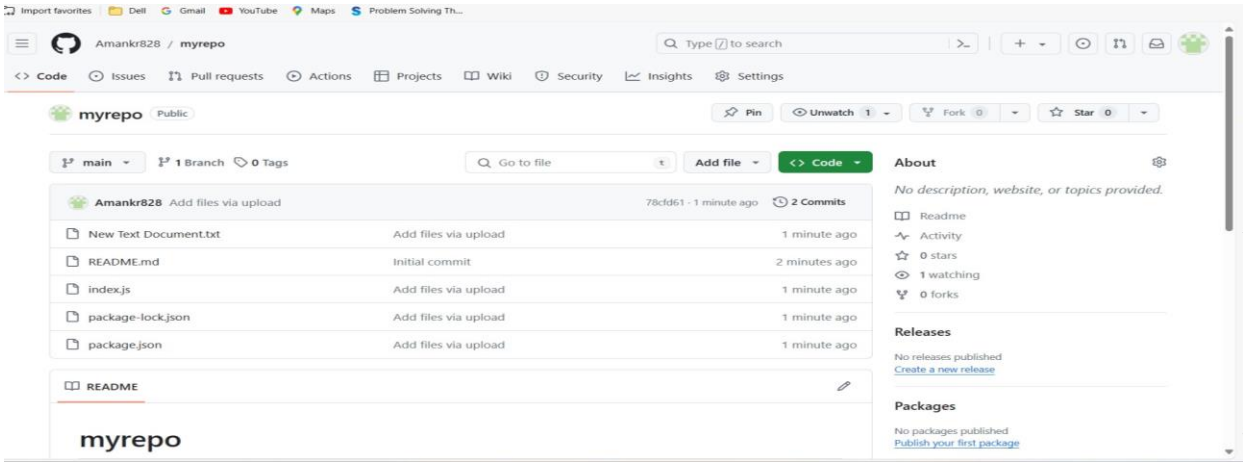
Assignment No : 9

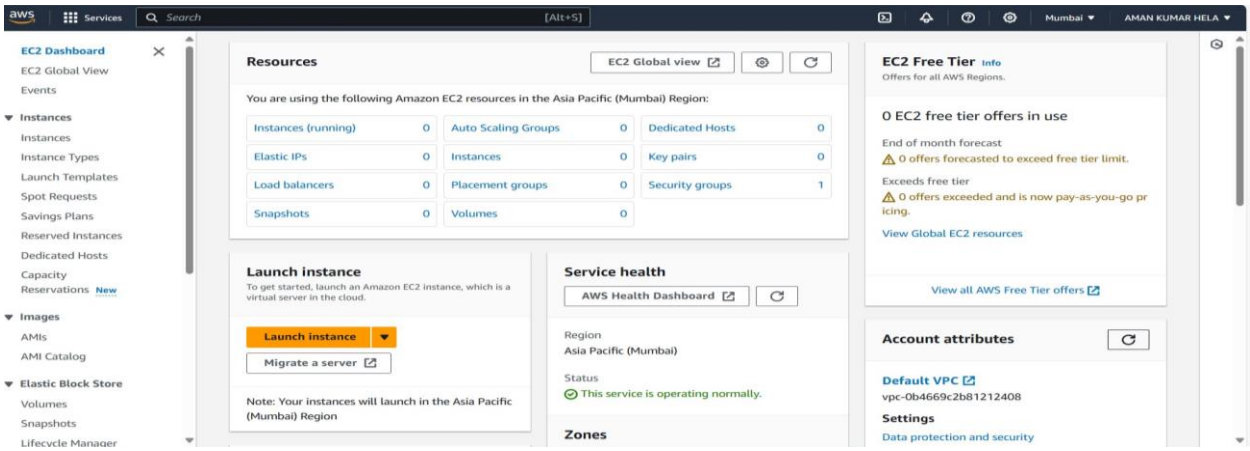
Problem Statement : Deploy a project from GitHub on EC2.

Steps :-

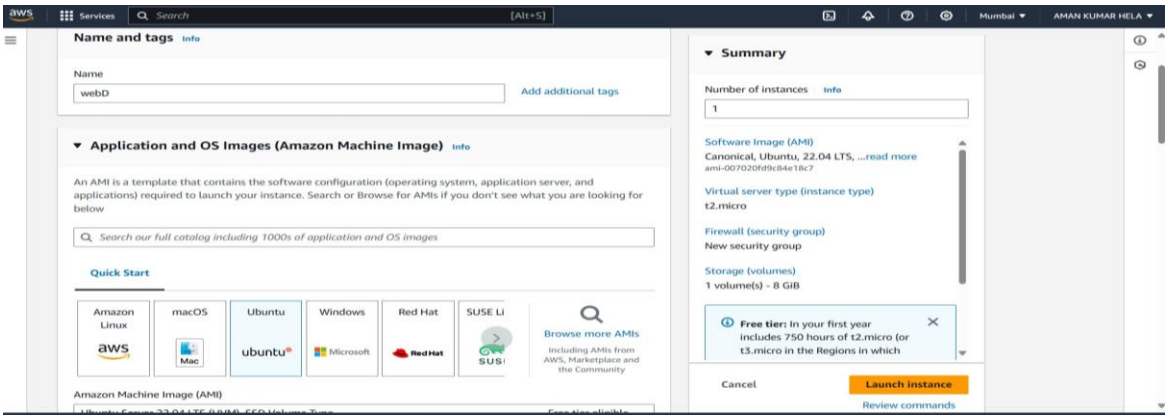
1. At first upload files(repo) to GitHub.



