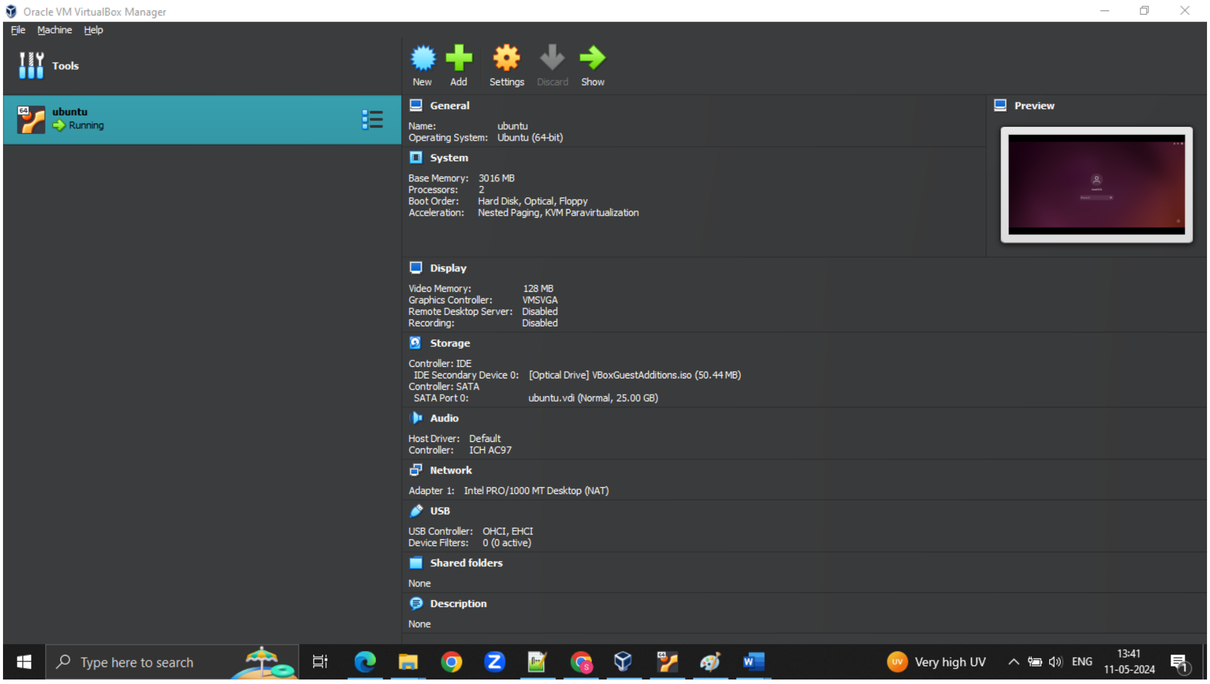
Week-10&12-Assignment

1. Host a Ubuntu Virtual Machine using Oracle VM Virtual Box.



General

```
Name:               ubuntu
Operating System:   Ubuntu (64-bit)
```

System

```
Base Memory:    3016 MB
Processors:     2
Boot Order:     Hard Disk, Optical, Floppy
Acceleration:   Nested Paging, KVM Paravirtualization
```

Display

```
Video Memory:            128 MB
Graphics Controller:     VMSVGA
Remote Desktop Server:   Disabled
Recording:               Disabled
```

Storage

```
Controller: IDE
 IDE Secondary Device 0:   [Optical Drive] VBoxGuestAdditions.iso (50.44 MB)
Controller: SATA
 SATA Port 0:              ubuntu.vdi (Normal, 25.00 GB)
```

