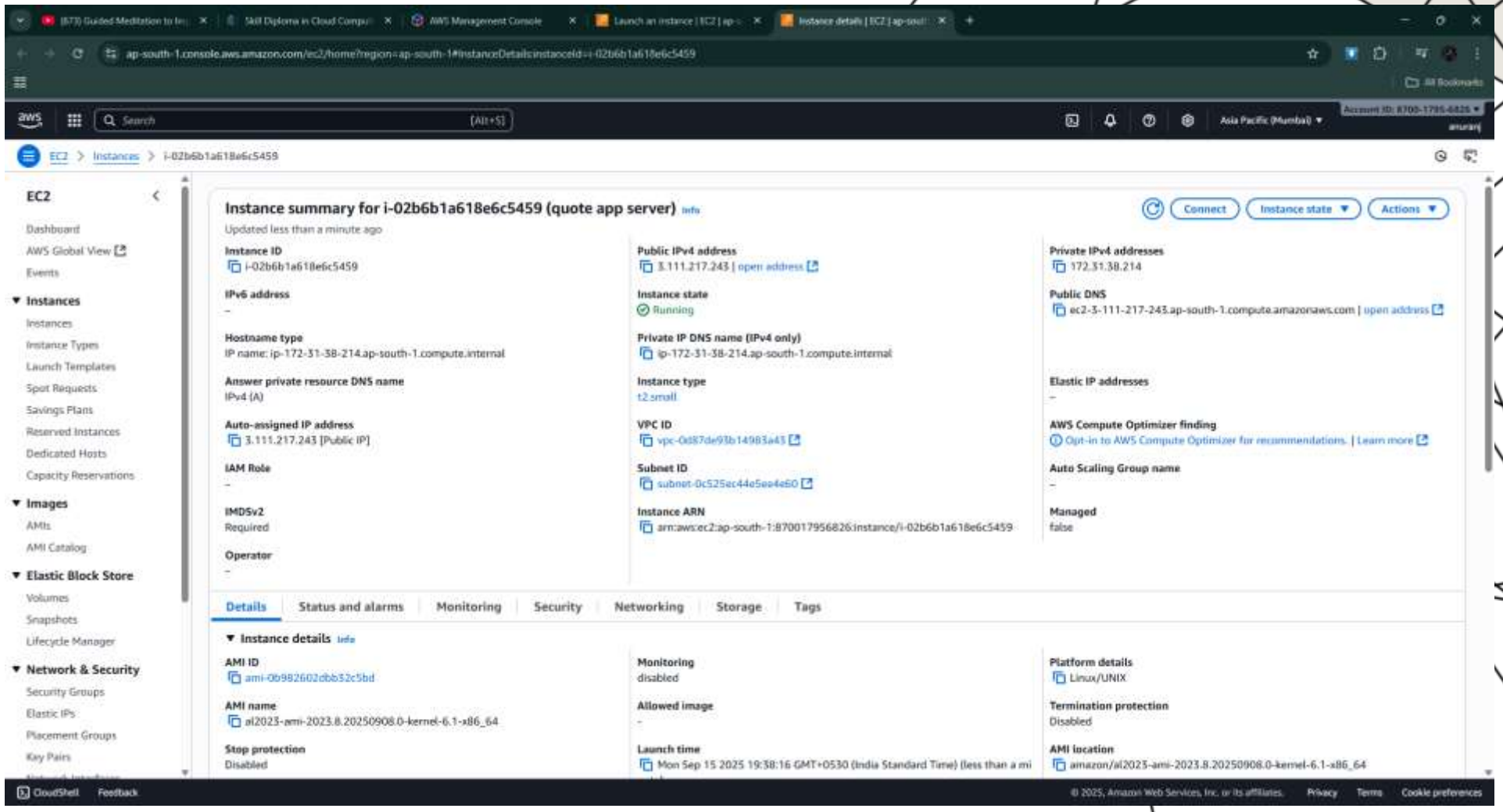
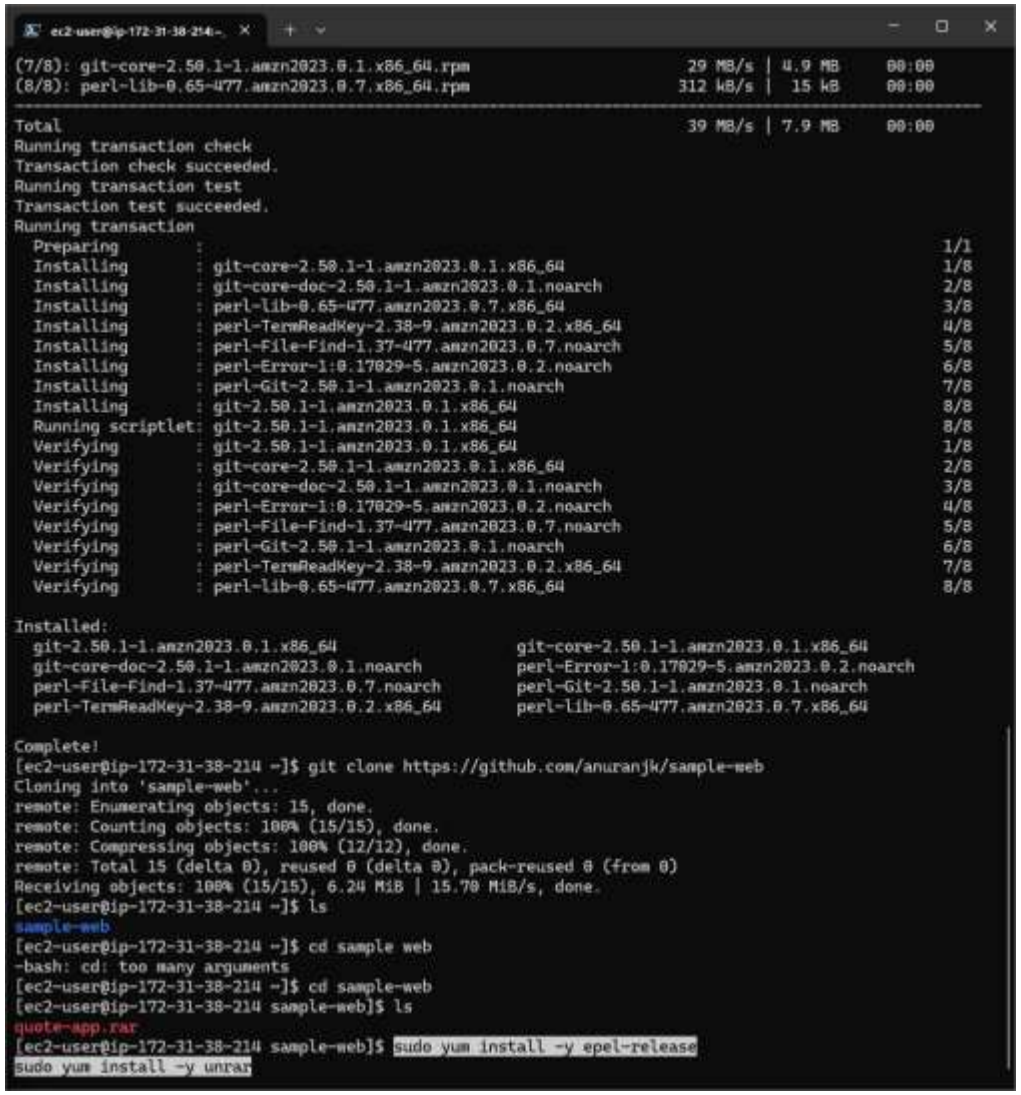
DEPLOY WEBSITE WITH DATABASE IN AWS

