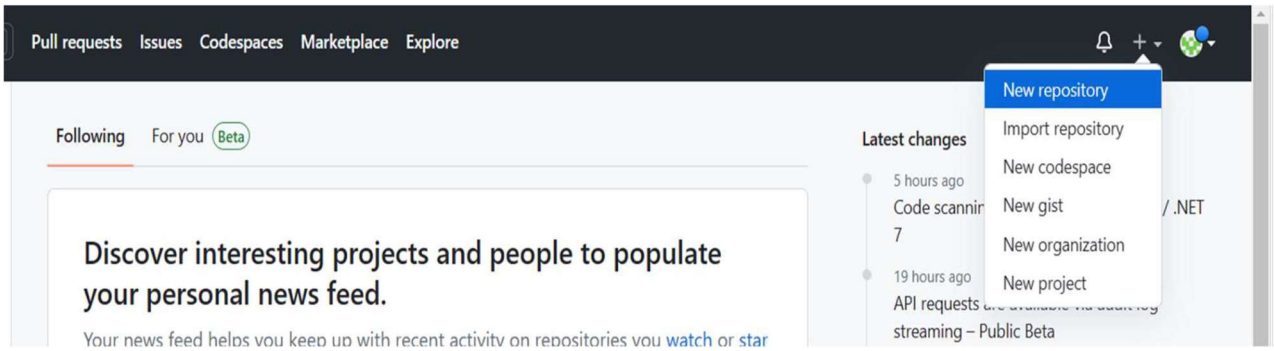
ASSIGNMENT 9

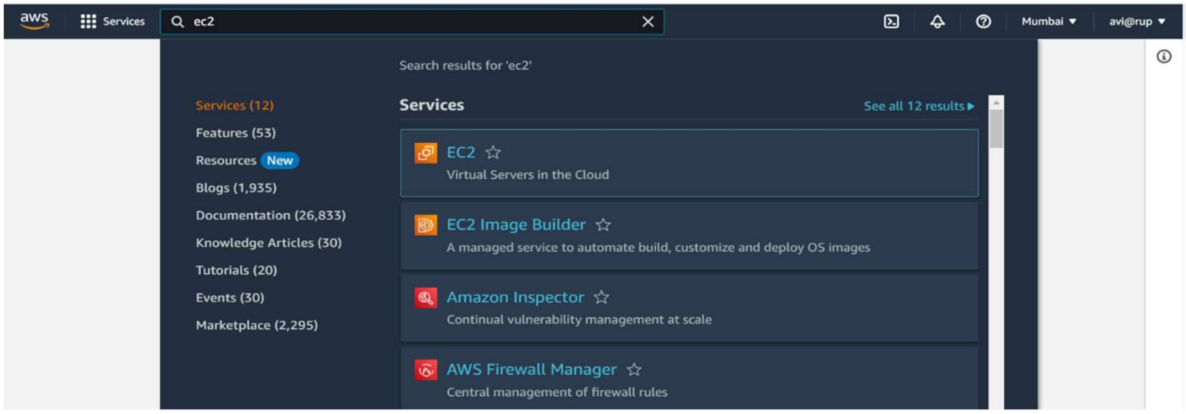
***Problem Statement*: Deploy a project from Github to EC2.**