Audio

```
Host Driver:   Default
Controller:    ICH AC97
```

Network

```
Adapter 1:   Intel PRO/1000 MT Desktop (NAT)
```

USB

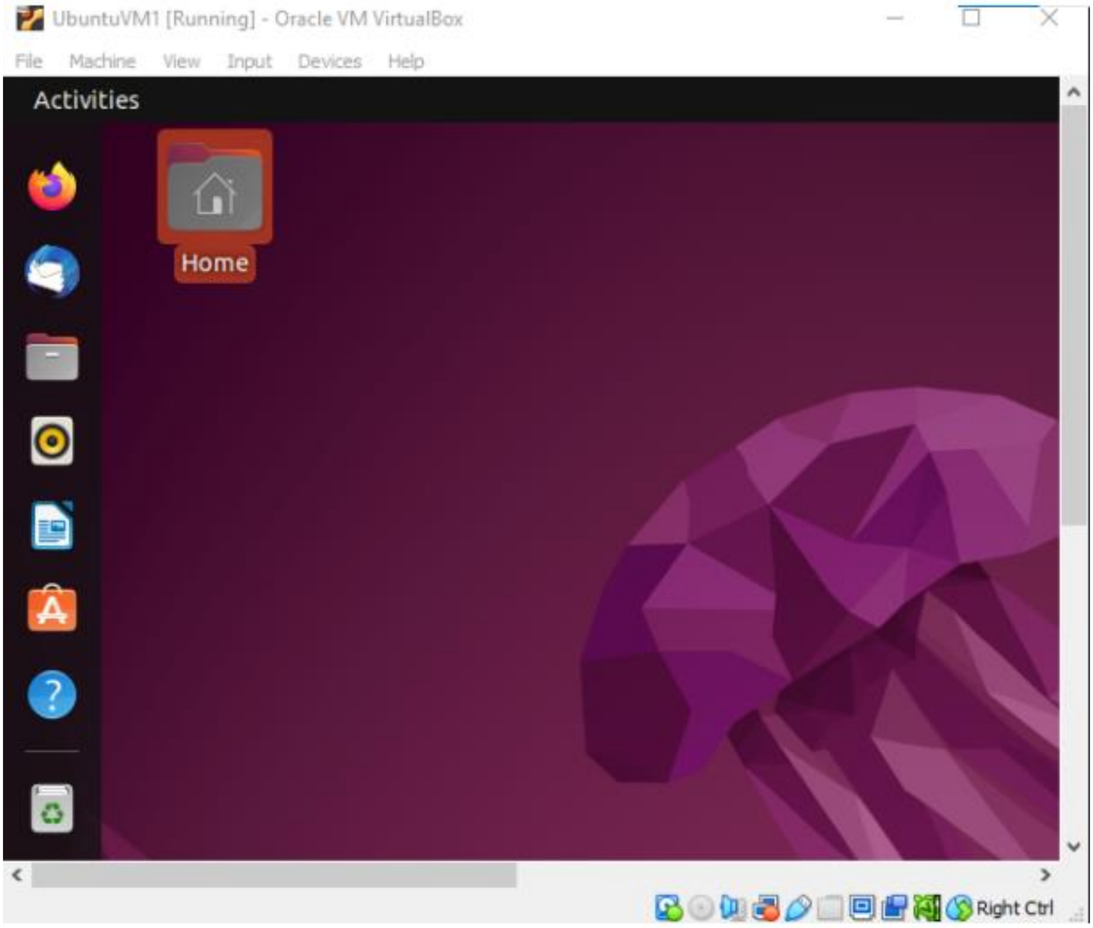
```
USB Controller:   OHCI, EHCI
Device Filters:   0 (0 active)
```