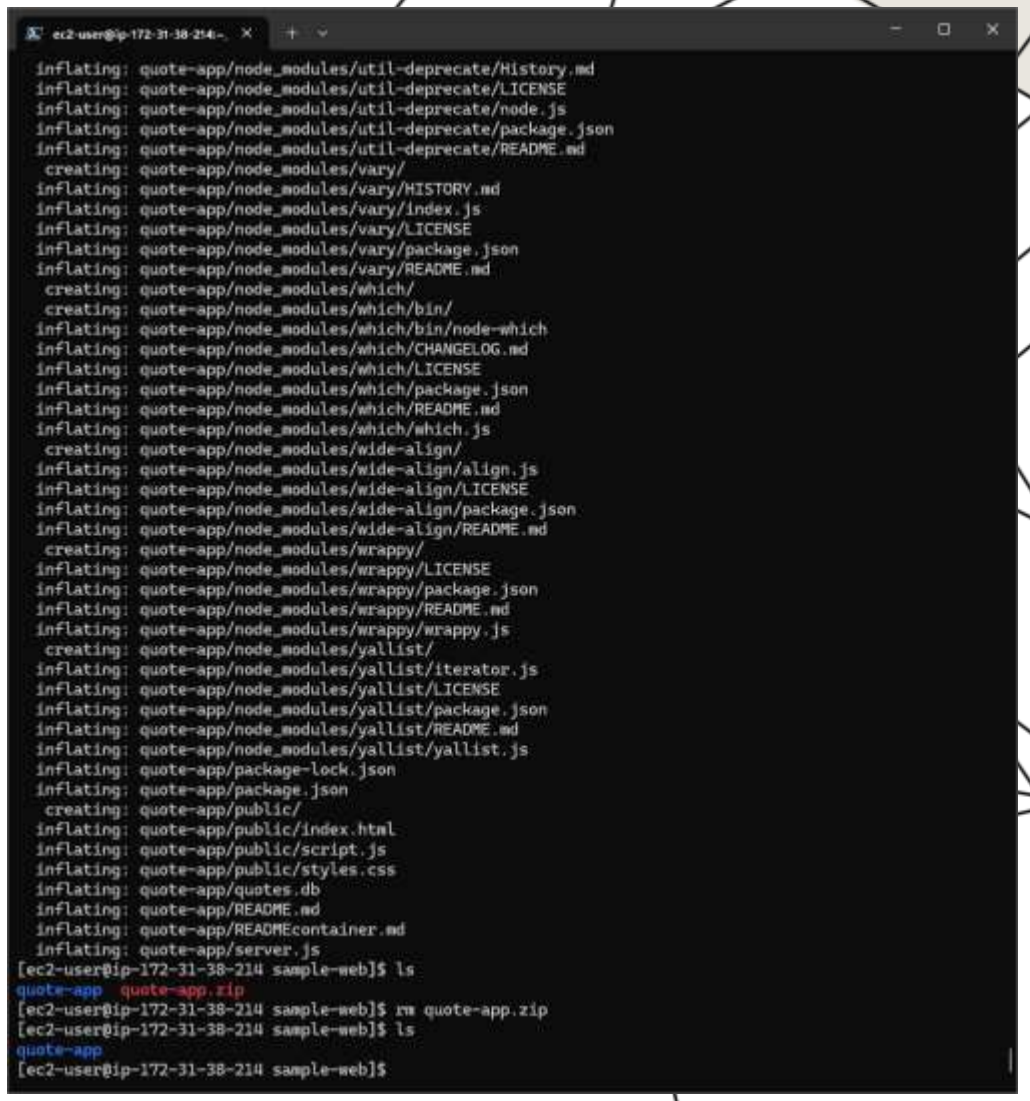
I started by creating an ec2 instance.i chose amazon linux for it