1. Sign in to your Github account.

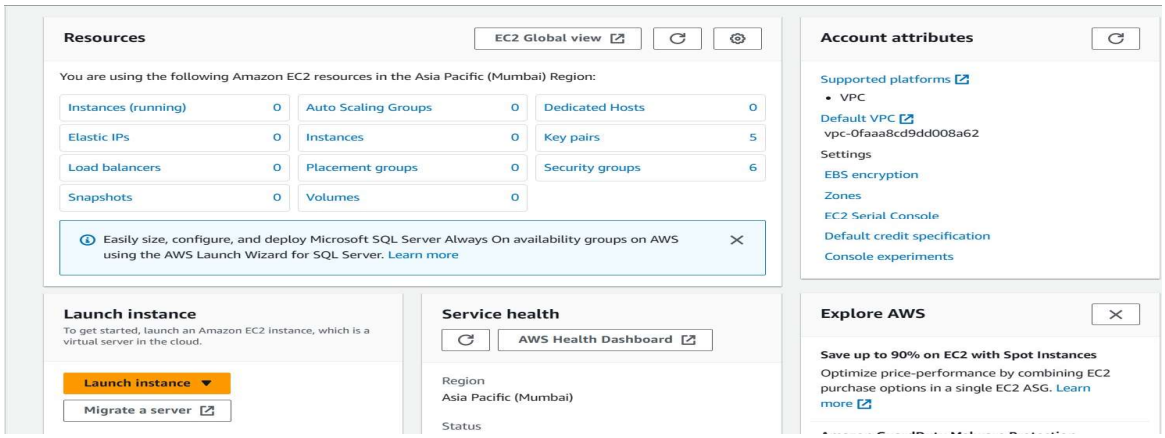


2. Create an EC2 instance in AWS.

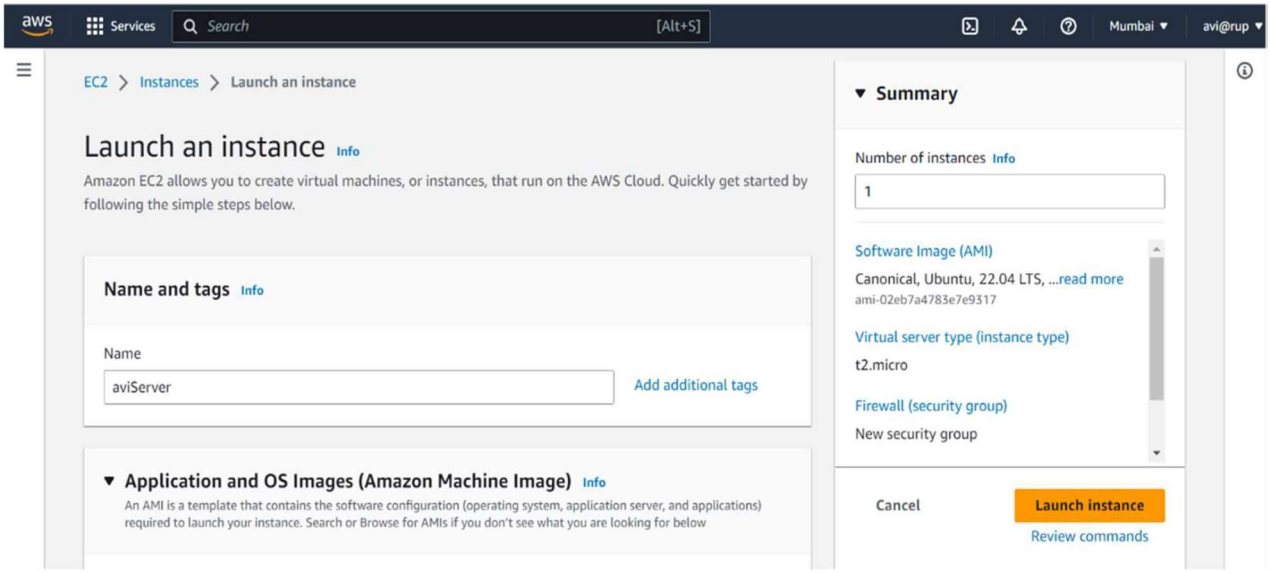
a) Sign in to your AWS account and then go to EC2.



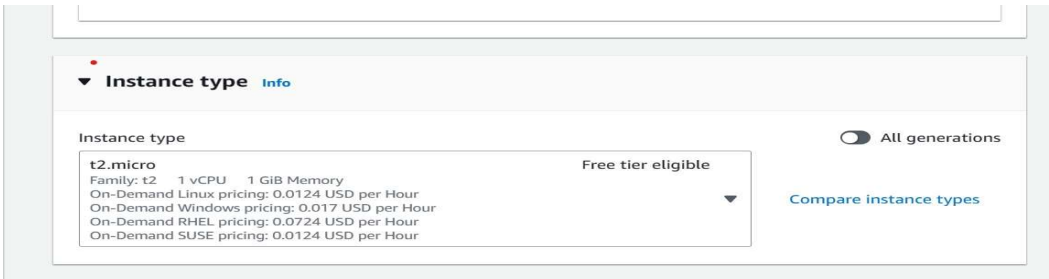
b) Next, Click on ***Launch Instance.***



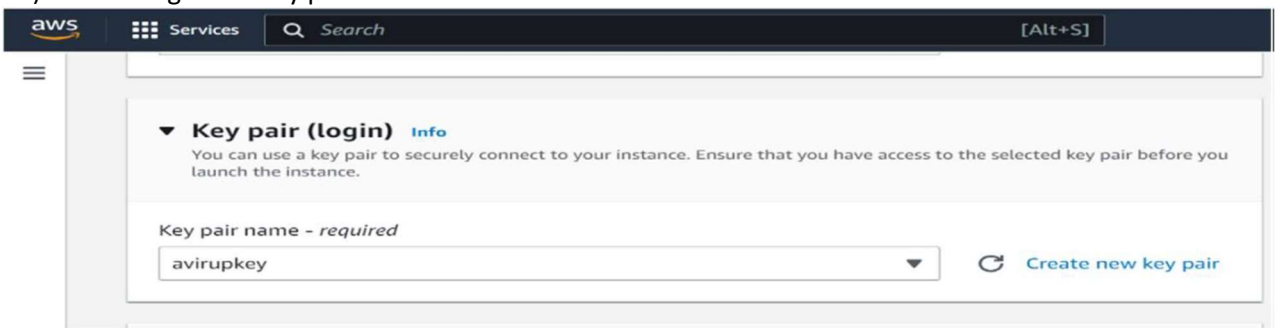
c) Write the instance name. Then, Select an *OS*. Here, we have selected *Ubuntu*.



