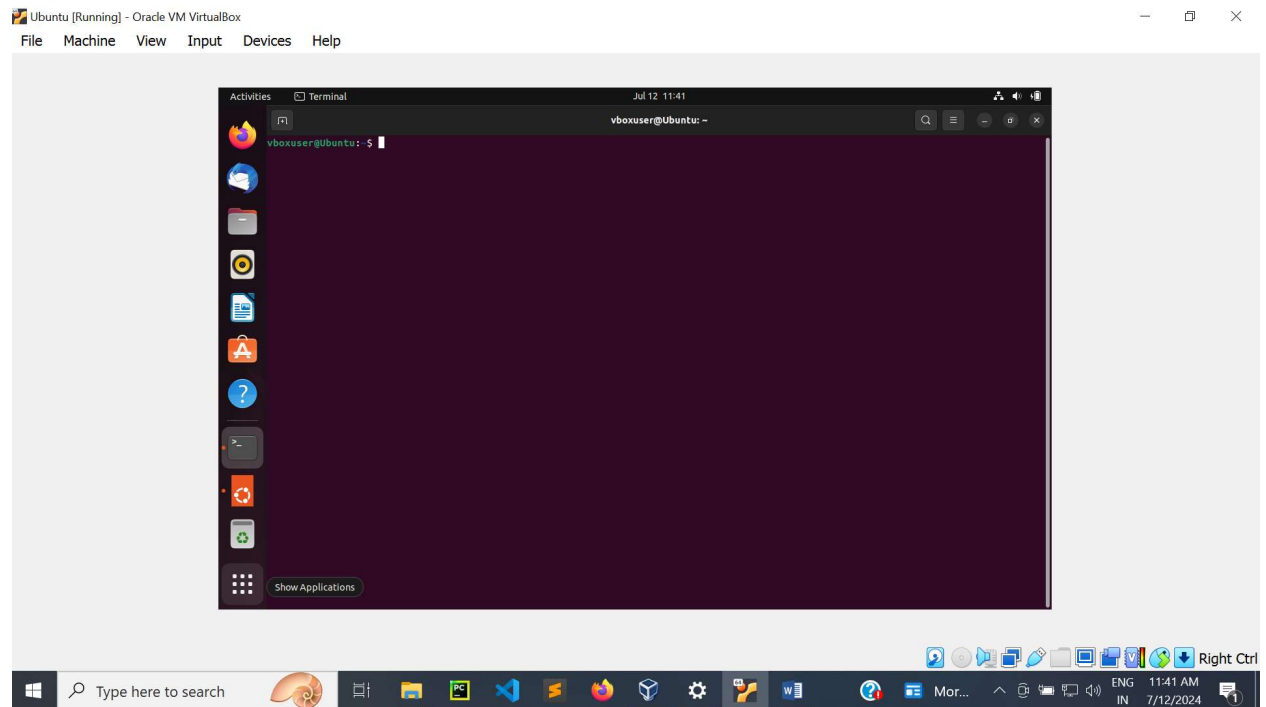


https://github.com/PranavPathak10/Pranav_W11_Graded-Assignment

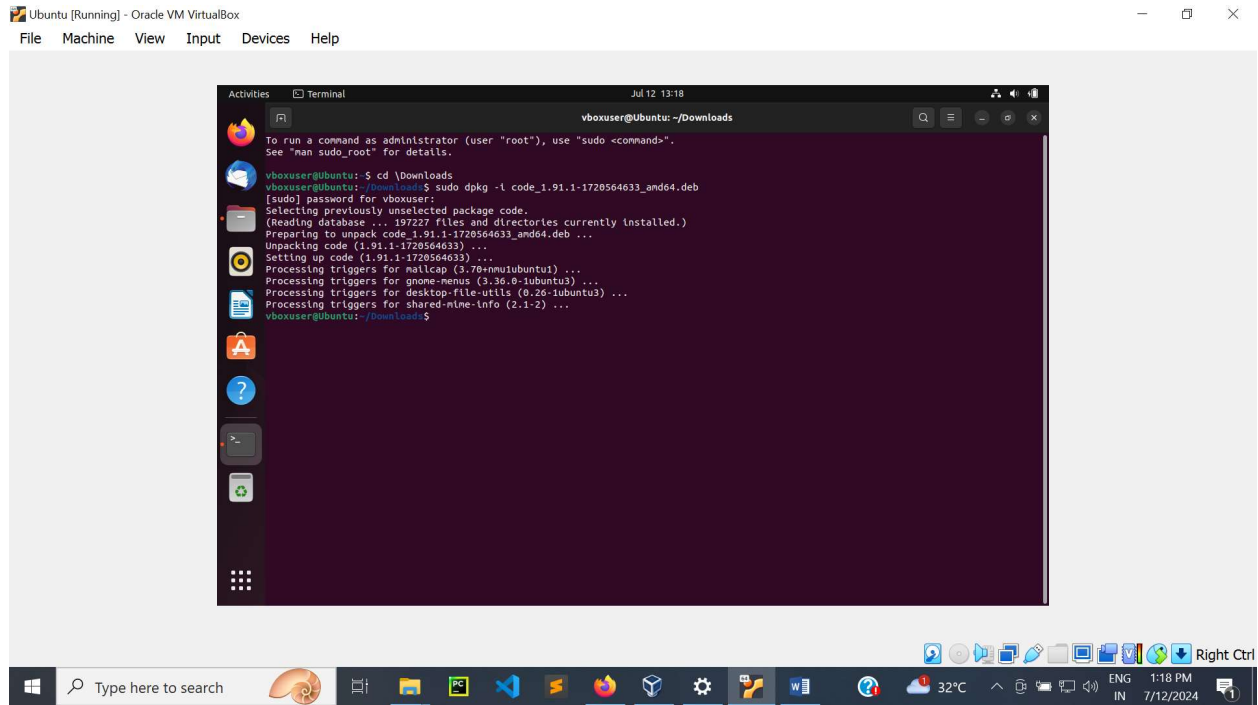
1. Hosting Ubuntu virtual machine using Oracle VM virtual box



