abhays-MacBook-Air ~ % git config --global user.email
abhay0034.be21@chitkara.edu.in
(base) abhay@Abhays-MacBook-Air ~ % 
```

Task 1.1 - Experiment No. 03

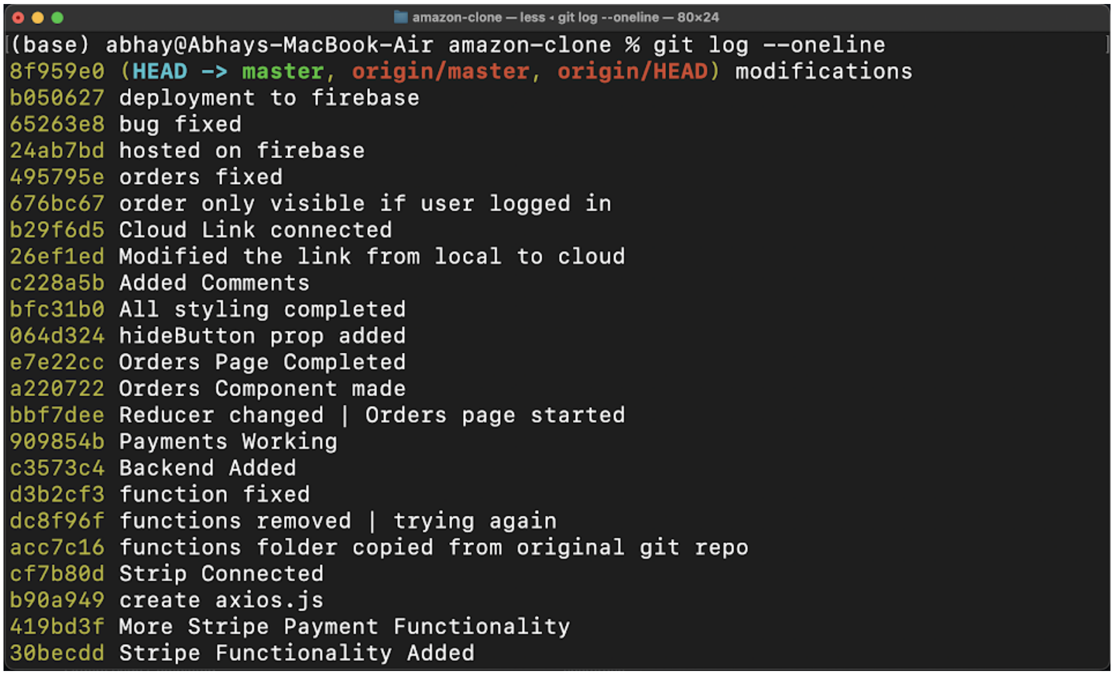
AIM: Generate Logs

Theory:

- **Logs:** Logs are history of the changes made in the file at each version. It stores the SHA-1 Checksum, username, branch name, date and time, etc.

Procedure:

1. Initialize a repo on your local machine.
2. Do some changes and commit at each step.
3. Type **git log** in the terminal



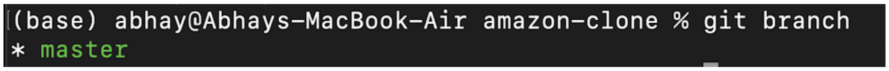
```
[(base) abhay@Abhays-MacBook-Air amazon-clone % git log --oneline
8f959e0 (HEAD -> master, origin/master, origin/HEAD) modifications
b050627 deployment to firebase
65263e8 bug fixed
24ab7bd hosted on firebase
495795e orders fixed
676bc67 order only visible if user logged in
b29f6d5 Cloud Link connected
26ef1ed Modified the link from local to cloud
c228a5b Added Comments
bfc31b0 All styling completed
064d324 hideButton prop added
e7e22cc Orders Page Completed
a220722 Orders Component made
bbf7dee Reducer changed | Orders page started
909854b Payments Working
c3573c4 Backend Added
d3b2cf3 function fixed
dc8f96f functions removed | trying again
acc7c16 functions folder copied from original git repo
cf7b80d Strip Connected
b90a949 create axios.js
419bd3f More Stripe Payment Functionality
30becdd Stripe Functionality Added
```

Task 1.1 - Experiment No. 04

AIM: Create and Visualize branches.

Theory:

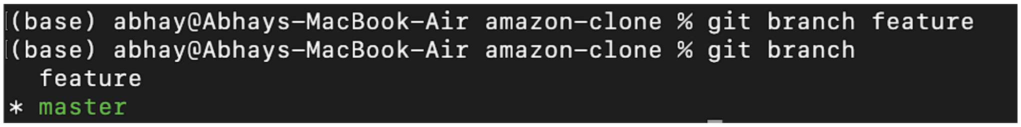
- By default, the branch that is created automatically is called **master** or **main.**