Shared folders

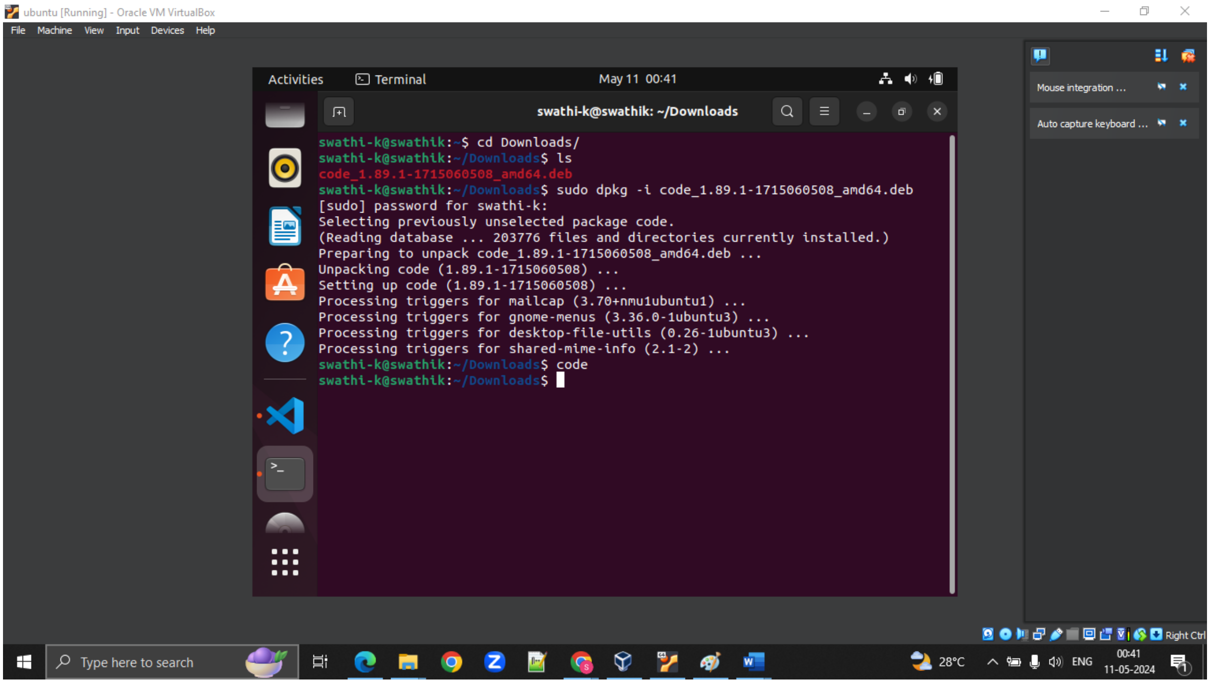
None

Description

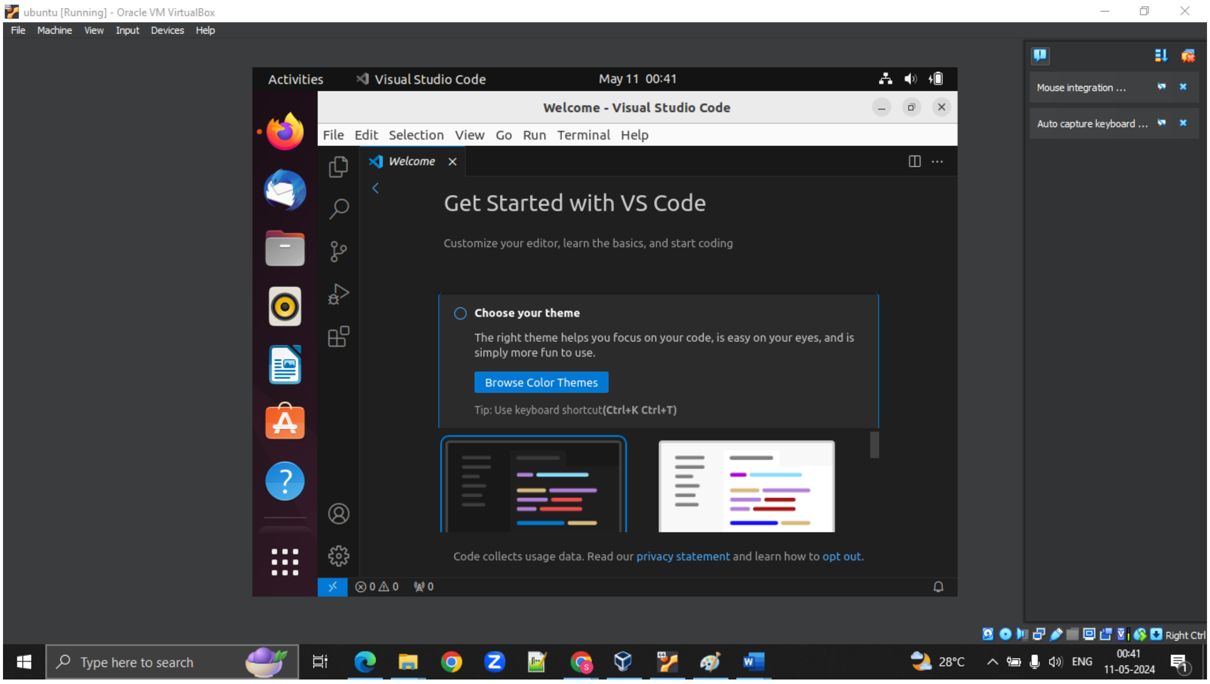
None



2. Set up Visual Studio code on Ubuntu VM.


ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
May 11 00:41
swathi-k@swathik: ~/Downloads
Mouse integration ...
Auto capture keyboard ...
Right Ctrl
Type here to search
28°C
ENG
00:41
11-05-2024

```
swathi-k@swathik:~$ cd Downloads/
swathi-k@swathik:~/Downloads$ ls
code_1.89.1-1715060508_amd64.deb
swathi-k@swathik:~/Downloads$ sudo dpkg -i code_1.89.1-1715060508_amd64.deb
[sudo] password for swathi-k:
Selecting previously unselected package code.
(Reading database ... 203776 files and directories currently installed.)
Preparing to unpack code_1.89.1-1715060508_amd64.deb ...
Unpacking code (1.89.1-1715060508) ...
Setting up code (1.89.1-1715060508) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
Processing triggers for shared-mime-info (2.1-2) ...
swathi-k@swathik:~/Downloads$ code
swathi-k@swathik:~/Downloads$ 
```


ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Visual Studio Code
May 11 00:41
Welcome - Visual Studio Code
File Edit Selection View Go Run Terminal Help
Welcome
Browse Color Themes
Mouse integration ...
Auto capture keyboard ...
Right Ctrl
Type here to search
28°C
ENG
00:41
11-05-2024