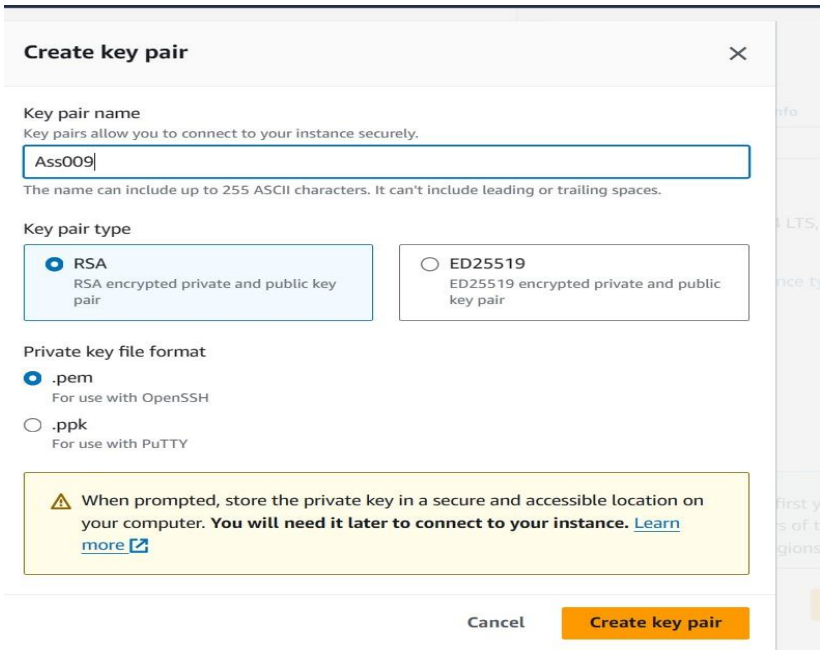
2. Now open EC2 and go to Launch Instance.



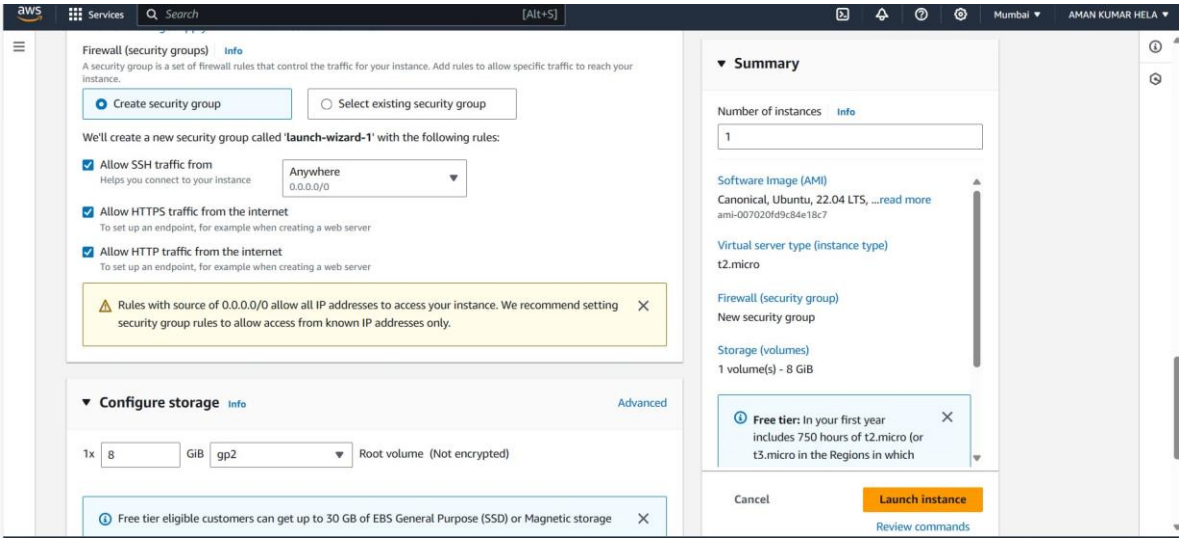
3. Now give name of server which should be unique and select Ubuntu application and OS image inside quick start.



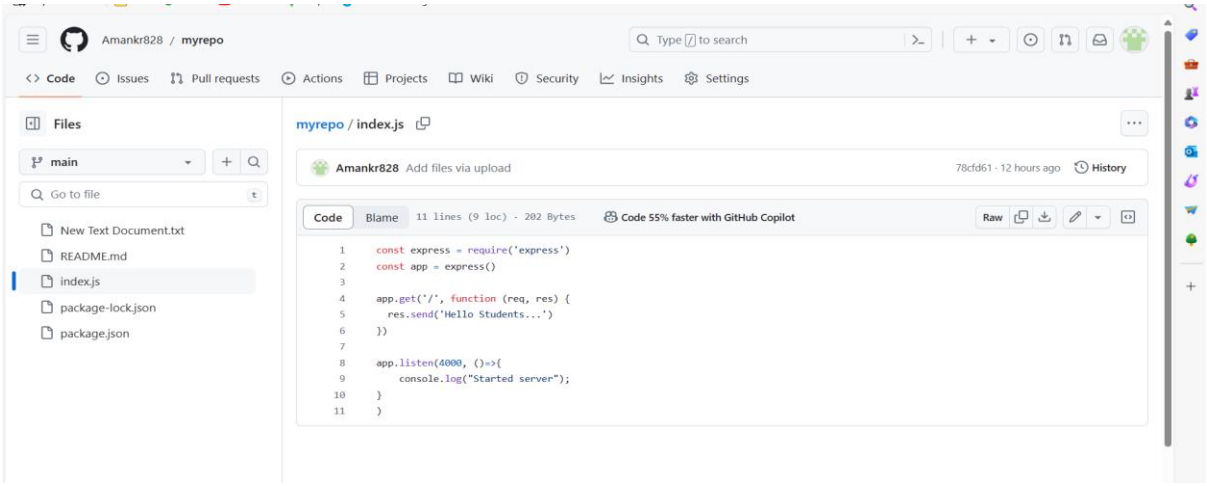
4. Now generate new key pair, give name(unique) and now click Create Key Pair and also download the document.