Then I logined into the server
Then I installed node.js and npm so inorder to install that properly I used nvm (node version manager. >sudo yum update -y
  > curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.39.1/install.sh | bash
Then I ran the script > . ~/.nvm/nvm.sh
Then I installed the most stable and latest version of node.js using this command > nvm install --lts

Then I tried cloning from my git repo but I faced some problems because the file was in rar file which cannot be extracted in amazon linux without addition tools but I main tools was no longer available for amazon linux so I uploaded a zip file of the source code and proceeded with it. I also find some problems while deleting the previous directory so this is the command I used > rmdir –rf dir_name



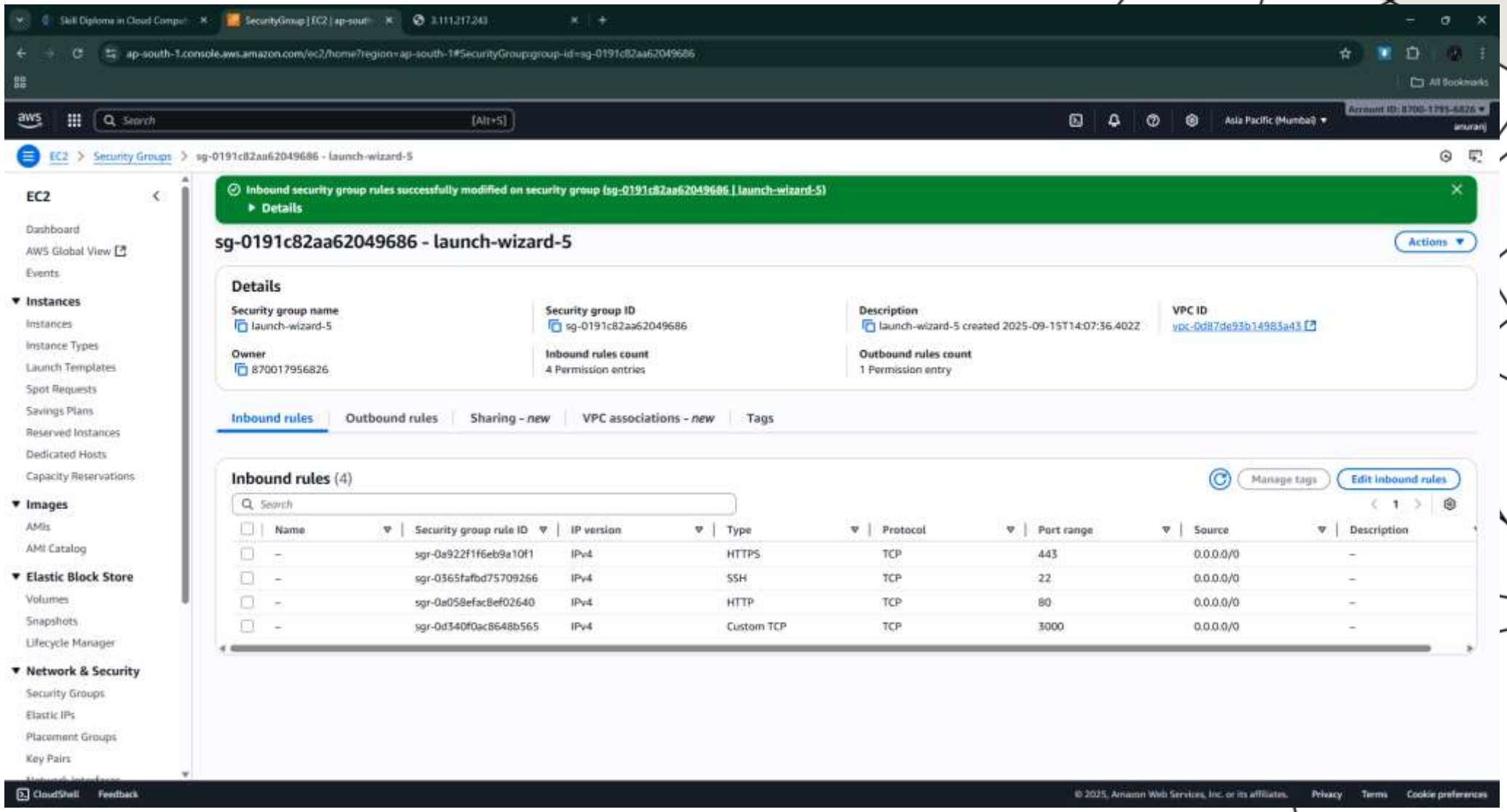


Then I navigated to the app folder and installed necessary npm packages(npm install) then I start the server but it failed because I was using the app which was built on another machine coping node_modules from another os breaks compatibility. So I fixed it by deleting the node_modules folder and packages-lock.json file and tried (npm install) again in the app folder then ran it (node server.js)