```
(base) abhay@Abhays-MacBook-Air amazon-clone % git branch
* master
```

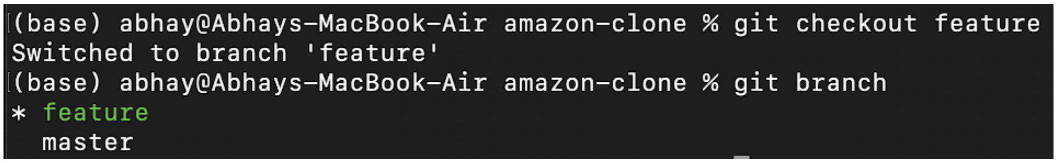
Procedure:

1. For creating a new branch -> git branch <branch name>
2. For checking all the branches -> git branch



```
(base) abhay@Abhays-MacBook-Air amazon-clone % git branch feature
(base) abhay@Abhays-MacBook-Air amazon-clone % git branch
  feature
* master
```

3. To change the present working branch -> git checkout <branch name>



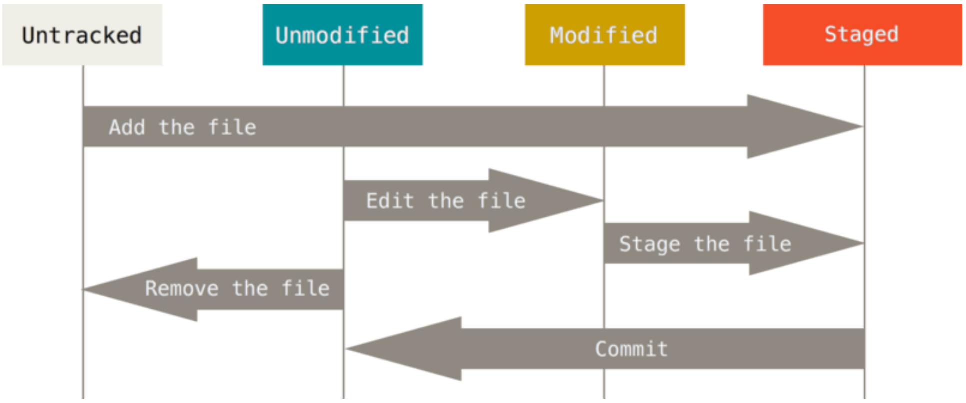
```
(base) abhay@Abhays-MacBook-Air amazon-clone % git checkout feature
Switched to branch 'feature'
(base) abhay@Abhays-MacBook-Air amazon-clone % git branch
* feature
  master
```

Task 1.1 - Experiment No. 05

AIM: Git life-cycle description

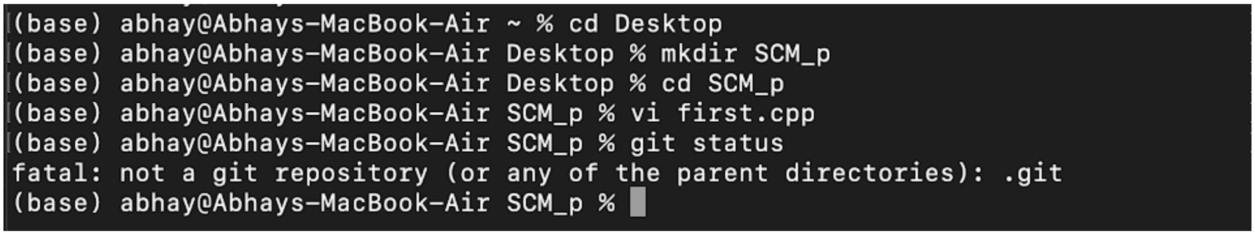
Theory:

- The lifecycle of the status of our files:
    - untracked: newly added files after the last snapshot of the data
    - unmodified: when an untracked file is staged in the latest snapshot it returns to the unmodified state.
    - modified: when an unmodified file is edited it moves to the modified state and has to be staged again
    - untracked: if the file is removed after the commit



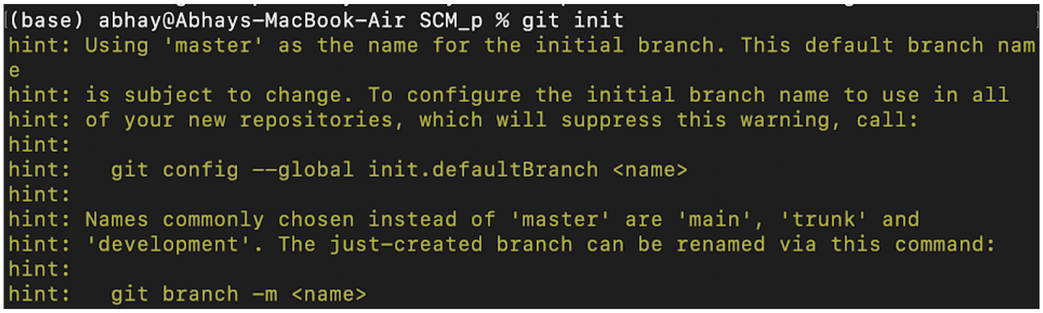
Procedure:

1. Firstly make a directory on your local machine.



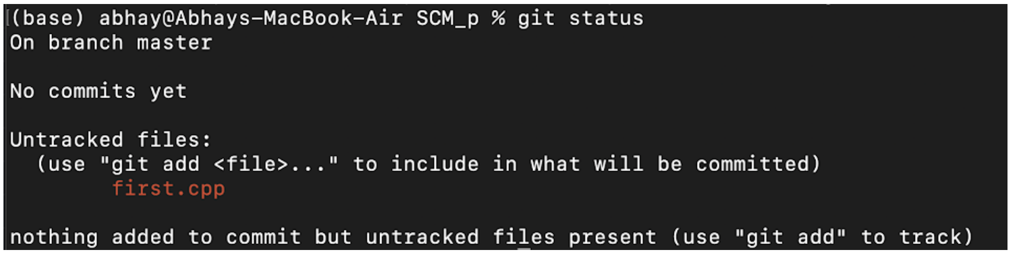
```
(base) abhay@Abhays-MacBook-Air ~ % cd Desktop
(base) abhay@Abhays-MacBook-Air Desktop % mkdir SCM_p
(base) abhay@Abhays-MacBook-Air Desktop % cd SCM_p
(base) abhay@Abhays-MacBook-Air SCM_p % vi first.cpp
(base) abhay@Abhays-MacBook-Air SCM_p % git status
fatal: not a git repository (or any of the parent directories): .git
(base) abhay@Abhays-MacBook-Air SCM_p % 
```

2. Initialize a repository in the same directory.



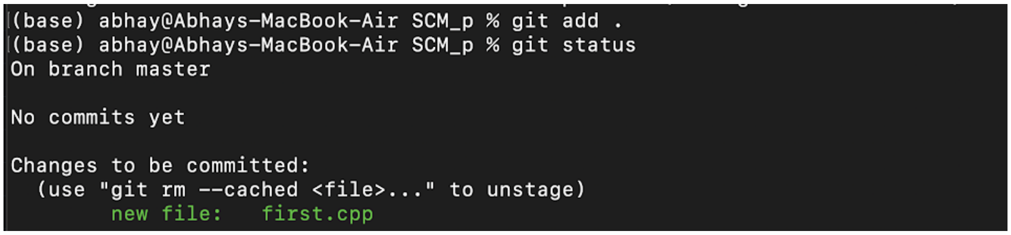
```
(base) abhay@Abhays-MacBook-Air SCM_p % git init
hint: Using 'master' as the name for the initial branch. This default branch nam
e
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
```

3. Check the status of all the files.



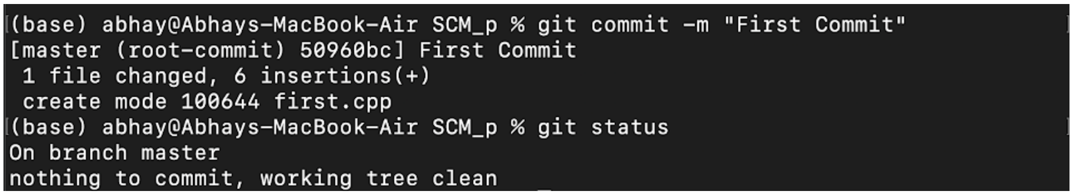
```
(base) abhay@Abhays-MacBook-Air SCM_p % git status
On branch master