2. Installation of Visual Studio code on ubuntu VM

After downloading the visual studio code, used the following command to install it on running Ubuntu

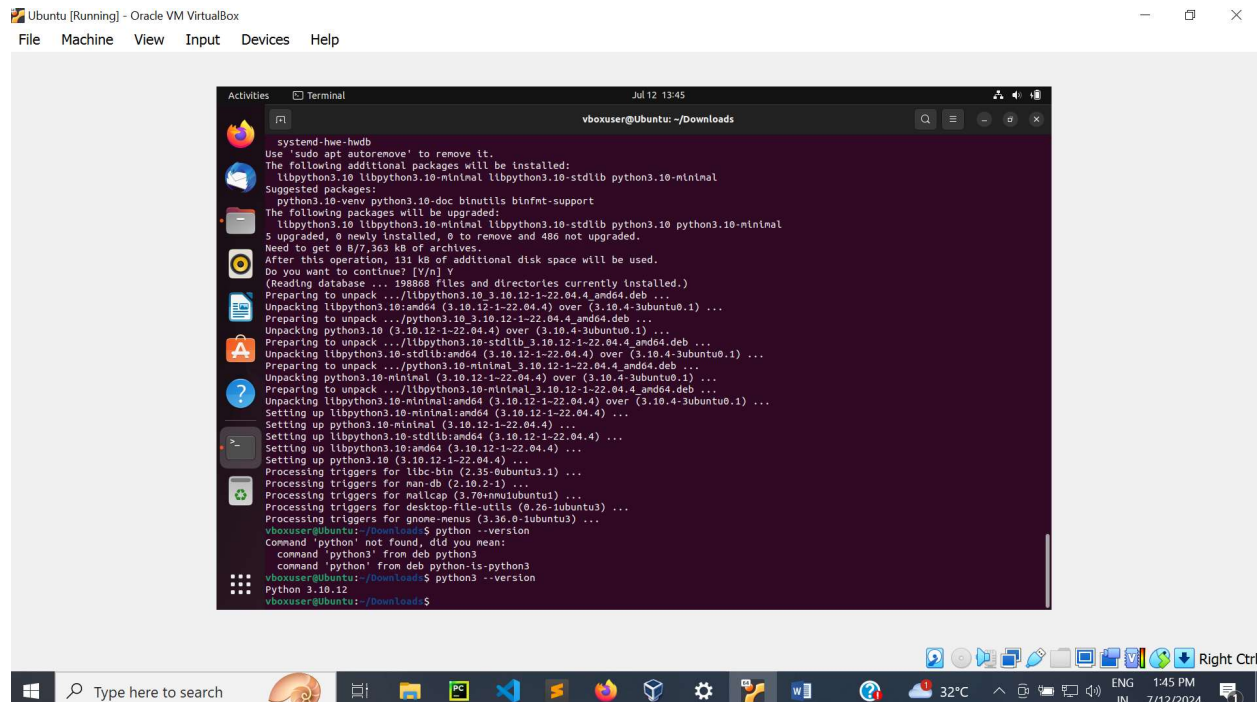
```
sudo dpkg -i code_1.91.2-1720564633_amd64.deb
```



3. Setting up Python

Commands used:

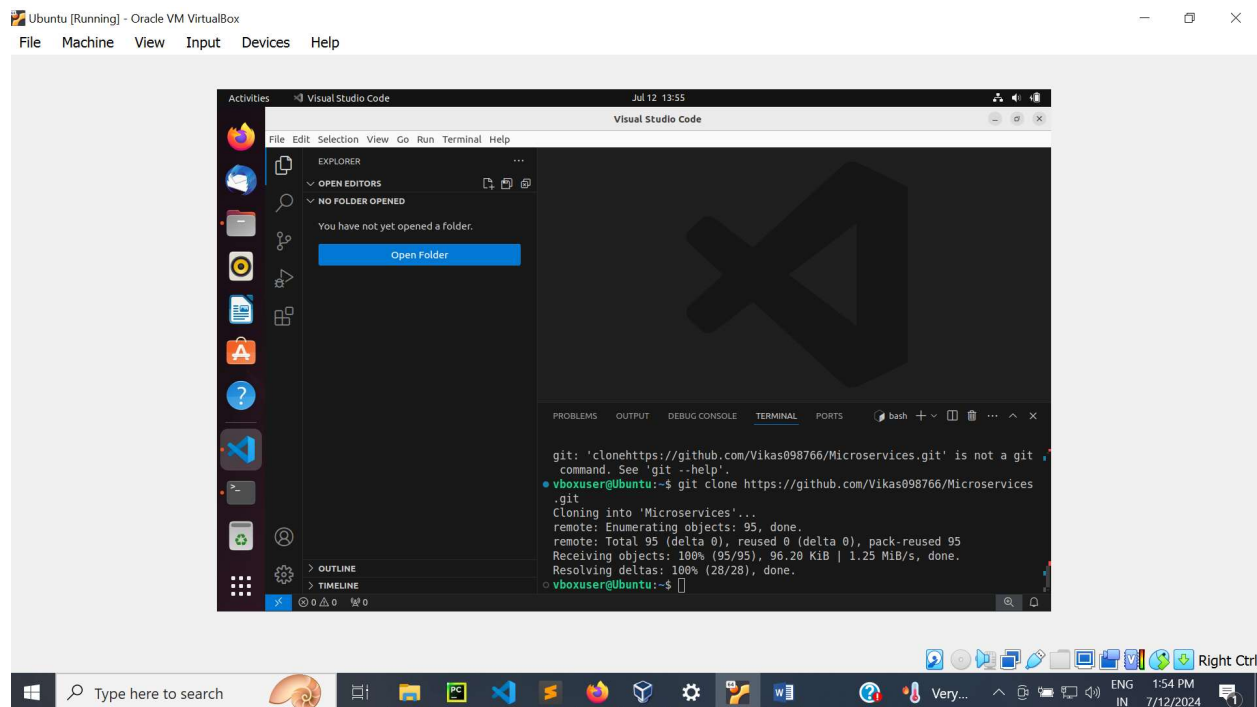
- o Command 1: `sudo apt update`
- o Command 2: `sudo apt install software-properties-common`
- o Command 3: `sudo add-apt-repository ppa:deadsnakes/ppa`
- o Command 4: `sudo apt install python3.9`