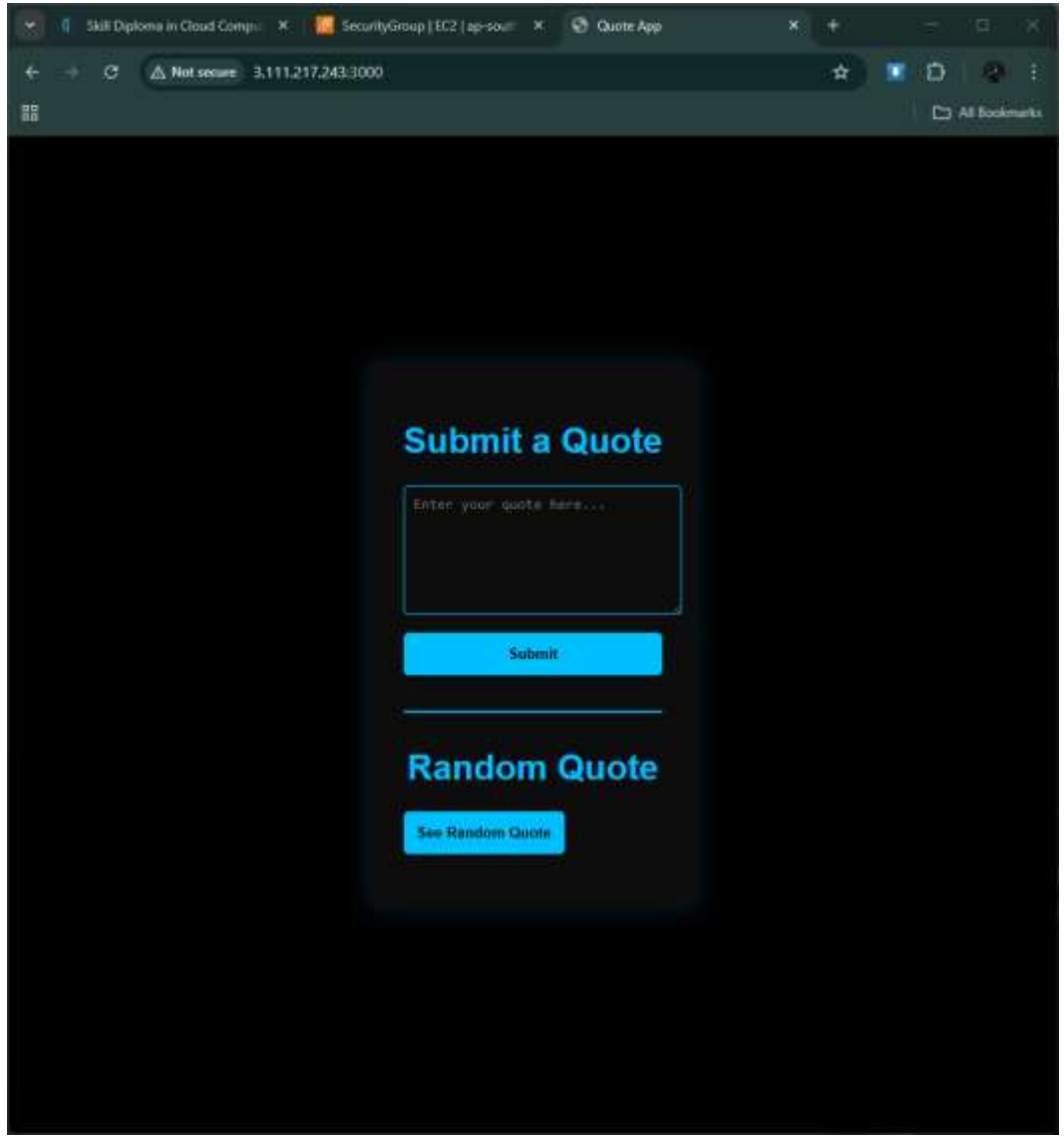
```
This "invalid ELF header" error almost always means that a native Node.js module (in this
case, sqlite3) was compiled for one operating system and architecture (like your Windows
machine) and then you tried to run it on another (Amazon Linux).


The node_modules folder contains compiled code that is specific to the system where npm
install was run. You can't just copy it from a Windows machine to a Linux machine and
expect it to work.


To fix this on your Amazon Linux server, you need to rebuild the sqlite3 module for the
correct environment. Here's what you should do on the server:


 1. Navigate to your project directory: cd /home/ec2-user/sample-web/quote-app
This will download and compile a version of sqlite3 that is compatible with Amazon Linux.
After that, node server.js should work correctly.
```