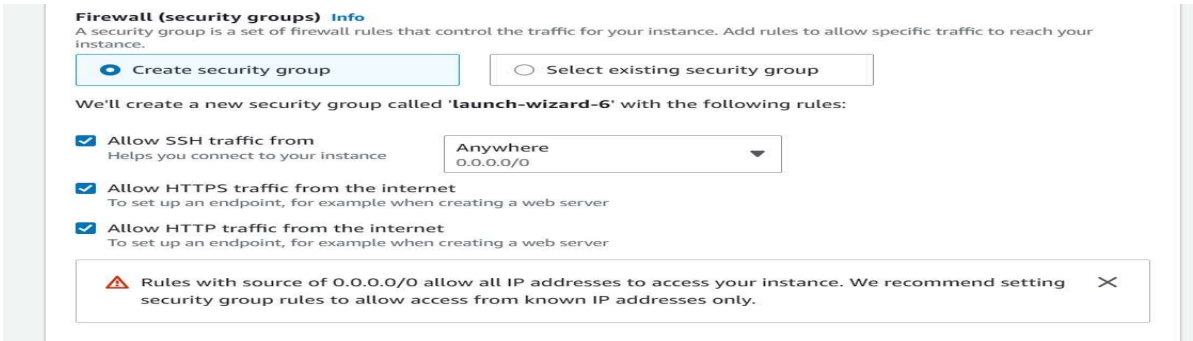
d) We can see the Instance type set here is t2.micro



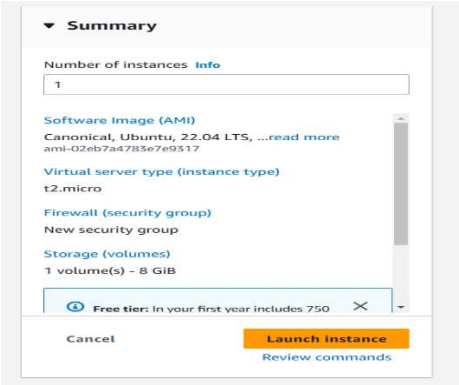
e) We have given a Key pair.



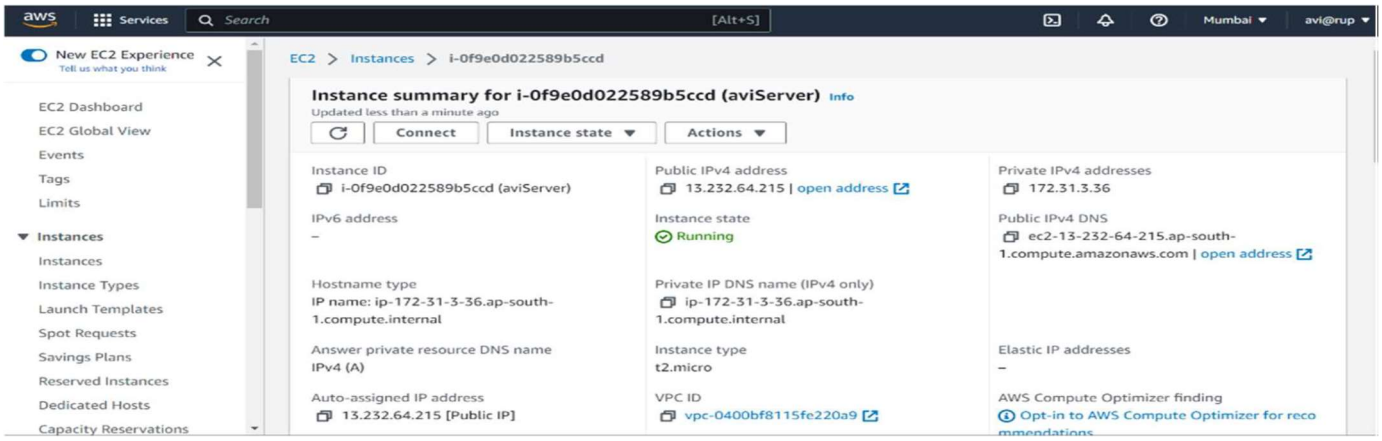
f) Allow the SSH, HTTPS, HTTP traffic from the internet.