4. Clone the Git repository

Command used:

git clone <https://github.com/Vikas098766/Microservices.git>

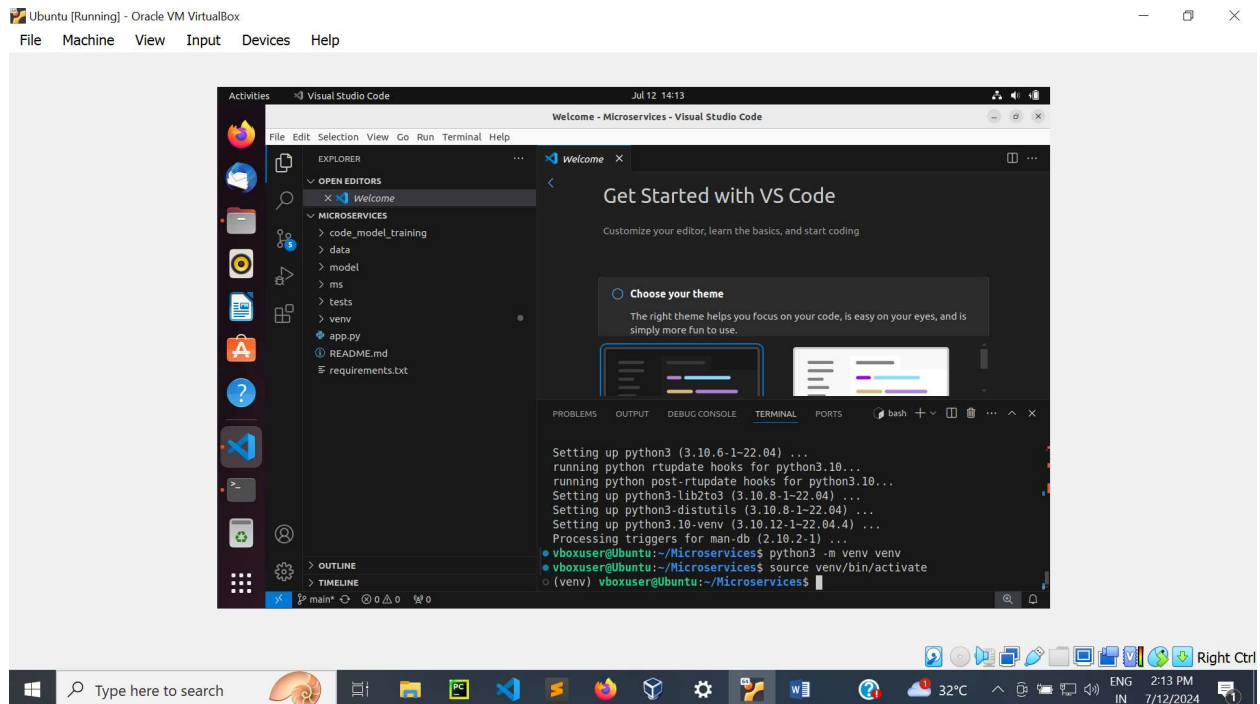


5. Creating virtual environment

Command used:

Command: `python3 -m venv venv`

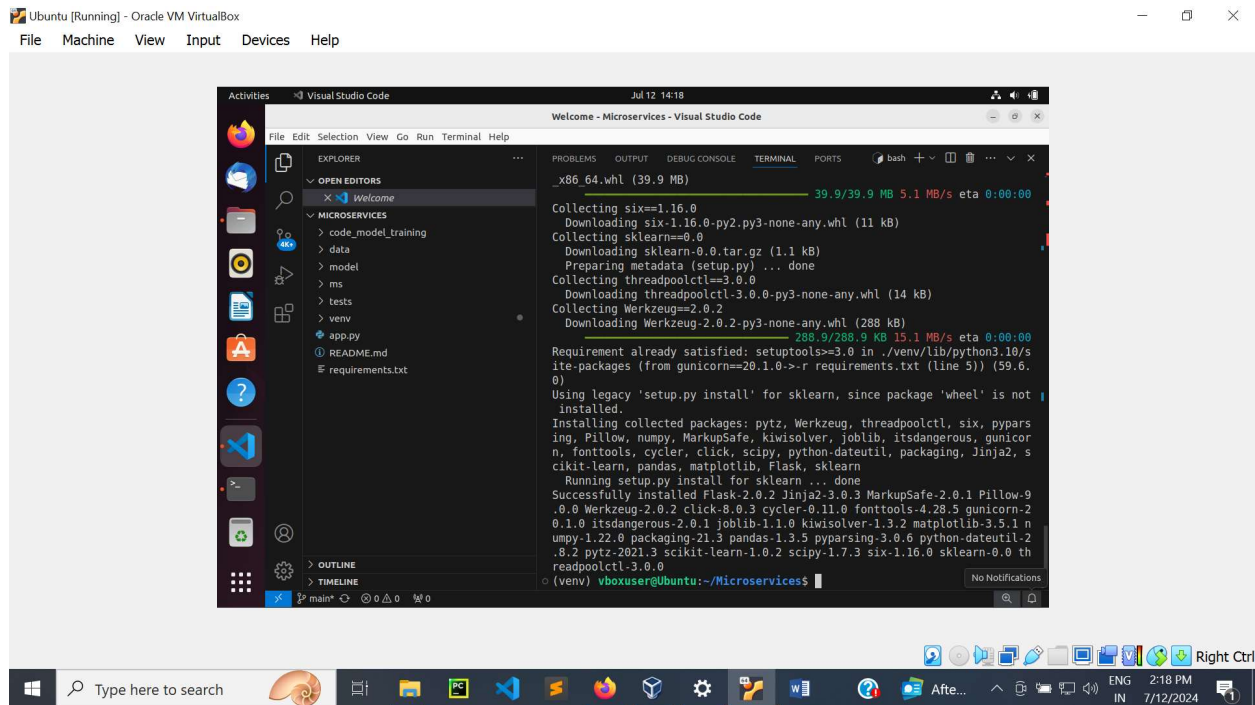
Command: `source venv/bin/activate`



6. Installing all dependencies from requirements.txt file

Command used:

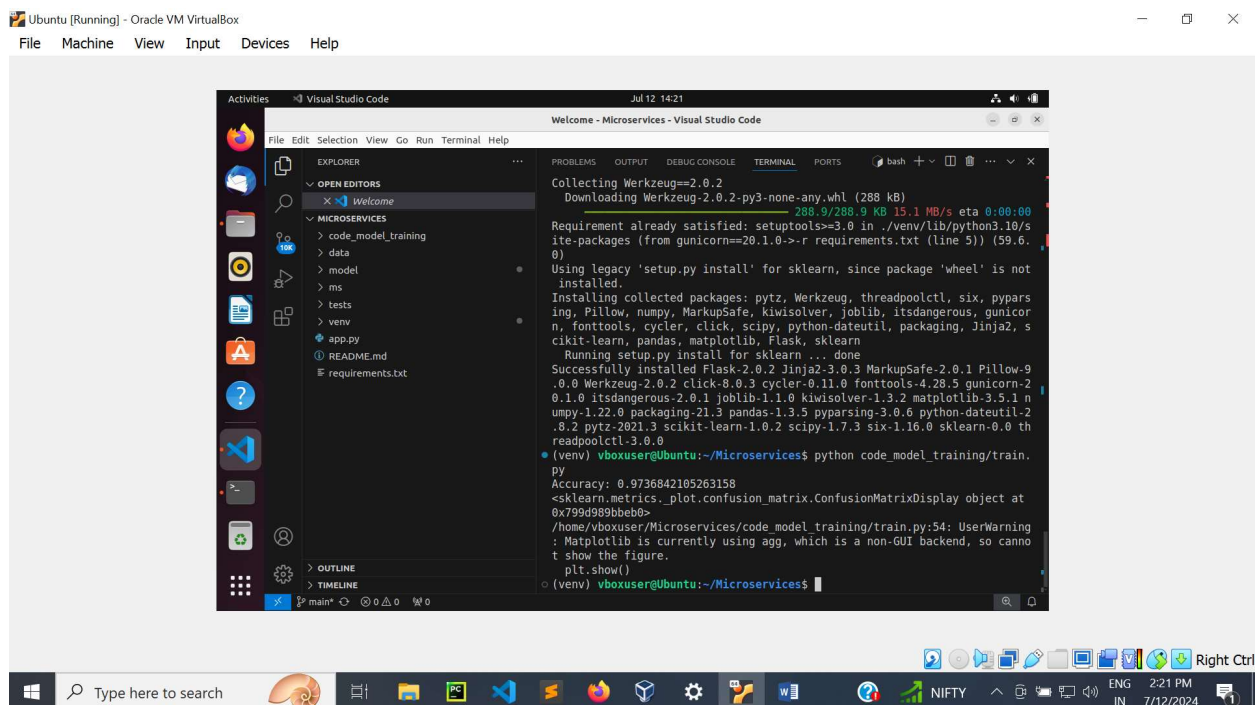
`pip install -r requirements.txt`



7. Training and saving the model:

Command used:

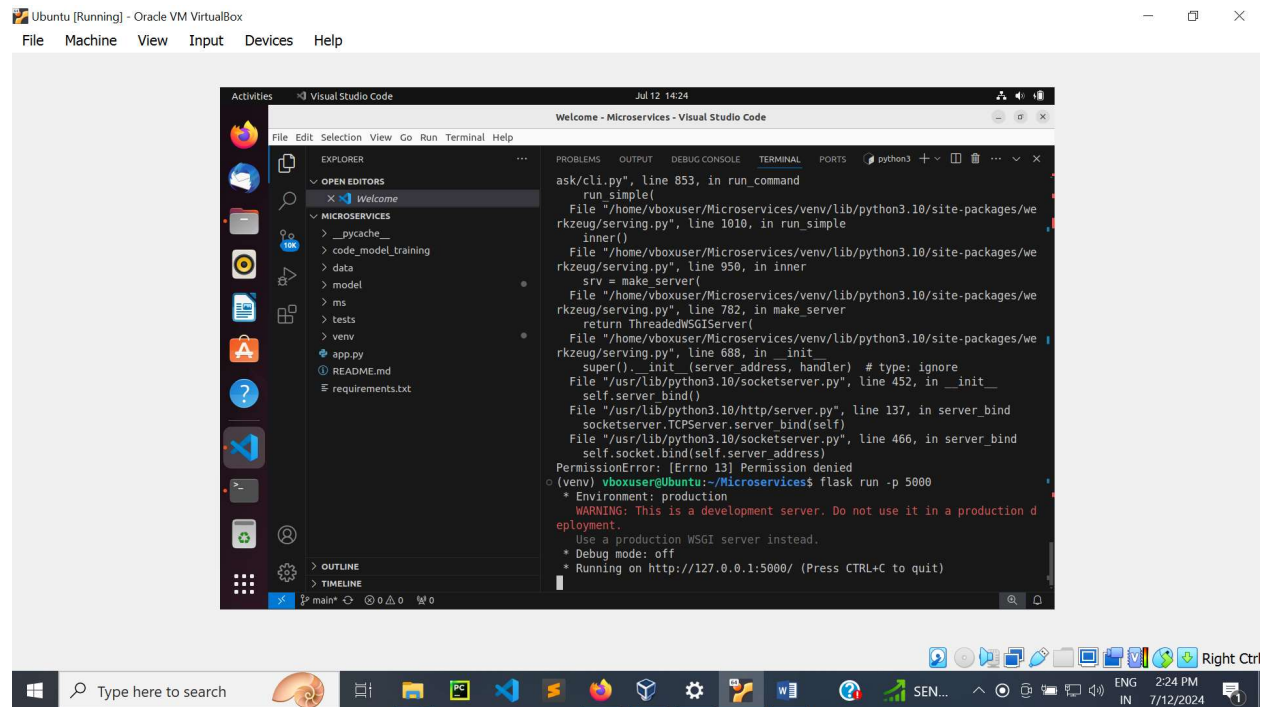
```
python code_model_training/train.py
```



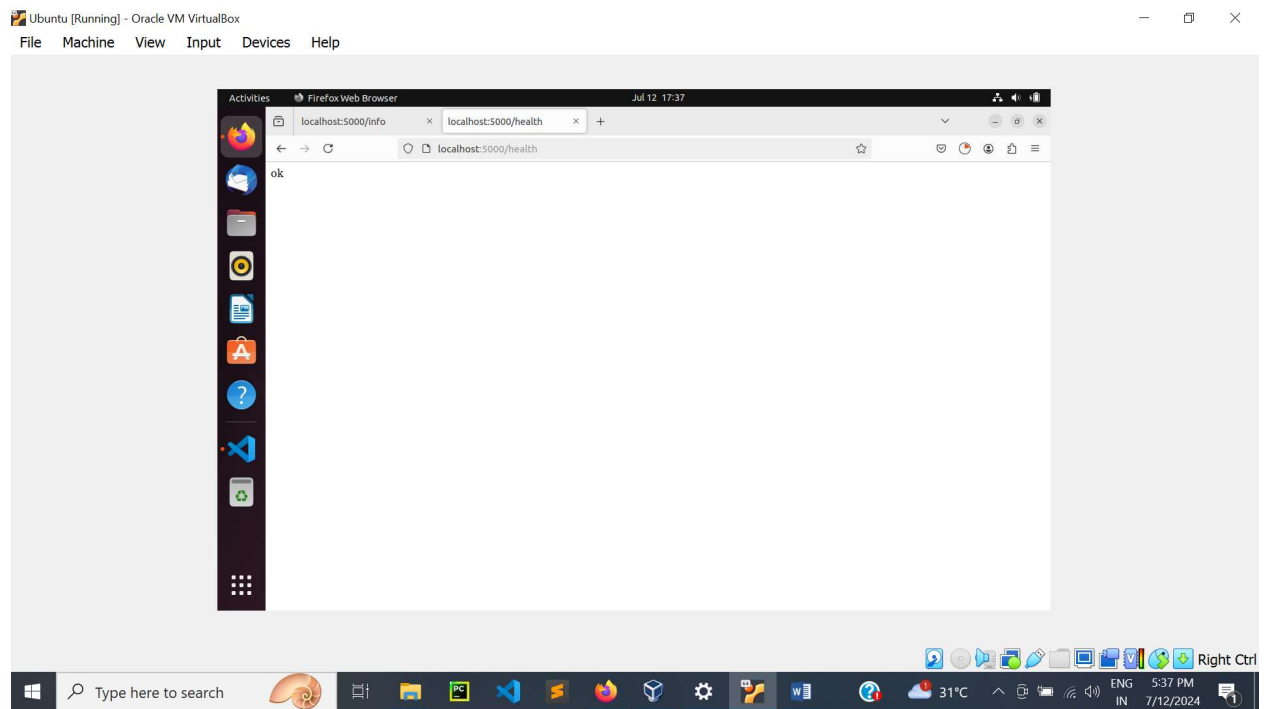
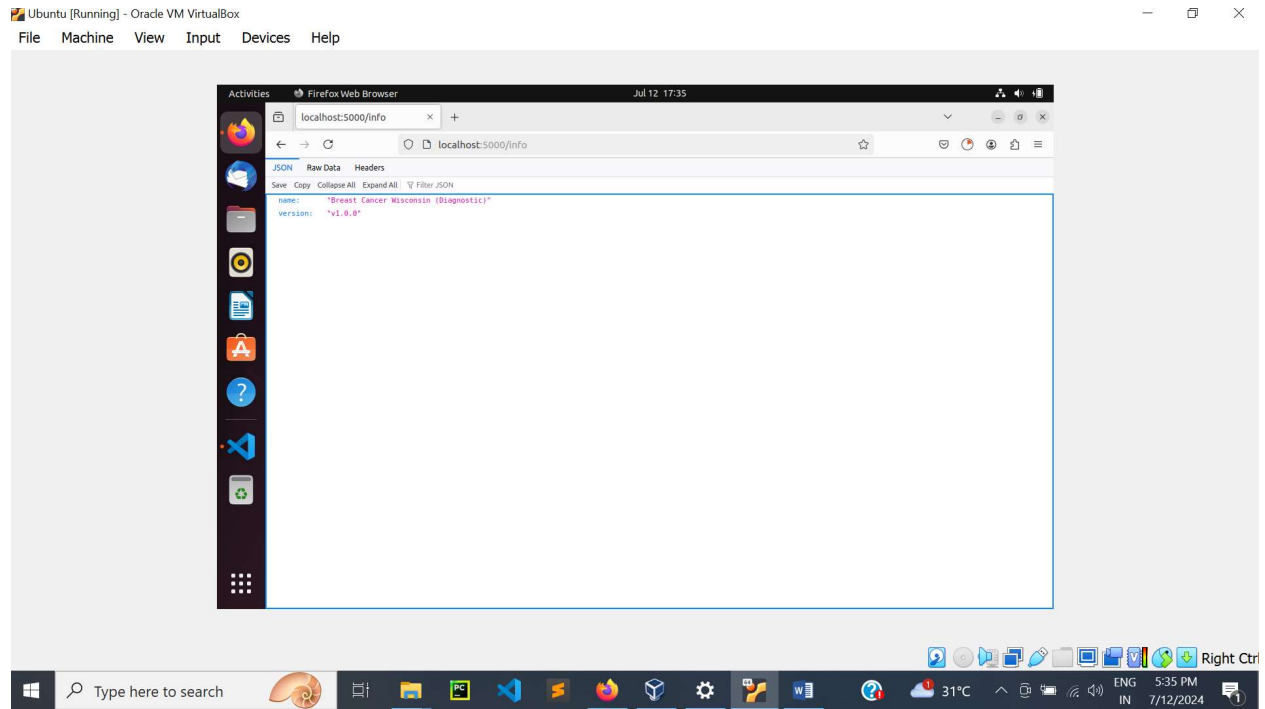
8. Testing the Flask web application:

Command:

```
flask run -p 5000
```



9. Testing the application:



10. Creating the docker image and running the containerized application

Docker file creation:

```
FROM python:3.8-slim
```

```
WORKDIR /app
```

```
COPY requirements.txt requirements.txt
```

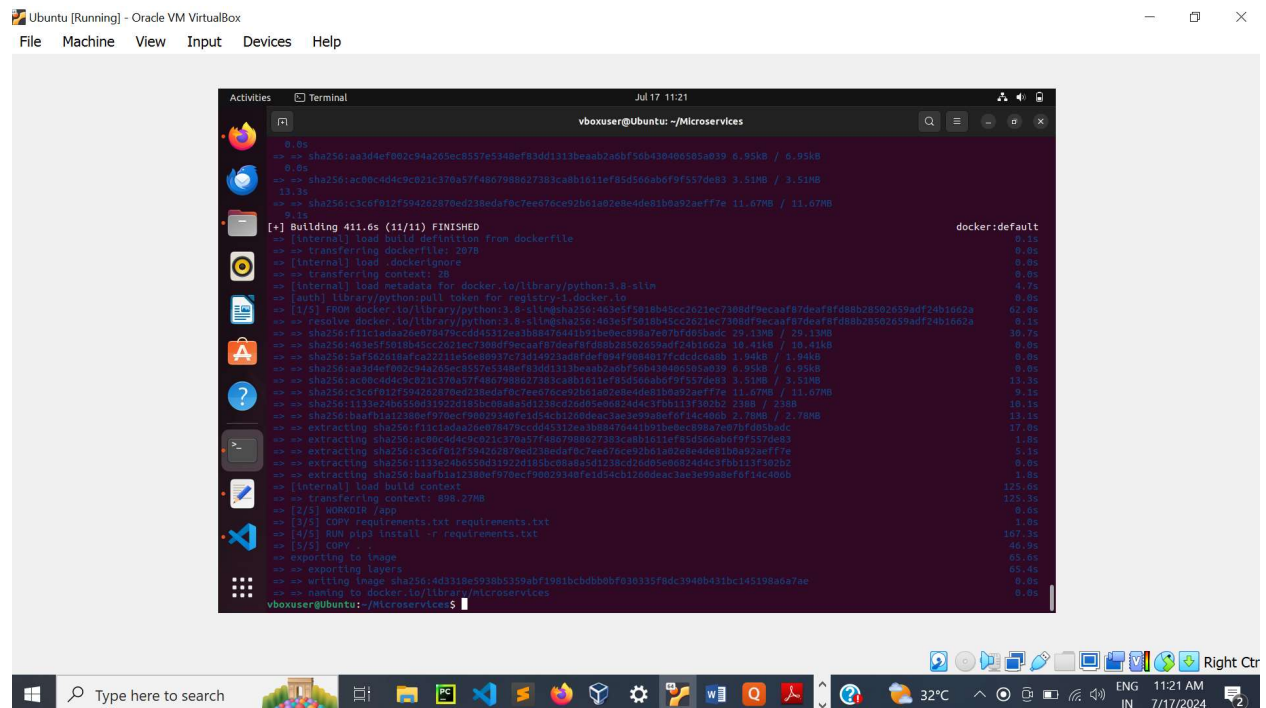
```
RUN pip3 install -r requirements.txt
```

```
COPY . .
```

```
EXPOSE 5000
```