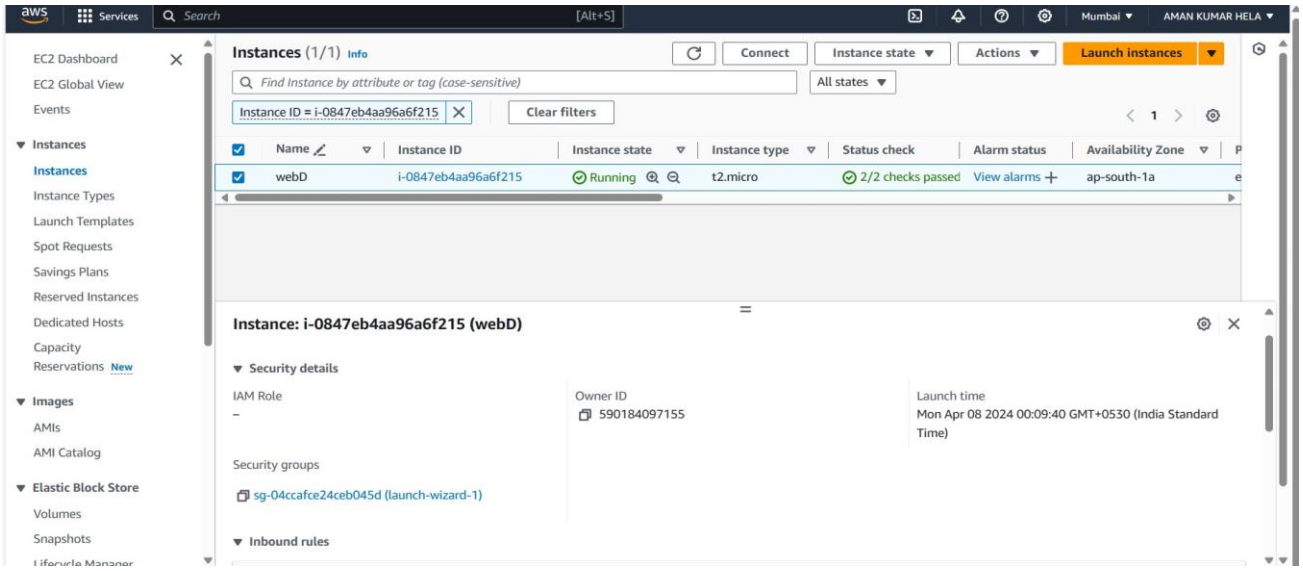
5. After that select Create security group and click all checkboxes bellow it. After it click on Launch Instance.



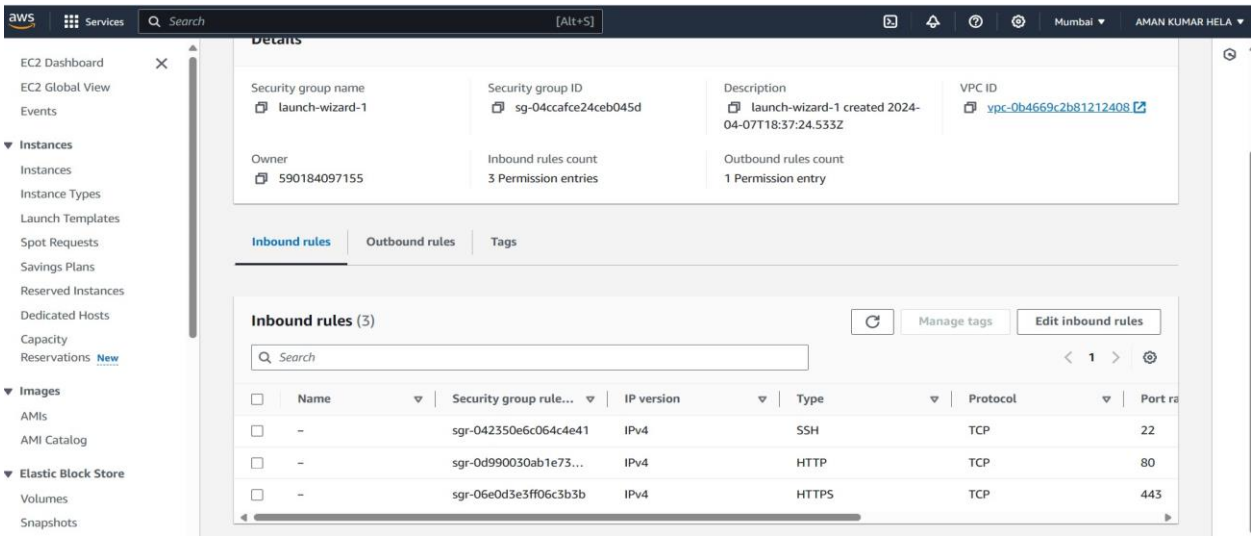
6. Now go to GitHub that project and then to index.js ,there you can see 4000 in app.listen which is port no that will be added to custom TCP.