Get Started with VS Code

Customize your editor, learn the basics, and start coding

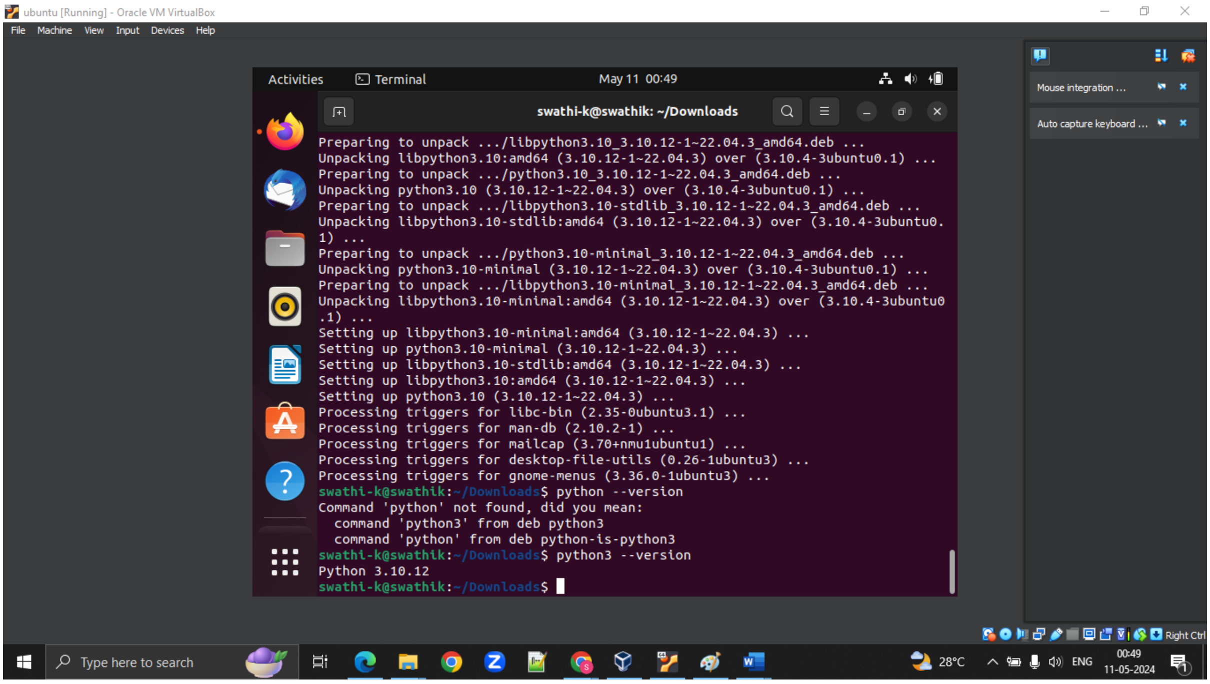
○ Choose your theme

The right theme helps you focus on your code, is easy on your eyes, and is simply more fun to use.

Tip: Use keyboard shortcut(Ctrl+K Ctrl+T)

Code collects usage data. Read our privacy statement and learn how to opt out.

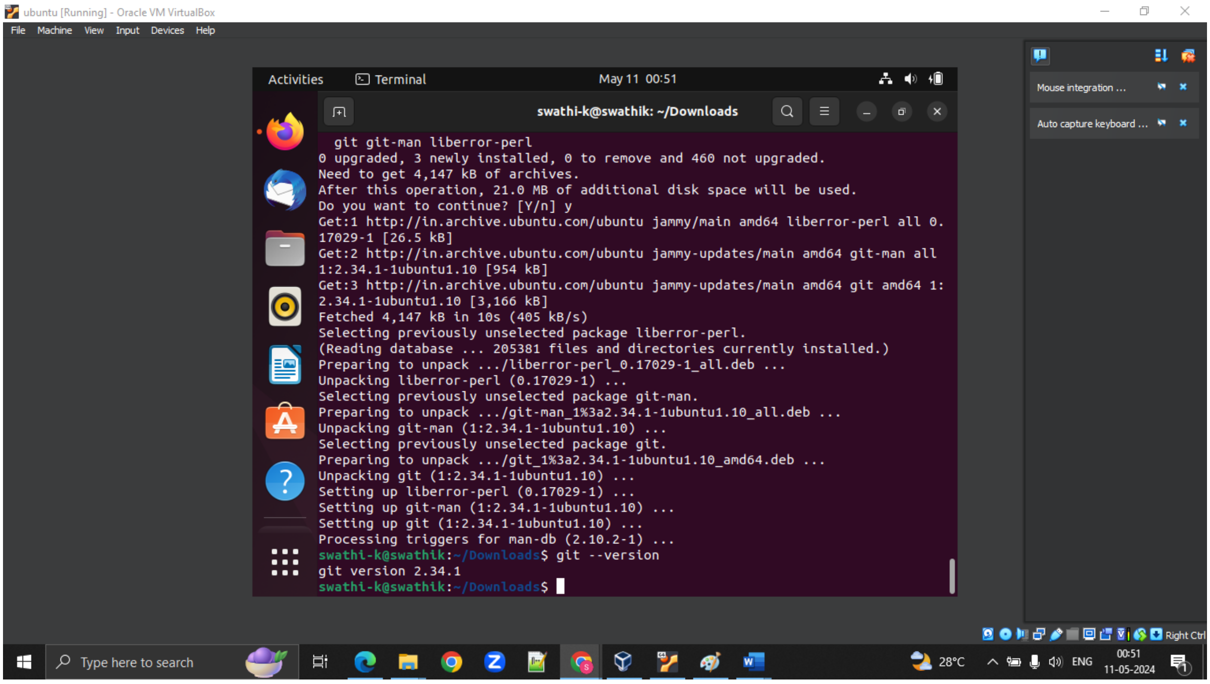
3. Set up Python.