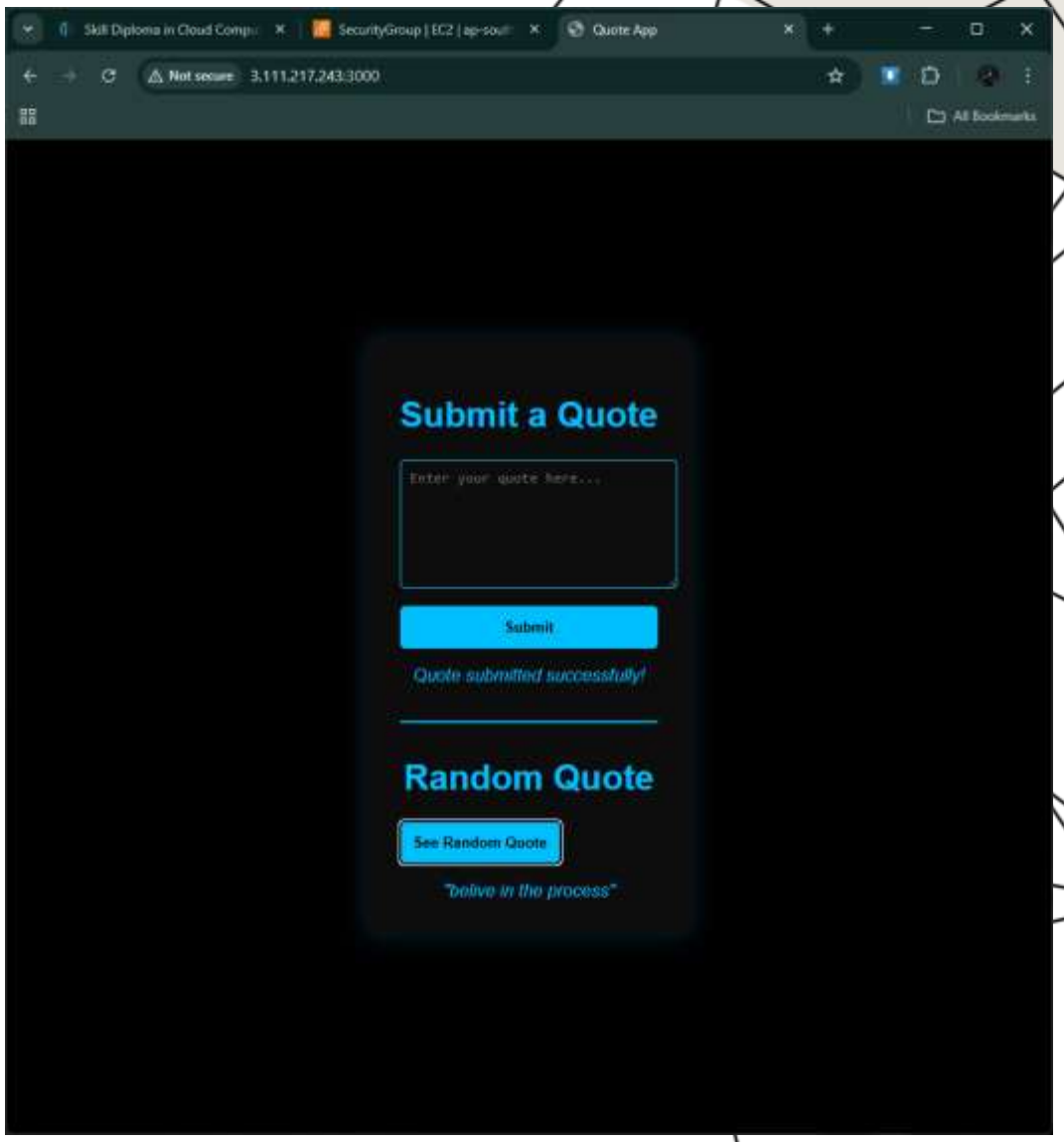
```
ec2-user@ip-172-31-38-214:~,   Gemini - quote-app

PS C:\Users\Anuranj K> ssh -i "C:\Users\Anuranj K\Downloads\ajportfolio.pem" ec2-user@ec2-3-111-217-24
3.ap-south-1.compute.amazonaws.com -y
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Mon Sep 15 14:43:54 2025 from 157.51.209.184
[ec2-user@ip-172-31-38-214 ~]$ ls
sample-web
[ec2-user@ip-172-31-38-214 ~]$ cd sample-app
-bash: cd: sample-app: No such file or directory
[ec2-user@ip-172-31-38-214 ~]$ cd sample-web
[ec2-user@ip-172-31-38-214 sample-web]$ ls
quote-app
[ec2-user@ip-172-31-38-214 sample-web]$ cd quote-app
[ec2-user@ip-172-31-38-214 quote-app]$ ls
README.md           node_modules       package.json  quotes.db
READMEcontainer.md  package-lock.json  public        server.js
[ec2-user@ip-172-31-38-214 quote-app]$ rm -rf node_modules
[ec2-user@ip-172-31-38-214 quote-app]$ ls
README.md  READMEcontainer.md  package-lock.json  package.json  public  quotes.db  server.js
[ec2-user@ip-172-31-38-214 quote-app]$ rm package-lock.json
[ec2-user@ip-172-31-38-214 quote-app]$ ls
README.md  READMEcontainer.md  package.json  public  quotes.db  server.js
[ec2-user@ip-172-31-38-214 quote-app]$ npm install
npm warn deprecated are-we-there-yet@3.0.1: This package is no longer supported.
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Che
ck out lru-cache if you want a good and tested way to coalesce async requests by a key value, which is
 much more comprehensive and powerful.
npm warn deprecated rimraf@3.0.2: Rimraf versions prior to v4 are no longer supported
npm warn deprecated npmlog@6.0.2: This package is no longer supported.
npm warn deprecated @npmcli/move-file@1.1.2: This functionality has been moved to @npmcli/fs
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated gauge@4.0.4: This package is no longer supported.

added 181 packages, and audited 182 packages in 12s

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

found 0 vulnerabilities
[ec2-user@ip-172-31-38-214 quote-app]$ node server.js
Server running at http://localhost:3000
Connected to the quotes database.
```

Then I tried accessing the website using its public ip address but it failed, it was because the node.js use to run the app In **port:3000** and the security group didn't allowed it so I changed it by adding a new inbound rule in sg.