g) Now, Click on ***Launch Instance.***

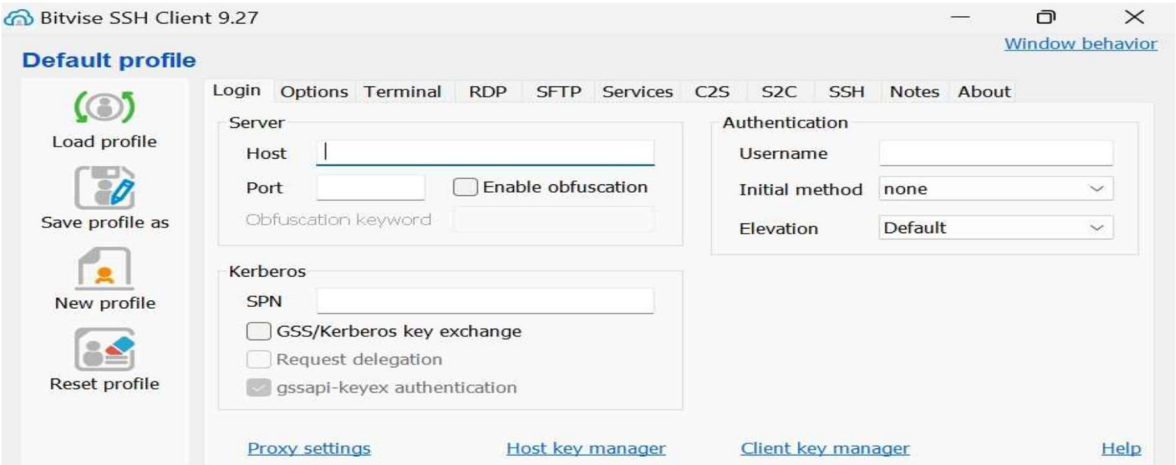


h) Next, copy the *Public IPv4 address*.

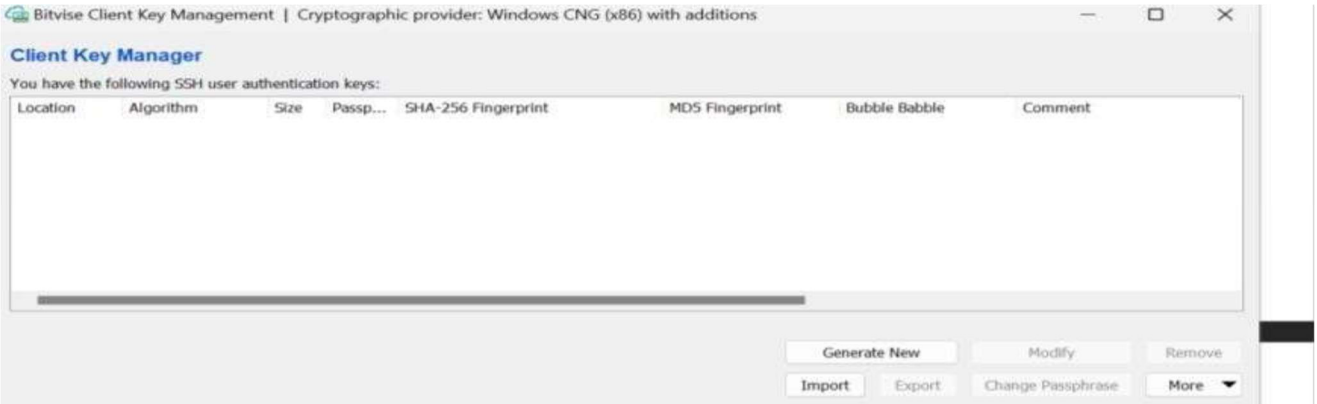


3. Now open Bitvise SSH.

a) Within the Login tab, In the *host* field paste the Public IPv4 address which you have copied earlier. Set the Username as *ubuntu*, Initial method as *public key and* Client key as *Global 1.*

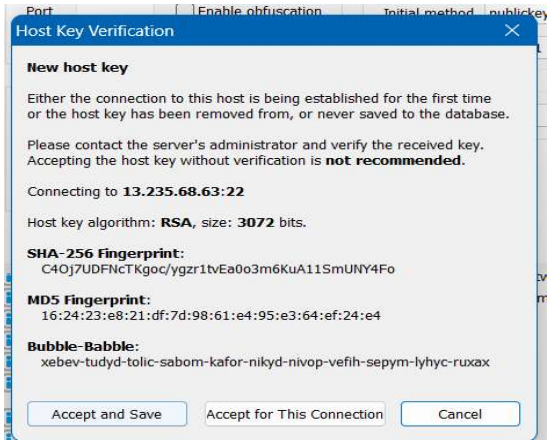


b) Now, Import the key pair.



c) Now, Click on **Log in.**

d) Click on *Accept and Save.*



e) Next, Open the **Terminal.**

4. In the *Bitvise SSH Terminal*, Type the following commands in the terminal one by one.

a) pwd

```
ubuntu@ip-172-31-0-51:~$ pwd
/home/ubuntu
```

b) sudo apt-get update && sudo apt-get upgrade

```
ubuntu@ip-172-31-0-51:~$ sudo apt-get update && sudo apt-get upgrade
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [731 kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [147 kB]
```

Continuing…

```
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-51:~$
```

c) sudo apt-get install nginx

```
ubuntu@ip-172-31-0-51:~$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

Continuing…

```
Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

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d) nginx -v

```
ubuntu@ip-172-31-0-51:~$ nginx -v
nginx version: nginx/1.18.0 (Ubuntu)
```

e) curl -sL https://deb.nodesource.com/setup_18.x | sudo -E bash –

```
ubuntu@ip-172-31-0-51:~$ curl -sL https://deb.nodesource.com/setup_18.x | sudo -E bash -

## Installing the NodeSource Node.js 18.x repo...
```