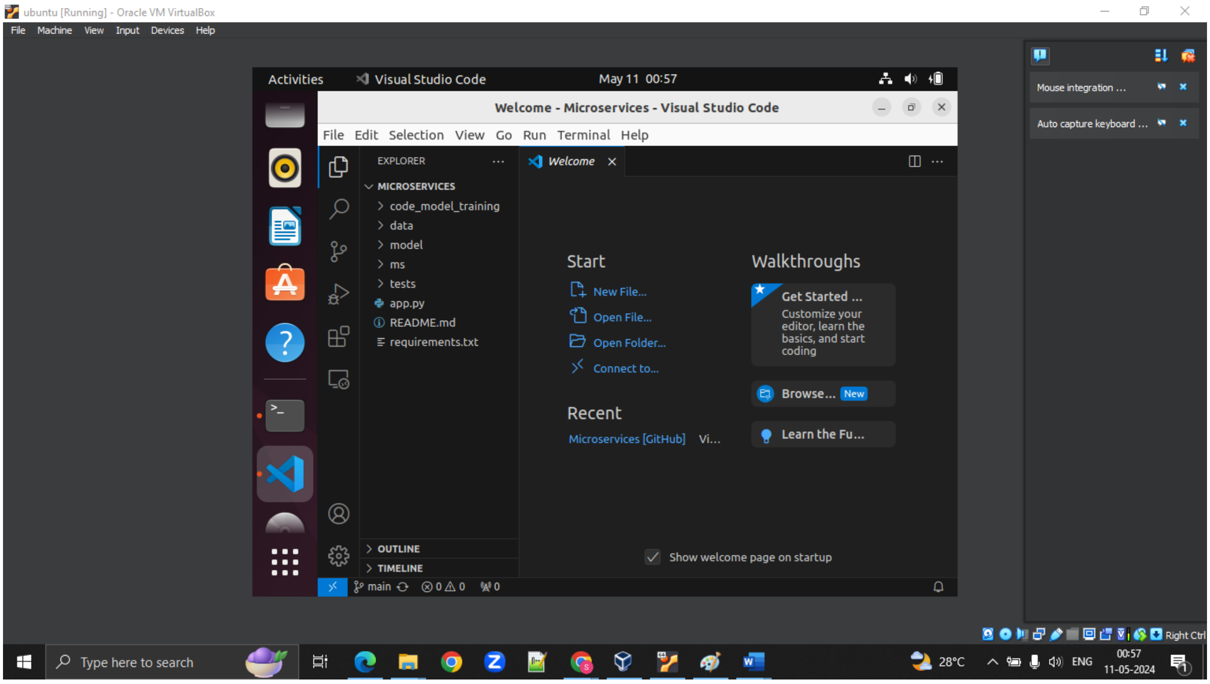
ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
May 11 00:49
swathi-k@swathik: ~/Downloads
Mouse integration ...
Auto capture keyboard ...
Type here to search
28°C
ENG
00:49
11-05-2024
Right Ctrl

```
Preparing to unpack .../libpython3.10_3.10.12-1~22.04.3_amd64.deb ...
Unpacking libpython3.10:amd64 (3.10.12-1~22.04.3) over (3.10.4-3ubuntu0.1) ...
Preparing to unpack .../python3.10_3.10.12-1~22.04.3_amd64.deb ...
Unpacking python3.10 (3.10.12-1~22.04.3) over (3.10.4-3ubuntu0.1) ...
Preparing to unpack .../libpython3.10-stdlib_3.10.12-1~22.04.3_amd64.deb ...
Unpacking libpython3.10-stdlib:amd64 (3.10.12-1~22.04.3) over (3.10.4-3ubuntu0.
1) ...
Preparing to unpack .../python3.10-minimal_3.10.12-1~22.04.3_amd64.deb ...
Unpacking python3.10-minimal (3.10.12-1~22.04.3) over (3.10.4-3ubuntu0.1) ...
Preparing to unpack .../libpython3.10-minimal_3.10.12-1~22.04.3_amd64.deb ...
Unpacking libpython3.10-minimal:amd64 (3.10.12-1~22.04.3) over (3.10.4-3ubuntu0
.1) ...
Setting up libpython3.10-minimal:amd64 (3.10.12-1~22.04.3) ...
Setting up python3.10-minimal (3.10.12-1~22.04.3) ...
Setting up libpython3.10-stdlib:amd64 (3.10.12-1~22.04.3) ...
Setting up libpython3.10:amd64 (3.10.12-1~22.04.3) ...
Setting up python3.10 (3.10.12-1~22.04.3) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
swathi-k@swathik:~/Downloads$ python --version
Command 'python' not found, did you mean:
  command 'python3' from deb python3
  command 'python' from deb python-is-python3
swathi-k@swathik:~/Downloads$ python3 --version
Python 3.10.12
swathi-k@swathik:~/Downloads$ 
```