No commits yet

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

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

4. Here ‘first.cpp’ is an unstaged file. Add the file, then check the status.



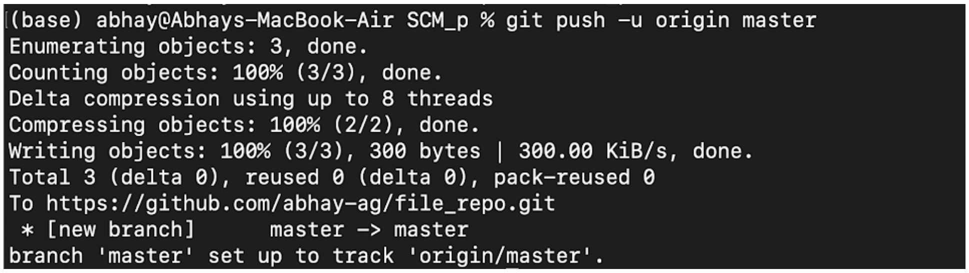
```
(base) abhay@Abhays-MacBook-Air SCM_p % git add .
(base) abhay@Abhays-MacBook-Air SCM_p % git status
On branch master

No commits yet

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

5. ‘first.cpp’ is now staged and ready to commit. Commit and then check the status.



```
(base) abhay@Abhays-MacBook-Air SCM_p % git commit -m "First Commit"
[master (root-commit) 50960bc] First Commit
 1 file changed, 6 insertions(+)
 create mode 100644 first.cpp
(base) abhay@Abhays-MacBook-Air SCM_p % git status
On branch master
nothing to commit, working tree clean
```

6. The file is now committed and returns to unmodified state. Now to push it to GitHub we use. Repo Link [https://github.com/abhay-ag/file_repo.git]



```
(base) abhay@Abhays-MacBook-Air SCM_p % git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 300 bytes | 300.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/abhay-ag/file_repo.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```