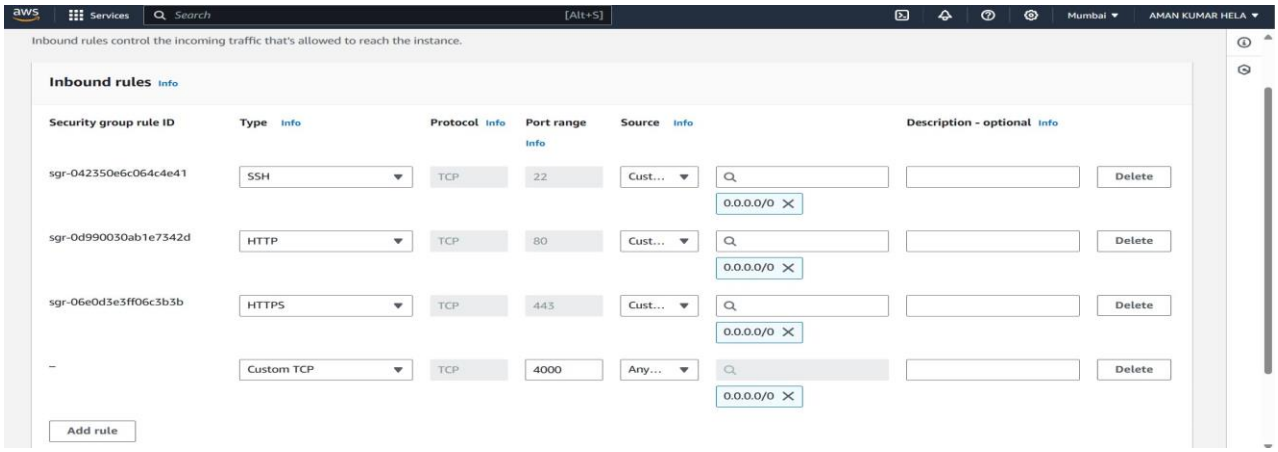
7. After it go back to EC2 instances then select that instance newly made and click on Security tab and then Security groups.



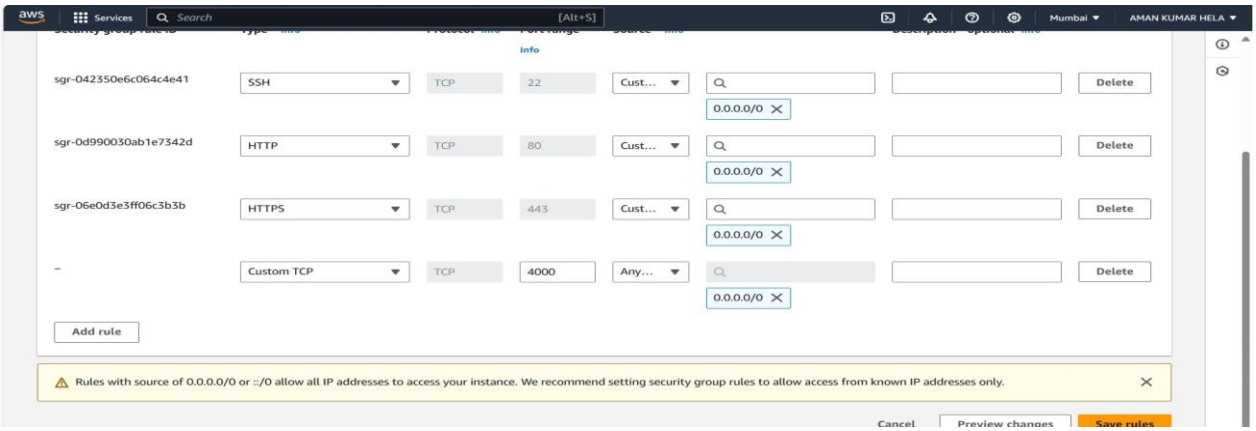
8. After in Inbound rules section click on Edit inbound rules.



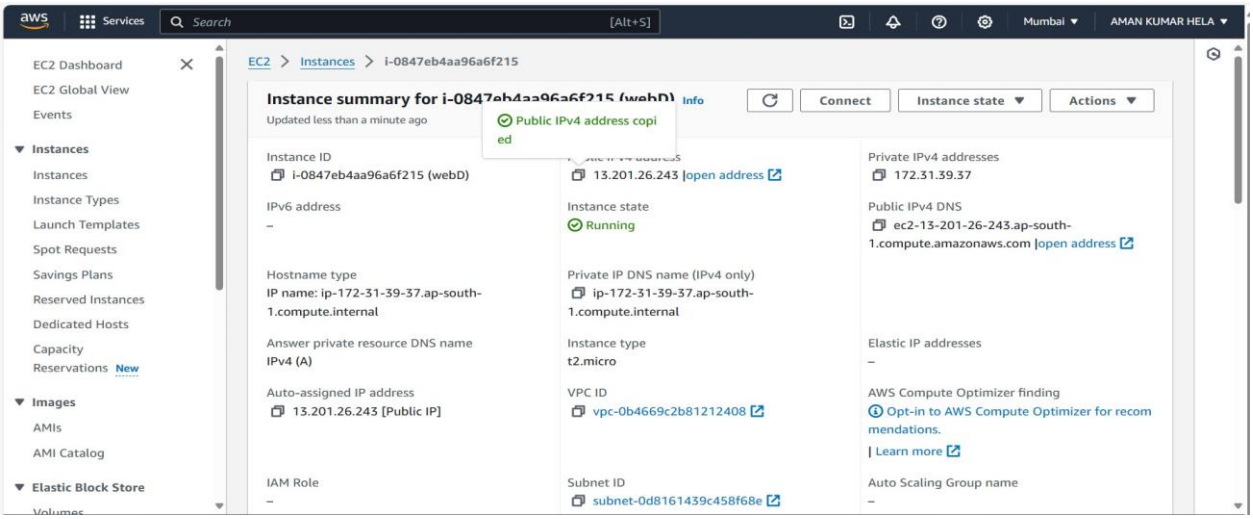
9. Then in inbound rules, click on Add rule select Custom TCP ,give port range 4000 and select 0.0.0.0/0.