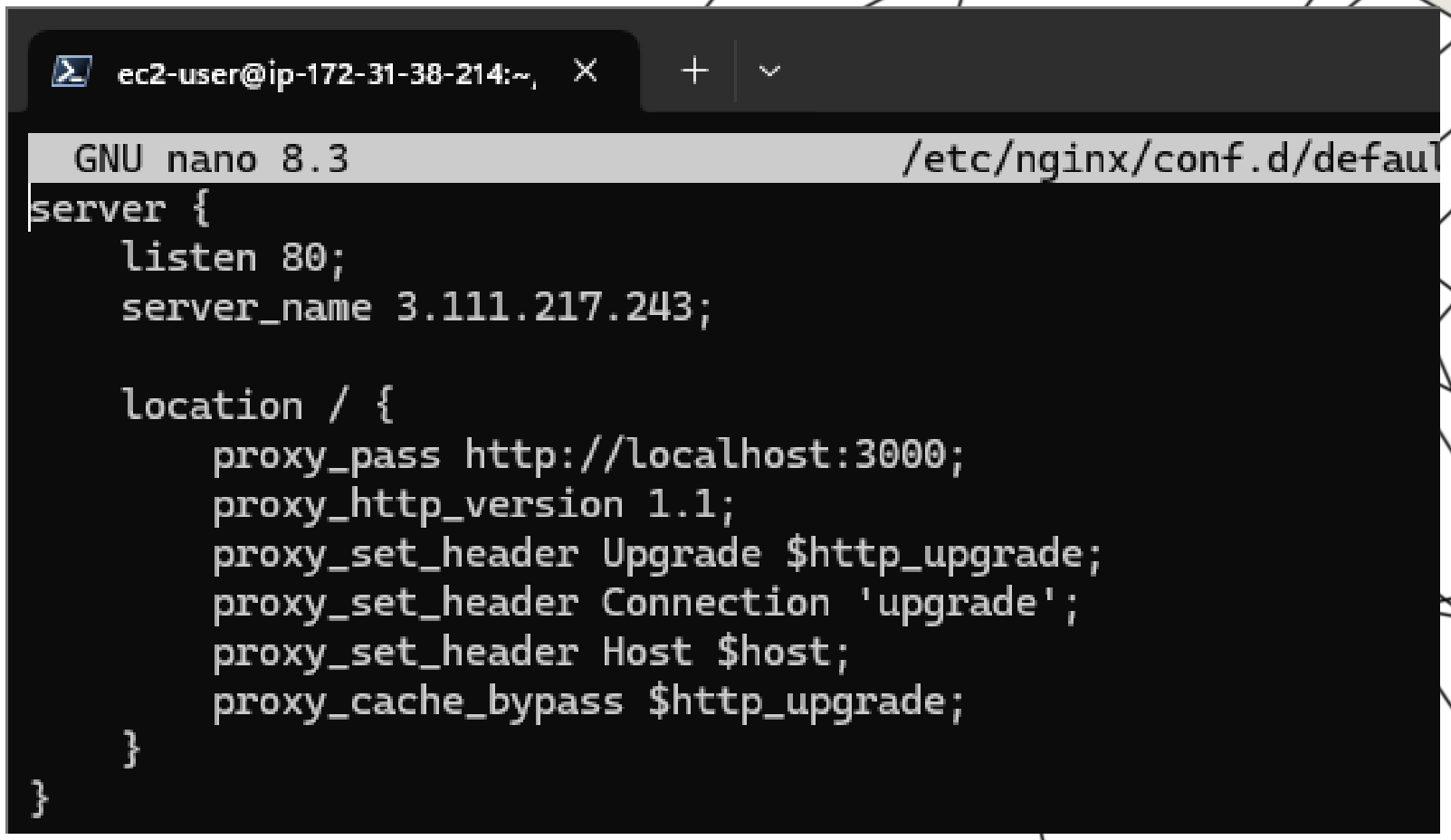
Now the website was accessible through port 3000. and I tested it by uploading some quotes and checking random quotes.