Continuing…

f) sudo apt install nodejs

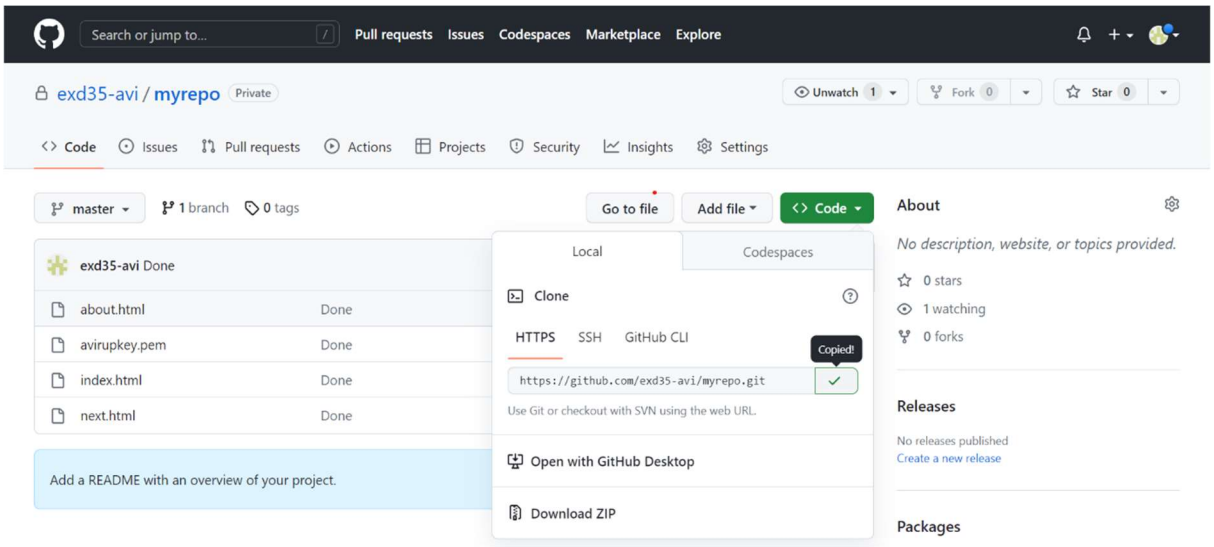
```
ubuntu@ip-172-31-0-51:~$ sudo apt install nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  nodejs
```

Continuing…

g) node -v

```
ubuntu@ip-172-31-0-51:~$ node -v
v18.15.0
```

h) Now, copy the HTTPS link of the Github Repository.



Again, go to Bitvise SSH terminal and type the following command to clone the repository in the EC2 server.

git clone https://github.com/exd35-avi/myrepo.git

Now, give the Username and Password(Token)

```
ubuntu@ip-172-31-42-96:~$ git clone https://github.com/exd35-avi/myrepo.git
Cloning into 'myrepo'...
Username for 'https://github.com': exd35-avi
Password for 'https://exd35-avi@github.com':
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 6 (delta 1), pack-reused 0
Receiving objects: 100% (6/6), done.
Resolving deltas: 100% (1/1), done.
```

i) dir

```
ubuntu@ip-172-31-42-96:~$ dir
myrepo
```

j) cd Awsproject2

```
ubuntu@ip-172-31-42-96:~$ cd myrepo
```

k) dir

```
ubuntu@ip-172-31-42-96:~/myrepo$ ls
about.html  avirupkey.pem  index.html  next.html
```

l) npm install

```
ubuntu@ip-172-31-0-51:~/Awsproject2$ npm install
npm WARN deprecated uuid@3.4.0: Please upgrade  to version 7 or higher.  Older versions may use Math
.random() in certain circumstances, which is known to be problematic.  See https://v8.dev/blog/math-
random for details.

added 258 packages, and audited 259 packages in 15s

18 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New minor version of npm available! 9.5.0 -> 9.6.4
npm notice Changelog: https://github.com/npm/cli/releases/tag/v9.6.4
npm notice Run npm install -g npm@9.6.4 to update!
npm notice
```

m) node index.js

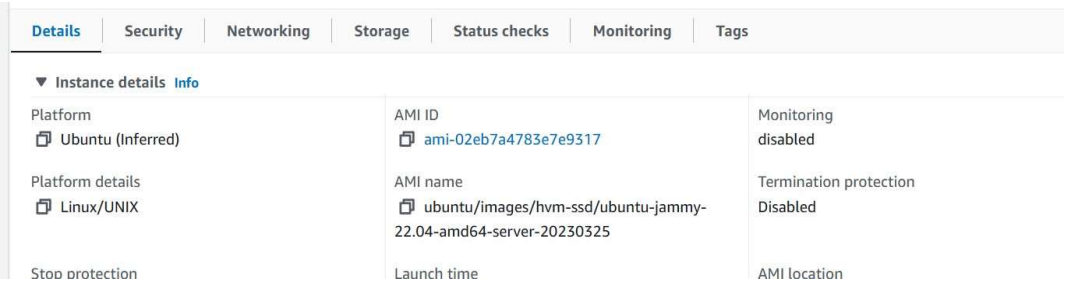
```
ubuntu@ip-172-31-0-51:~/Awsproject2$ node index.js
Started server
```

n) Copy the Public IPv4 address and paste it in a browser.