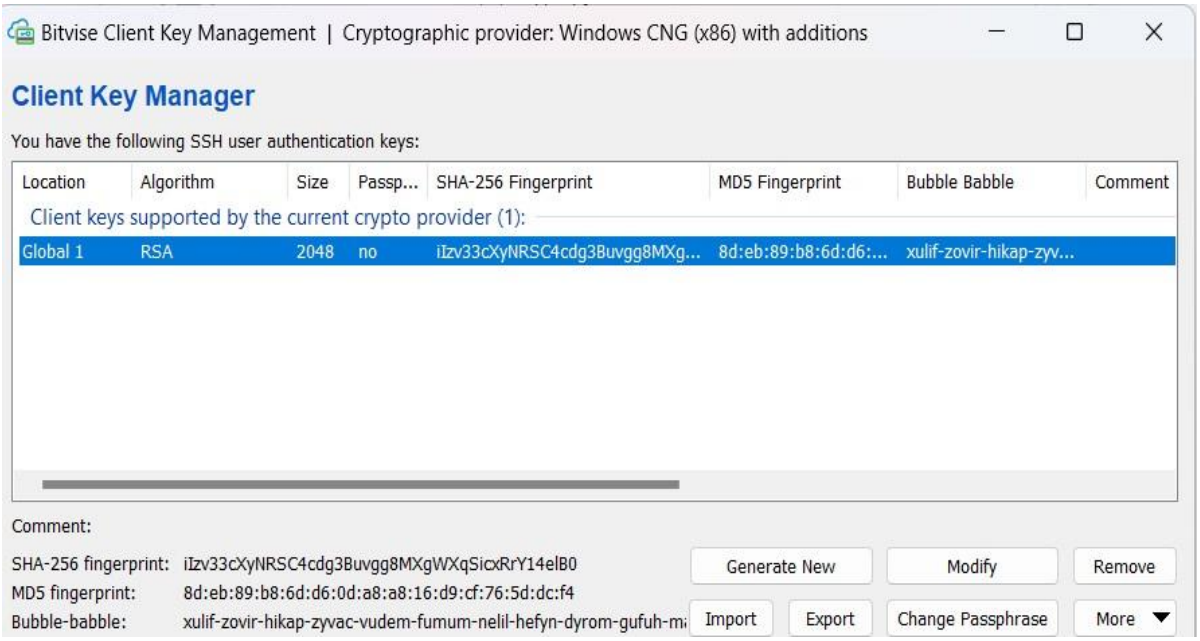
10. After it click on Save rules.



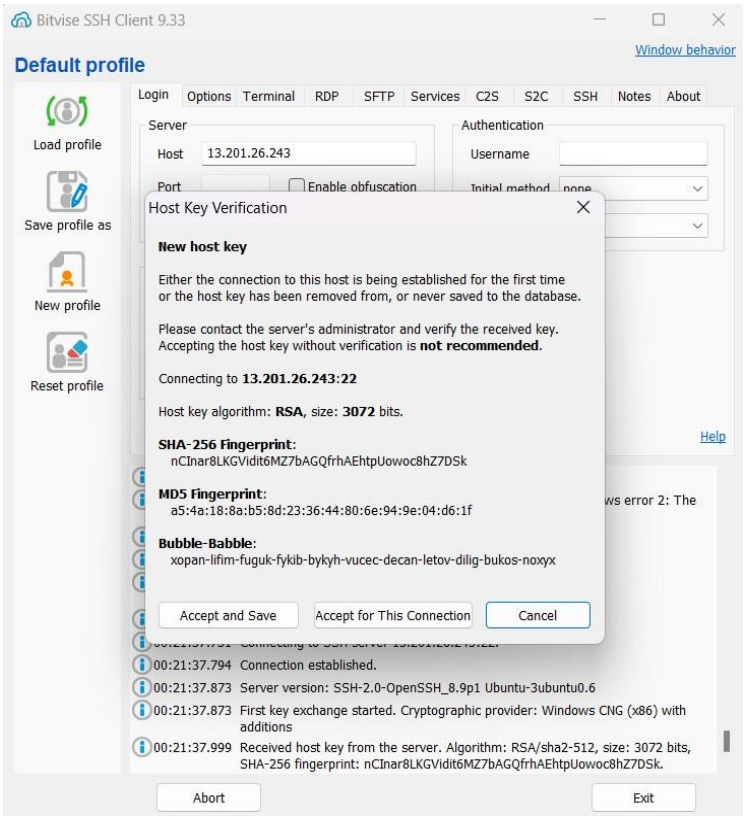
11. Now go back to EC2 recently created instance and copy the public IPv4 address.



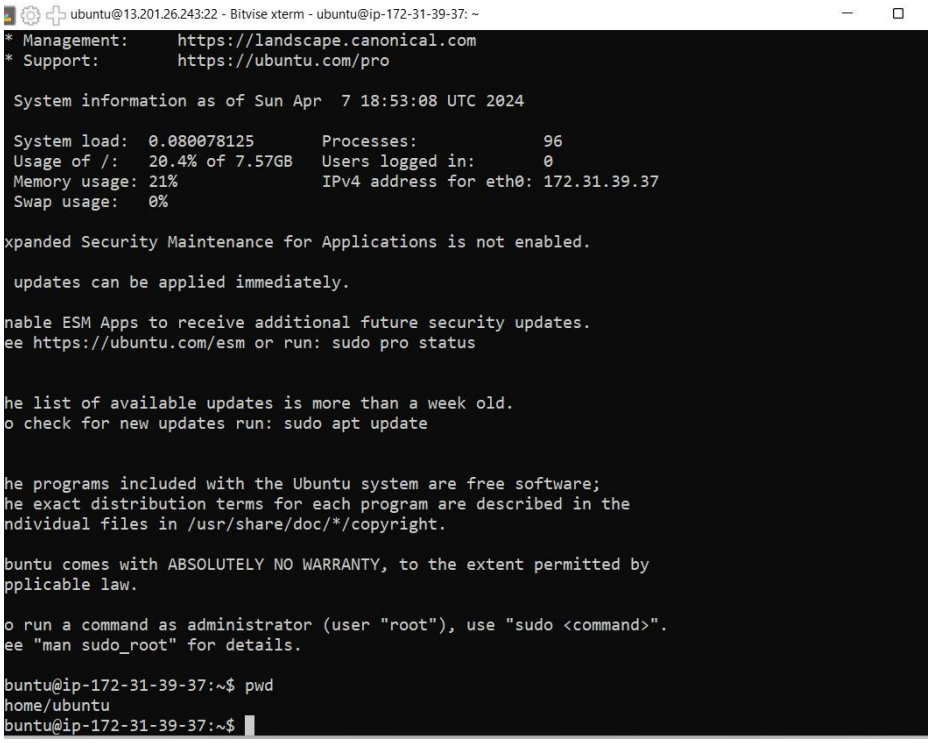
12. Now open Bitvise SSH, go to Client key manager and import that downloaded key.