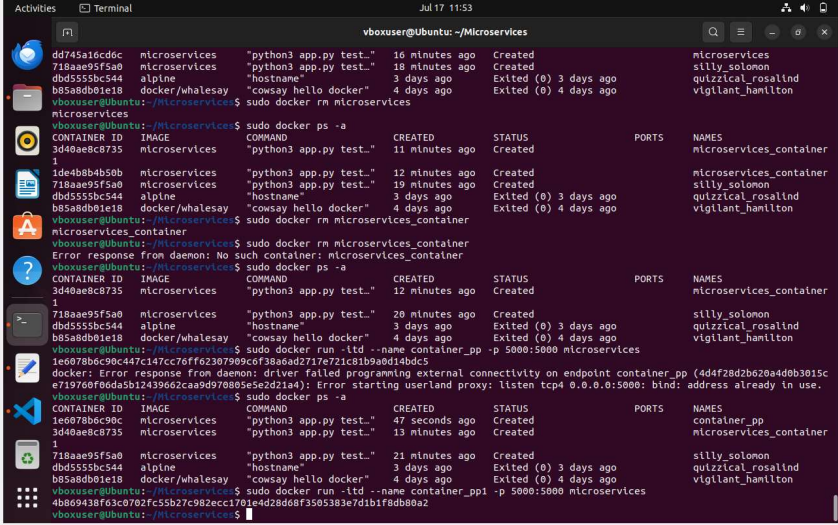
```
CMD ["python3", "app.py", "test.py"]
```

command used to build an image: **sudo docker build -t microservices .**



Running the containerized application:

Command used: `sudo docker run -itd --name container_pp1 -p 5000:5000 microservices`



```
vboxuser@Ubuntu: ~/Microservices
vboxuser@Ubuntu: ~/Microservices$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
3d40ae8c8735        microservices      "python3 app.py test..." 11 minutes ago      Created             microservices_container
1de4b8b4b50b        microservices      "python3 app.py test..." 12 minutes ago      Created             microservices_container
718aae95f5a0        microservices      "python3 app.py test..." 19 minutes ago      Created             silly_solomon
dbd5555bc544        alpine             "hostname"           3 days ago          Exited (0) 3 days ago      quizzical_rosalind
b85a8db0e1e8        docker/whalesay    "cowsay hello docker" 4 days ago          Exited (0) 4 days ago      vigilant_hamilton
vboxuser@Ubuntu: ~/Microservices$ sudo docker run -itd --name container_pp1 -p 5000:5000 microservices
Error response from daemon: driver failed programming external connectivity on endpoint container_pp (4d4f28d2b628a44db3015ce719760f86d5b12439662ca9d978b95e52d21a4): Error starting userland proxy: listen tcp4 0.0.0.0:5000: bind: address already in use.
vboxuser@Ubuntu: ~/Microservices$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
3d40ae8c8735        microservices      "python3 app.py test..." 13 minutes ago      Created             microservices_container
718aae95f5a0        microservices      "python3 app.py test..." 21 minutes ago      Created             silly_solomon
dbd5555bc544        alpine             "hostname"           3 days ago          Exited (0) 3 days ago      quizzical_rosalind
b85a8db0e1e8        docker/whalesay    "cowsay hello docker" 4 days ago          Exited (0) 4 days ago      vigilant_hamilton
vboxuser@Ubuntu: ~/Microservices$ sudo docker run -itd --name container_pp1 -p 5000:5000 microservices
4b8e9438f63c0702fc55b27c982ecc1701e4d28d68f3505383e7d1b1f8db0a2
vboxuser@Ubuntu: ~/Microservices$
```