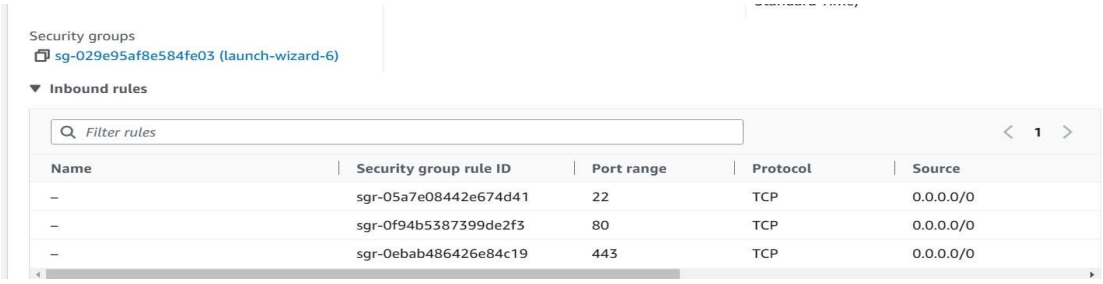
o) We cannot see our website in any port.

5. Now, to see our website in port 4000, we have to follow the steps.

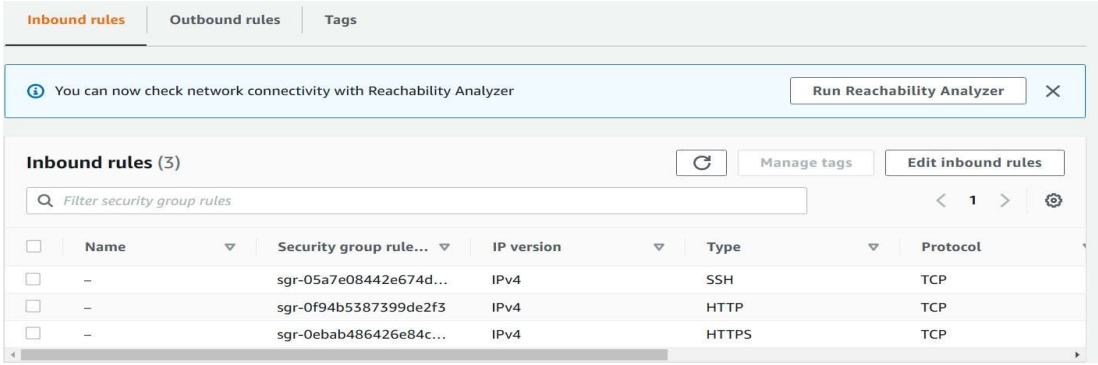
a) Within the instance you create, got to the Security tab.



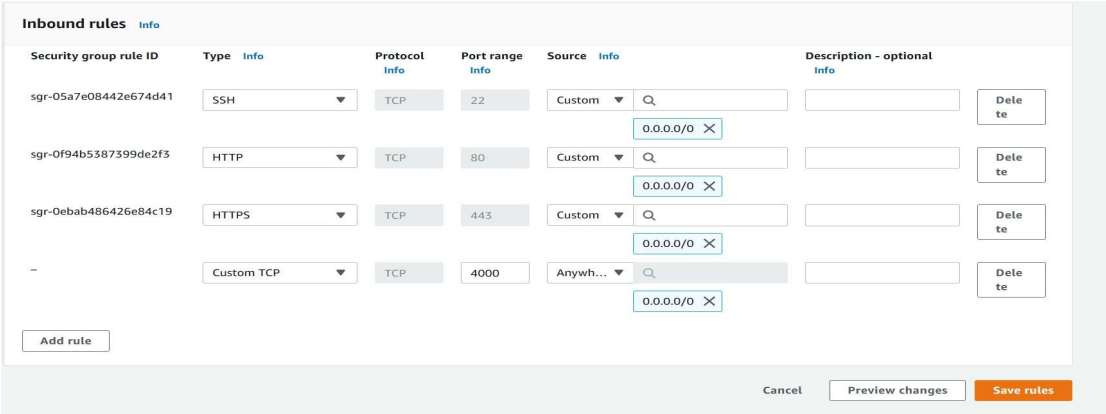
b) Next, Go to the Security groups.