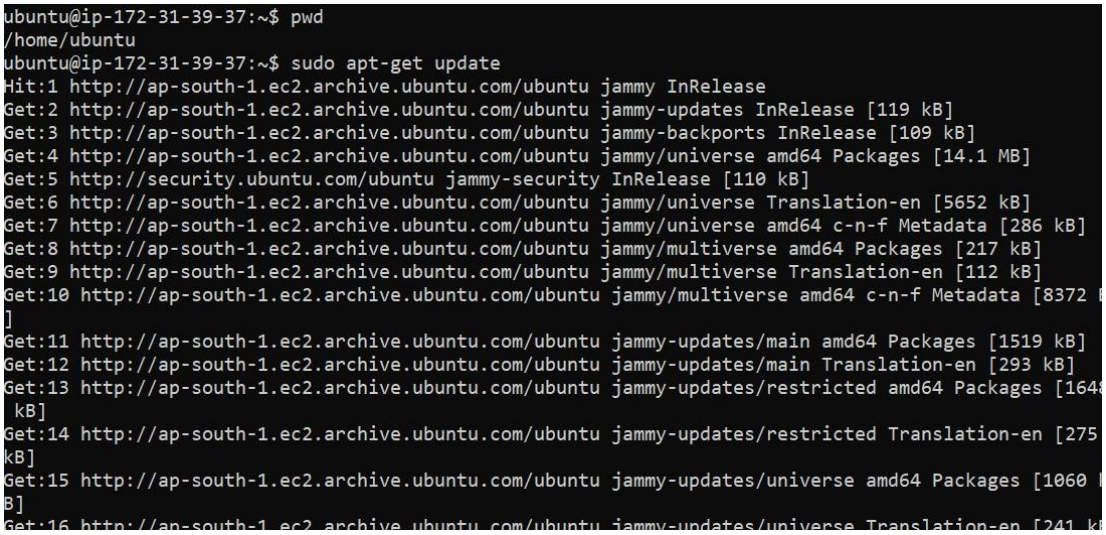
13. After it paste that copied IPv4 public address in host and then login and also do Accept and Save, also set publickey as global 2 .



14. Now open new terminal and write pwd, we are in ubuntu.



15. Now write command “sudo apt-get update” to fetch all packages.



16. Write “sudo apt-get upgrade” to upgrade all outdated packages.

```
ubuntu@ip-172-31-39-37:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  linux-aws linux-headers-aws linux-image-aws ubuntu-advantage-tools ubuntu-pro-client-l10n
The following packages will be upgraded:
  apt apt-utils bash bsdextrautils bsdutils coreutils curl dpkg eject ethtool fdisk libapt-pkg6.0
  libblkid1 libcurl3-gnutls libcurl4 libexpat1 libfdisk1 libgpgme11 libldap-2.5-0 libldap-common
  libmount1 libsmartcols1 libuuid1 mount python3-cryptography python3-update-manager snapd
  update-manager-core update-notifier-common util-linux uuid-runtime vim vim-common vim-runtime
  vim-tiny xxd
36 upgraded, 0 newly installed, 0 to remove and 5 not upgraded.
Need to get 43.9 MB of archives.
```

17. Now write command “sudo apt install nginx” to install webserver.

```
The following packages have been kept back:
  linux-aws linux-headers-aws linux-image-aws ubuntu-advantage-tools ubuntu-pro-client-l10n
The following packages will be upgraded:
  apt apt-utils bash bsdextrautils bsdutils coreutils curl dpkg eject ethtool fdisk libapt-pkg6.0
  libblkid1 libcurl3-gnutls libcurl4 libexpat1 libfdisk1 libgpgme11 libldap-2.5-0 libldap-common
  libmount1 libsmartcols1 libuuid1 mount python3-cryptography python3-update-manager snapd
  update-manager-core update-notifier-common util-linux uuid-runtime vim vim-common vim-runtime
  vim-tiny xxd
36 upgraded, 0 newly installed, 0 to remove and 5 not upgraded.
Need to get 43.9 MB of archives.
After this operation, 1584 kB disk space will be freed.
Do you want to continue? [Y/n] y
```

18. Now to execute javascript, we need to install nodejs.Write command

“ curl -SL https://deb.nodesource.com/setup_16.x | sudo -E bash – “ .

```
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Fetched 110 kB in 1s (129 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20230311ubuntu0.22.04.1).
curl is already the newest version (7.81.0-1ubuntu1.16).
gnupg is already the newest version (2.2.27-3ubuntu2.1).
apt-transport-https is already the newest version (2.4.12).
0 upgraded, 0 newly installed, 0 to remove and 5 not upgraded.
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 https://deb.nodesource.com/node_16.x nodistro InRelease [12.1 kB]
Hit:5 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:6 https://deb.nodesource.com/node_16.x nodistro/main amd64 Packages [7462 B]
Fetched 19.6 kB in 2s (11.8 kB/s)
Reading package lists... Done
```