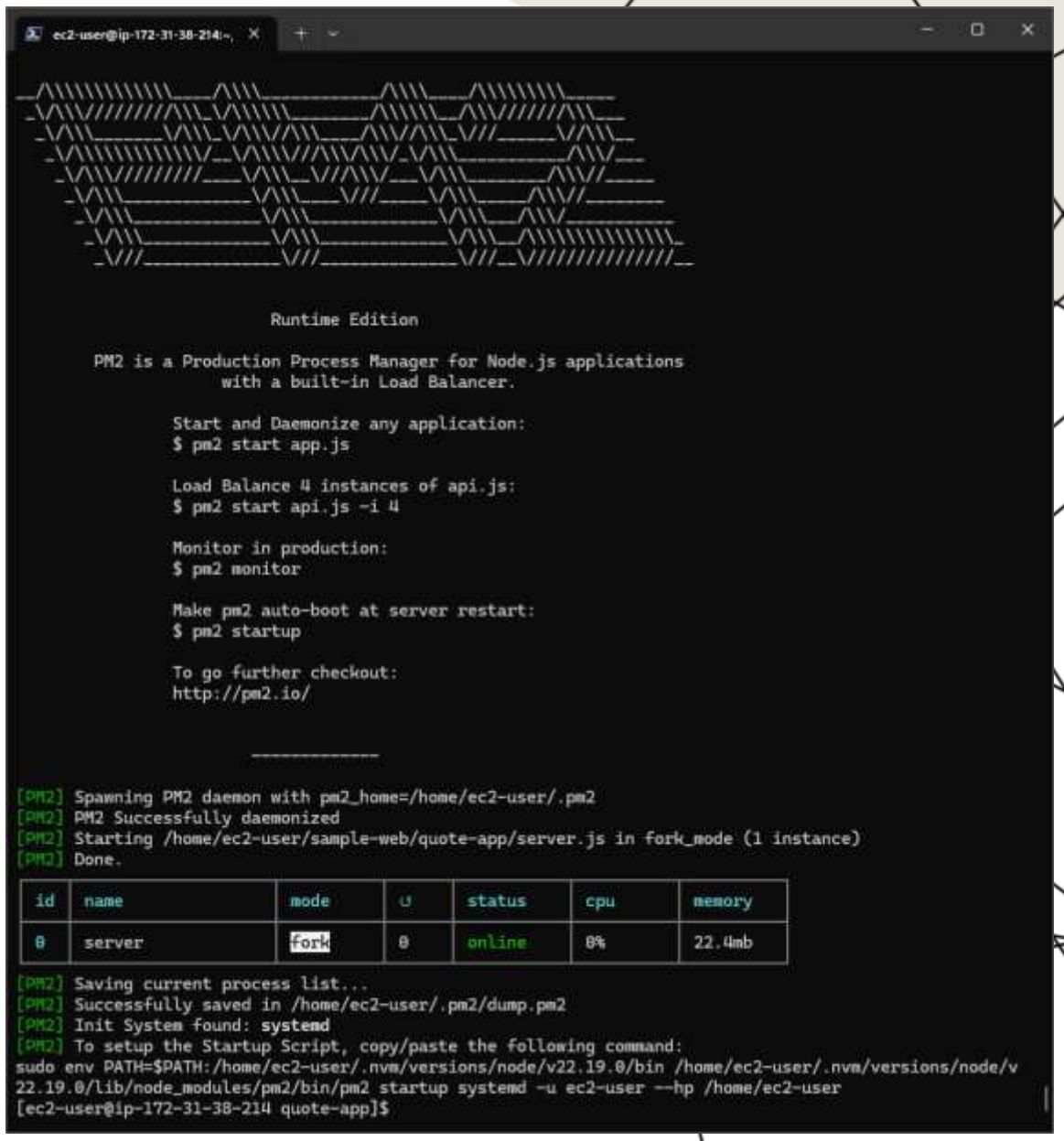


Now it was time to make the website accessible via port 80 so I installed nginx for it (**sudo yum install nginx –y**) and set up reverse proxy by configuring this file(**sudo nano /etc/nginx/conf.d/default.conf**) after saving the config estart nginx **(sudo systemctl restart ngnix**)

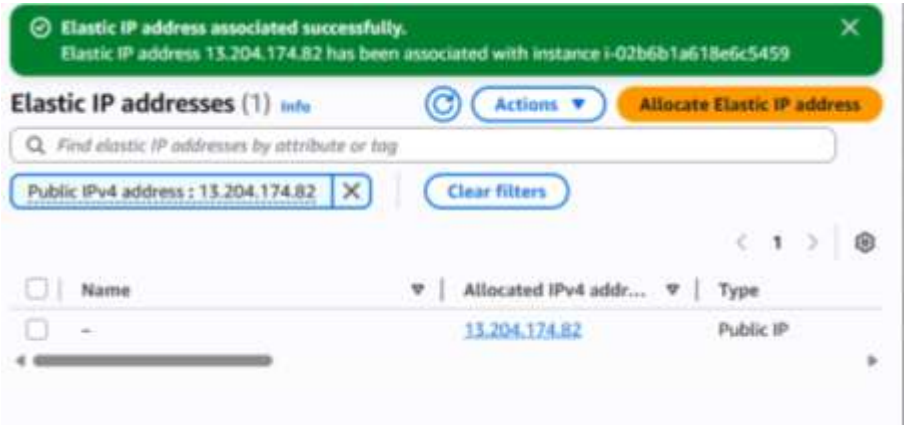
```
server {
    listen 80;
    server_name yourdomain.com
www.yourdomain.com;

    location / {
        proxy_pass
http://localhost:3000;
        proxy_http_version 1.1;
        proxy_set_header Upgrade
$http_upgrade;
        proxy_set_header Connection
'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass
$http_upgrade;
    }
}
```