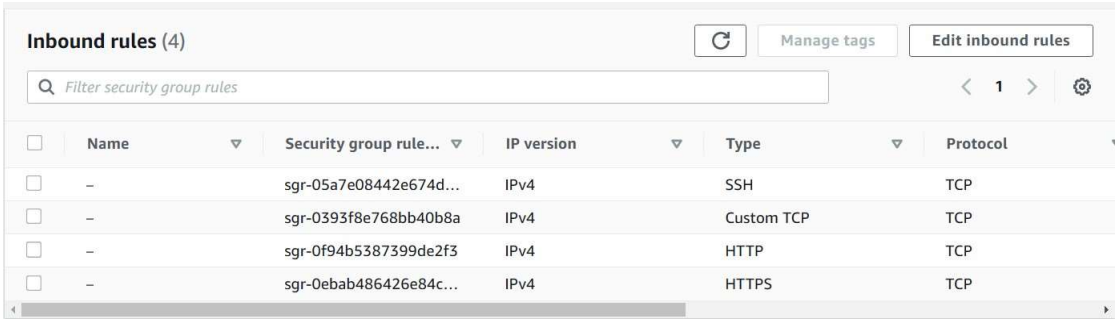
c) Next, Click on Edit inbound rules.



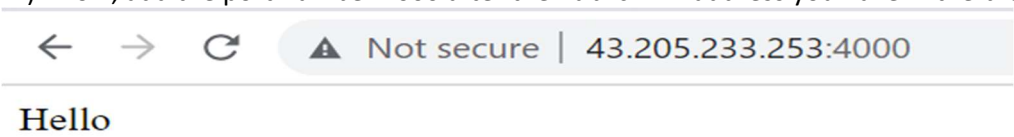
d) Now, add a custom TCP with port 4000 and source 0.0.0.0/0 and Save rules.



e) We can see that the new rule is added.



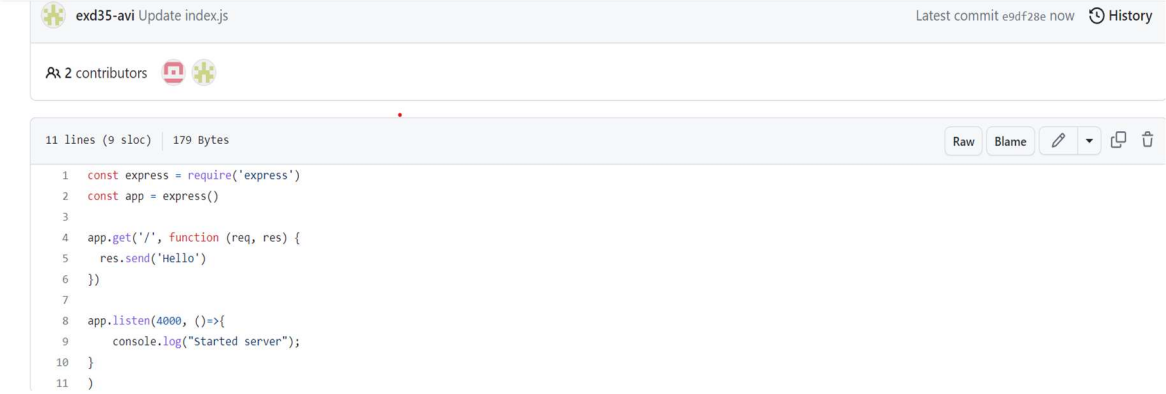
f) Now, add the port number 4000 after the Public IPv4 address you have in the browser URL.



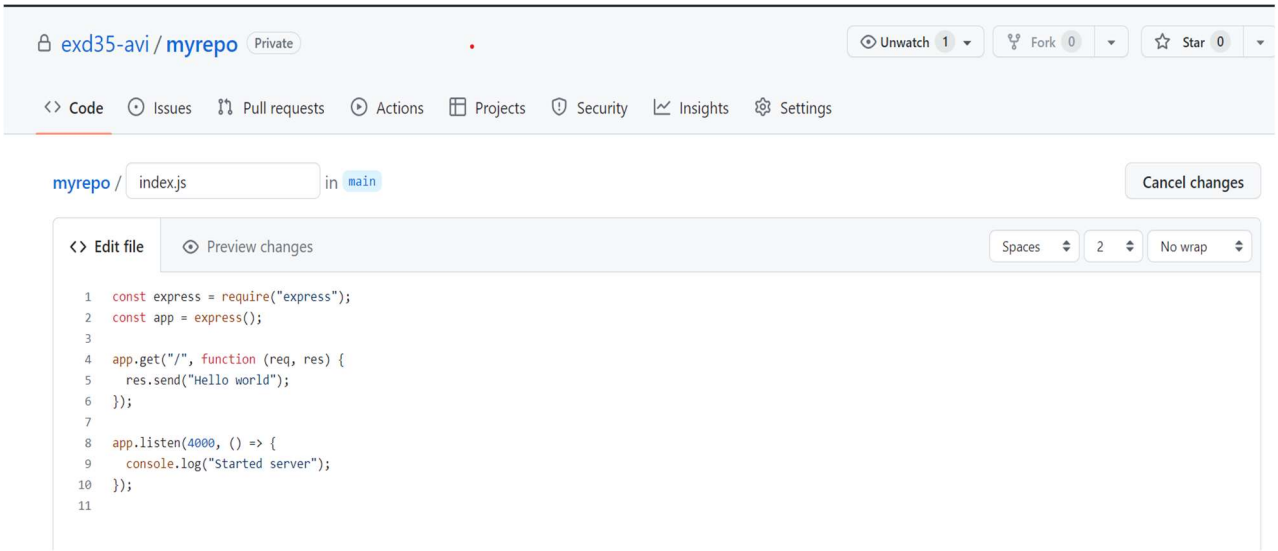
We can see the Text “Hello”. Thus, it is working.