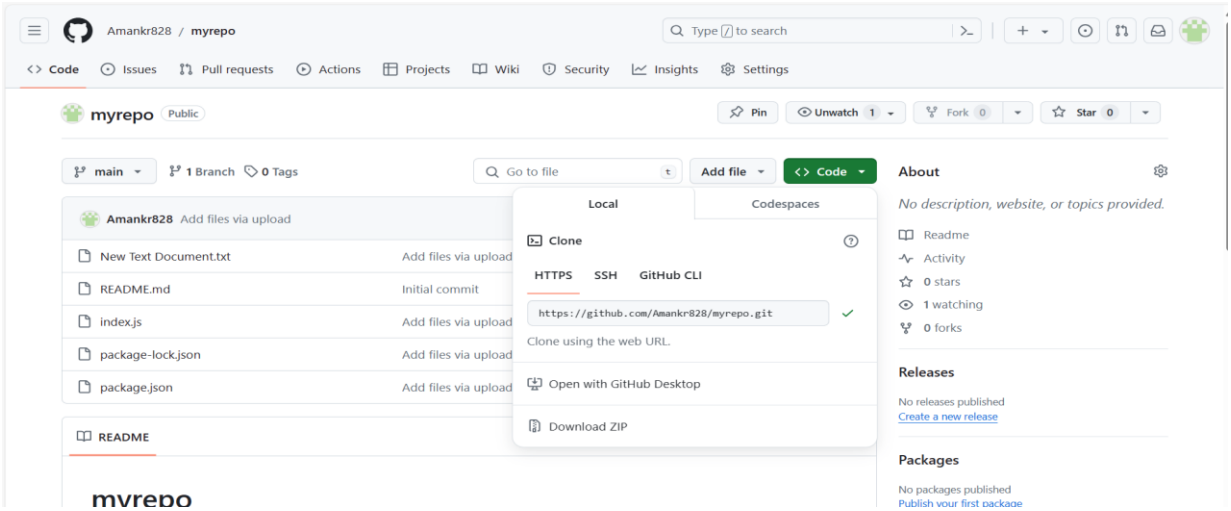
19. Now to install write “sudo apt-get install -y nodejs”.

```
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  nodejs
0 upgraded, 1 newly installed, 0 to remove and 5 not upgraded.
Need to get 27.5 MB of archives.
After this operation, 128 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_16.x nodistro/main amd64 nodejs amd64 16.20.2-1nodesource1 [27.5 MB]
Fetched 27.5 MB in 2s (17.0 MB/s)
Selecting previously unselected package nodejs.
(Reading database ... 65516 files and directories currently installed.)
Preparing to unpack .../nodejs_16.20.2-1nodesource1_amd64.deb ...
Unpacking nodejs (16.20.2-1nodesource1) ...
Setting up nodejs (16.20.2-1nodesource1) ...
Processing triggers for man-db (2.10.2-1) ...
```

20. Write “node –version” to see what version of nodejs installed.

```
ubuntu@ip-172-31-39-37:~$ node --version
v12.22.9
```

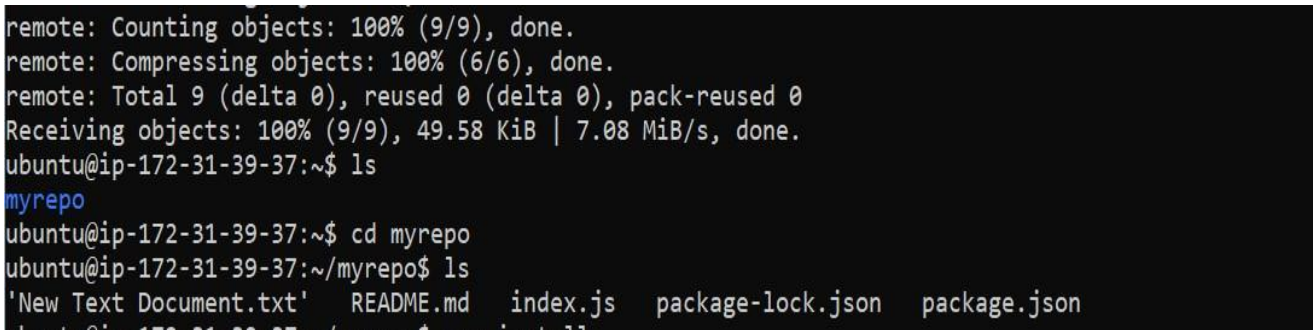
21. Now go back to GitHub and in code copy HTTPS URL.



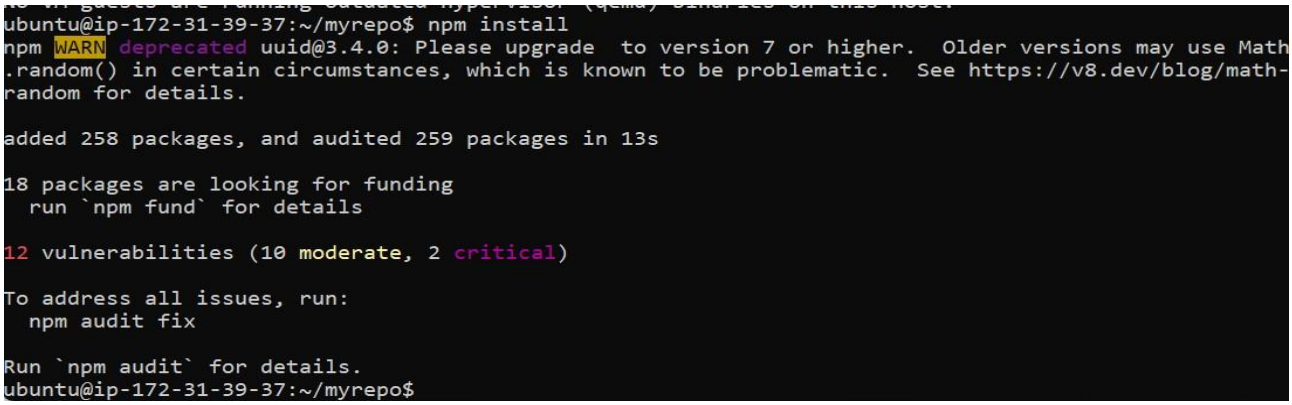
22. Now write git clone and paste that URL and write ls to see if project has been cloned or not.

```
ubuntu@ip-172-31-39-37:~$ git clone https://github.com/Amankr828/myrepo.git
Cloning into 'myrepo'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 9 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (9/9), 49.58 KiB | 7.08 MiB/s, done.
ubuntu@ip-172-31-39-37:~$ ls
myrepo
ubuntu@ip-172-31-39-37:~$ cd myrepo
```