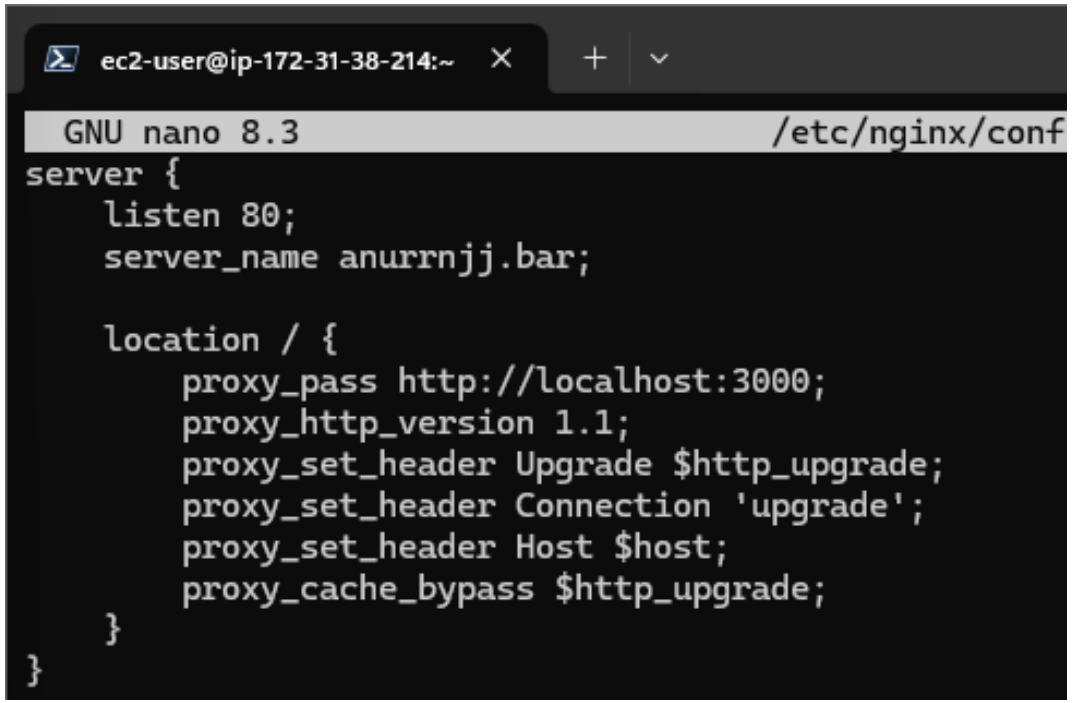



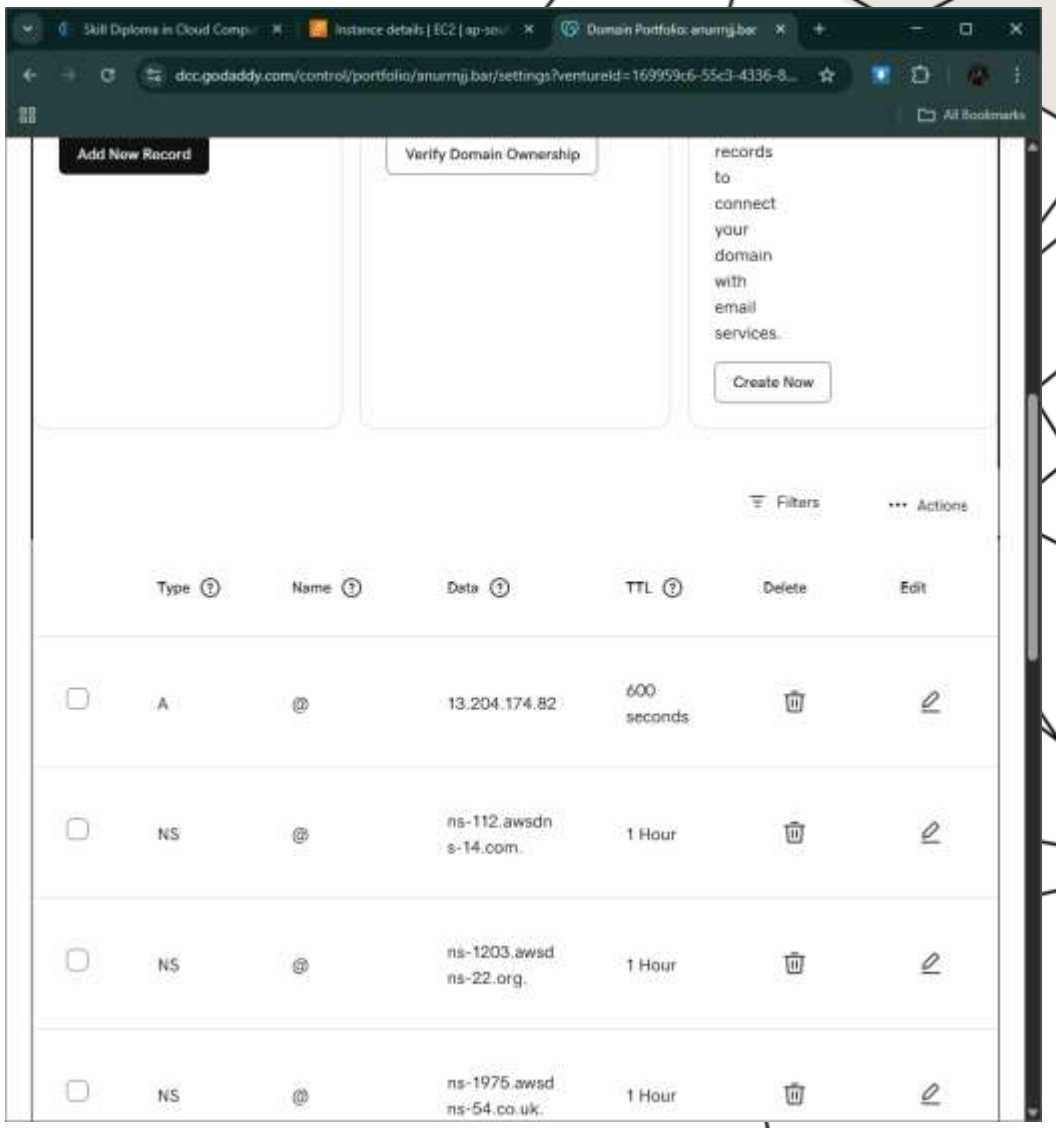
Then I installed process manager so that it can run efficiently and restart if fail. (**npm install pm2**)



Then I wanted to add a domain name for the website. First of all I allocated a elastip ip for my server then I changed the nginx config so that my new ip will work. Then I navigated to my already purchased domain and added an **A record .** Then the nginx config was again changed instead of giving ip I entered the domain name there.







To get access via https I need to assign it to a ssl certificate so I continued by installing certbort wich was free (**sudo yum install –y certbot python3-certbot-ngnix**). Then I ran the certbot to obtain and install the certificate. (**sudo certbot --nginx -d yourdomain.com**)