command used : `curl -X GET http://localhost:5000/info`

`curl -X GET http://localhost:5000/health`

```
Activities Terminal Jul 17 12:03
vboxuser@Ubuntu: ~/Microservices

docker: Error response from daemon: driver failed programming external connectivity on endpoint container_pp (4d4f28d2b620a4db3015c
e719760f06da5b12439662caa9d970805e5e2d21a4): Error starting userland proxy: listen tcp4 0.0.0.0:5000: bind: address already in use.
vboxuser@Ubuntu: ~/Microservices$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED            STATUS              PORTS              NAMES
1e6078b6c98c        microservices      "python3 app.py test..." 47 seconds ago    Created                        container_pp
3d40ae8c8735        microservices      "python3 app.py test..." 13 minutes ago    Created                        microservices_container
1
718aae95f5a0        microservices      "python3 app.py test..." 21 minutes ago    Created                        silly_solomon
dbd555b5c544        alpine             "hostname"                3 days ago        Exited (0) 3 days ago    quizzical_rosalind
b85a8db01e18        docker/whalesay    "cowsay hello docker"     4 days ago        Exited (0) 4 days ago    vigilant_hamilton
vboxuser@Ubuntu: ~/Microservices$ sudo docker run -ltd --name container_pp1 -p 5000:5000 microservices
4b869438f63c0702f55b27c982ecc1701e4d28d68f3505383e7db1f8db0a2
vboxuser@Ubuntu: ~/Microservices$ curl -X GET http://localhost:5000/info
Command 'curl' not found, but can be installed with:
sudo snap install curl # version 8.1.2, or
sudo apt install curl # version 7.81.0-1ubuntu1.16
See 'snap info curl' for additional versions.
vboxuser@Ubuntu: ~/Microservices$ sudo apt install curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 279 not upgraded.
Need to get 194 kB of archives.
After this operation, 454 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.16 [194 kB]
Fetched 194 kB in 4s (52.3 kB/s)
Selecting previously unselected package curl.
(Reading database ... 200494 files and directories currently installed.)
Preparing to unpack .../curl.7.81.0-1ubuntu1.16.amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.16) ...
Setting up curl (7.81.0-1ubuntu1.16) ...
Processing triggers for man-db (2.10.2-1) ...
vboxuser@Ubuntu: ~/Microservices$ curl -X GET http://localhost:5000/info
{"name":"Breast Cancer Wtscnstin (Diagnostic)","version":"v1.0.0"}
vboxuser@Ubuntu: ~/Microservices$
```

```
Activities Terminal Jul 17 12:06
vboxuser@Ubuntu: ~/Microservices

e719760f06da5b12439662caa9d970805e5e2d21a4): Error starting userland proxy: listen tcp4 0.0.0.0:5000: bind: address already in use.
vboxuser@Ubuntu: ~/Microservices$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED            STATUS              PORTS              NAMES
1e6078b6c98c        microservices      "python3 app.py test..." 47 seconds ago    Created                        container_pp
3d40ae8c8735        microservices      "python3 app.py test..." 13 minutes ago    Created                        microservices_container
1
718aae95f5a0        microservices      "python3 app.py test..." 21 minutes ago    Created                        silly_solomon
dbd555b5c544        alpine             "hostname"                3 days ago        Exited (0) 3 days ago    quizzical_rosalind
b85a8db01e18        docker/whalesay    "cowsay hello docker"     4 days ago        Exited (0) 4 days ago    vigilant_hamilton
vboxuser@Ubuntu: ~/Microservices$ sudo docker run -ltd --name container_pp1 -p 5000:5000 microservices
4b869438f63c0702f55b27c982ecc1701e4d28d68f3505383e7db1f8db0a2
vboxuser@Ubuntu: ~/Microservices$ curl -X GET http://localhost:5000/info
Command 'curl' not found, but can be installed with:
sudo snap install curl # version 8.1.2, or
sudo apt install curl # version 7.81.0-1ubuntu1.16
See 'snap info curl' for additional versions.
vboxuser@Ubuntu: ~/Microservices$ sudo apt install curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 279 not upgraded.
Need to get 194 kB of archives.
After this operation, 454 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.16 [194 kB]
Fetched 194 kB in 4s (52.3 kB/s)
Selecting previously unselected package curl.
(Reading database ... 200494 files and directories currently installed.)
Preparing to unpack .../curl.7.81.0-1ubuntu1.16.amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.16) ...
Setting up curl (7.81.0-1ubuntu1.16) ...
Processing triggers for man-db (2.10.2-1) ...
vboxuser@Ubuntu: ~/Microservices$ curl -X GET http://localhost:5000/info
{"name":"Breast Cancer Wtscnstin (Diagnostic)","version":"v1.0.0"}
vboxuser@Ubuntu: ~/Microservices$ curl -X GET http://localhost:5000/health
ok
vboxuser@Ubuntu: ~/Microservices$
```

```
Activities Terminal Jul 17 12:10
vboxuser@Ubuntu: ~/Microservices
4b069430fe3c0702fc55b27c982ecc1701e4d28d68f3505303e7d1b1f0db80a2
vboxuser@Ubuntu:~/Microservices$ curl -X GET http://localhost:5000/info
Command 'curl' not found, but can be installed with:
sudo snap install curl # version 8.1.2, or
sudo apt install curl # version 7.81.0-1ubuntu1.16
See 'snap info curl' for additional versions.
vboxuser@Ubuntu:~/Microservices$ sudo apt install curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 279 not upgraded.
Need to get 194 kB of archives.
After this operation, 454 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.16 [194 kB]
Fetched 194 kB in 4s (52.3 kB/s)
Selecting previously unselected package curl.
(Reading database ... 200494 files and directories currently installed.)
Preparing to unpack ../curl-7.81.0-1ubuntu1.16_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.16) ...
Setting up curl (7.81.0-1ubuntu1.16) ...
Processing triggers for man-db (2.10.2-1) ...
vboxuser@Ubuntu:~/Microservices$ curl -X GET http://localhost:5000/info
{"name":"Breast Cancer WISconsin (Diagnostic)","version":"v1.0.0"}
vboxuser@Ubuntu:~/Microservices$ curl -X GET http://localhost:5000/health
ok
vboxuser@Ubuntu:~/Microservices$ curl -d '{"radius_mean": 17.99, "texture_mean": 10.38, "perimeter_mean": 122.0, "area_mean": 1001.0, "smoothness_mean": 0.1184, "compactness_mean": 0.2776, "concavity_mean": 0.3001, "concave points_mean": 0.1471, "symmetry_mean": 0.2419, "fractal dimension mean": 0.07871, "radius_se": 1.095, "texture_se": 0.9053, "perimeter_se": 8.589, "area_se": 153.4, "smoothness_se": 0.006399, "compactness_se": 0.04904, "concavity_se": 0.05373, "concave points_se": 0.01587, "symmetry_se": 0.03003, "fractal dimension_se": 0.006193, "radius_worst": 25.38, "texture_worst": 17.33, "perimeter_worst": 184.6, "area_worst": 2019.0, "smoothness_worst": 0.1022, "compactness_worst": 0.0656, "concavity_worst": 0.7119, "concave points_worst": 0.2654, "symmetry_worst": 0.4601, "fractal dimension_worst": 0.1189}' -H "content-type: application/json" -X POST http://0.0.0.0:5000/predict
{"label":"M", "prediction":1, "status":200}
vboxuser@Ubuntu:~/Microservices$
```