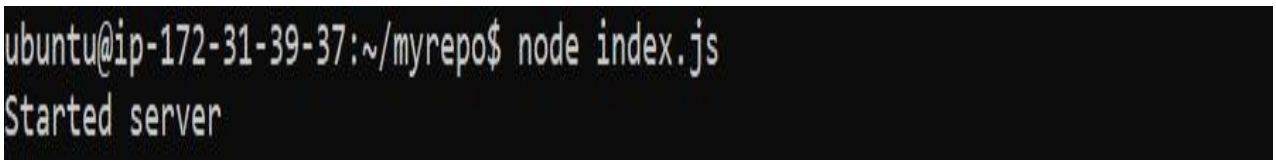
23. After it write command cd (project name) to enter into project and then ls to see what files have been uploaded.



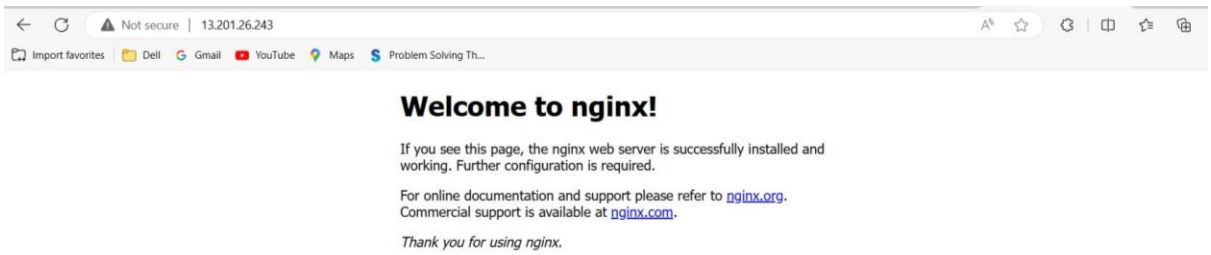
24. Now to execute node command we have to install node packet manager(npm). So write “npm install”.



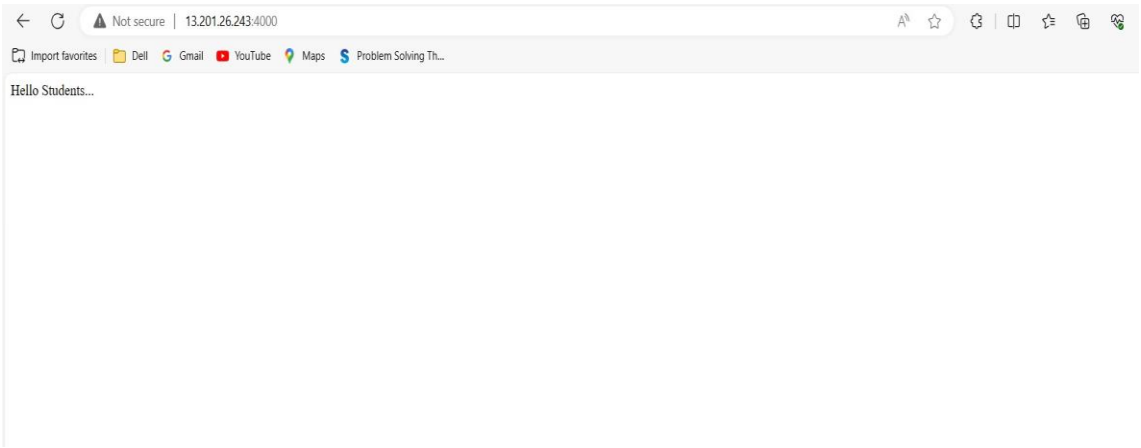
25. Now write node index.js.



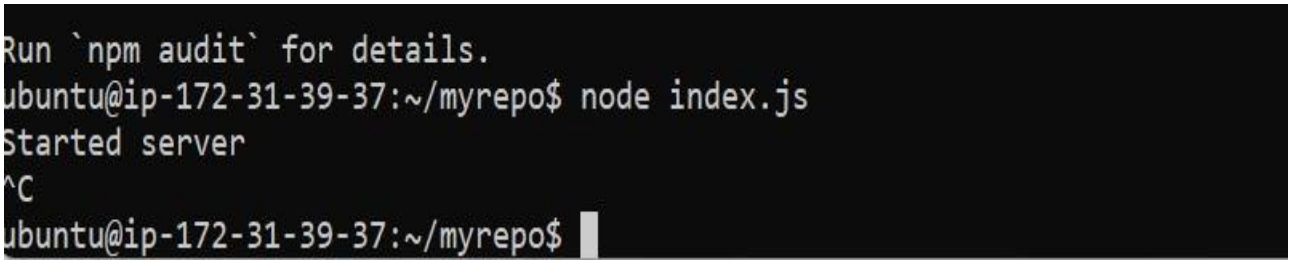
26. After it again copy public IPv4 address in EC2 instance and then paste it in another tab URL section.



27. At last in URL at end write :4000 to get your website.



28. Now to close server in new Terminal do (ctrl + c) to stop server and at last logout.



■ In this way we have deployed a project from GitHub to EC2.