6. Making changes in the webpage.

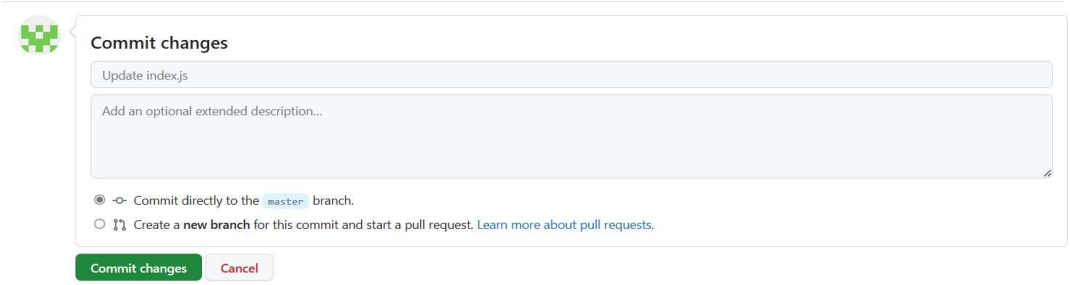
a) Go to index.js file in your Github Repository. Then, Click on the pen icon.



b) Edit the code.



c) Click **Commit changes**.



d) Now, go to the Bitvise terminal and run the following commands respectively.

- Stop the server first.

```
Started server
^C
ubuntu@ip-172-31-0-51:~/Awsproject2$
```

git pull and Give *username* and *password*.

```
ubuntu@ip-172-31-32-29:~/myrepo$ git pull
Username for 'https://github.com': exd35-avi
Password for 'https://exd35-avi@github.com':
```

You can see the change is done. i.e. 1 file changed, 1 insertion(+), 1 deletion(-)

```
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 662 bytes | 662.00 KiB/s, done.
From https://github.com/exd35-avi/myrepo
   f0abafe..4f19de6  main       -> origin/main
Updating f0abafe..4f19de6
Fast-forward
 index.js | 2 +-
```

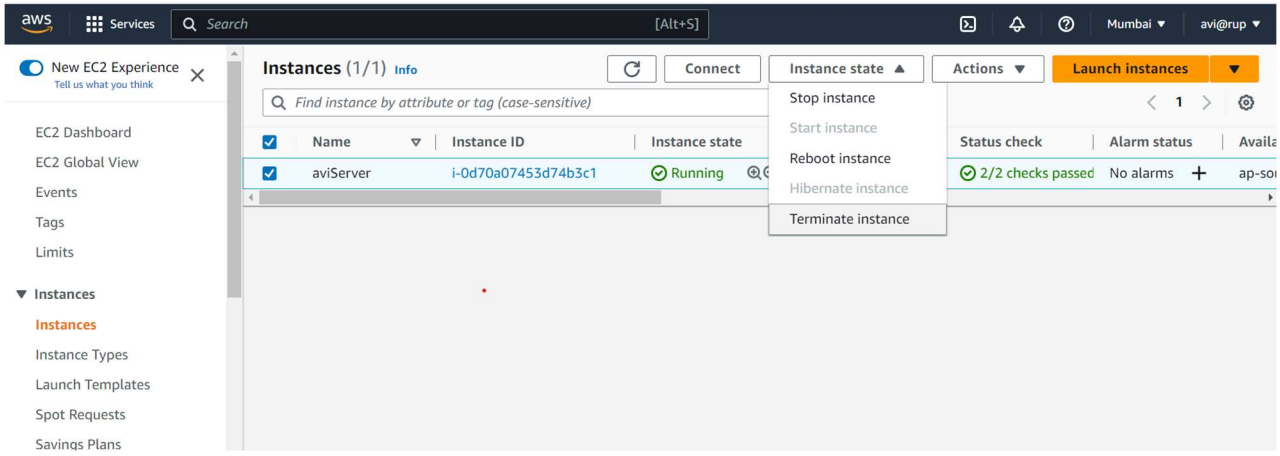
- Start the server again.

```
ubuntu@ip-172-31-32-29:~/myrepo$ node index.js
Started server
```

- Refresh the page and we can see the changes.

Hello world

7. Terminate the EC2 server.



Next, Logout of **Bitvise SSH Client** by clicking *Abort*.