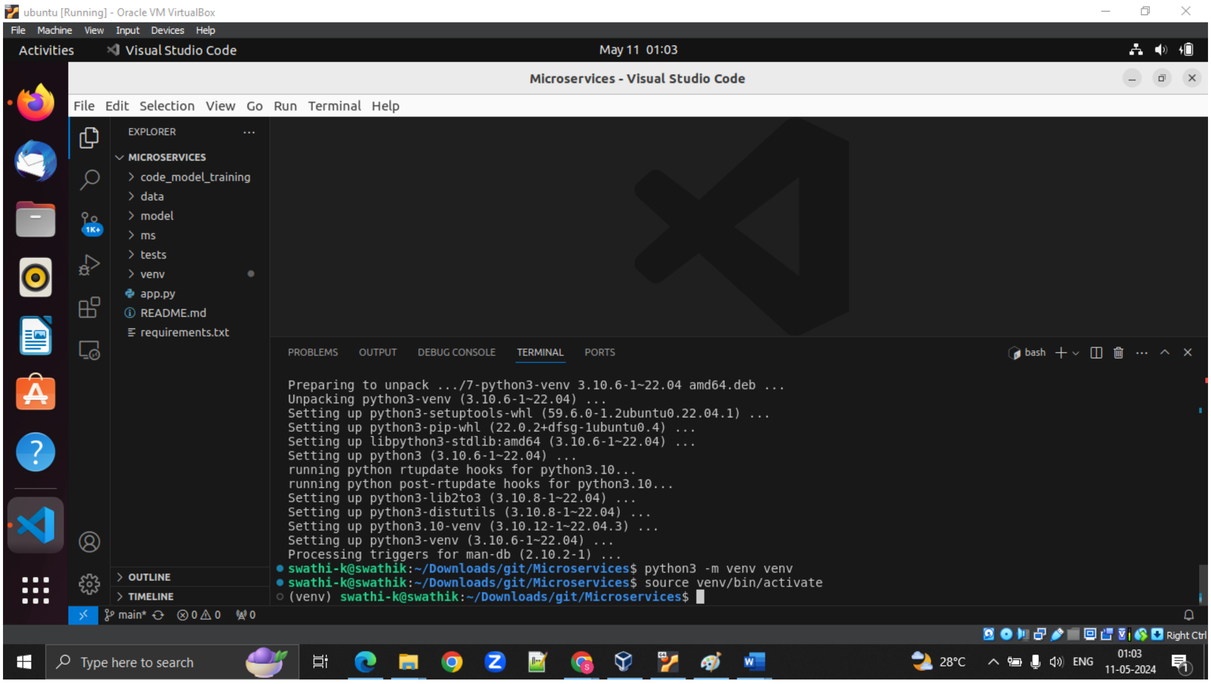
4. Clone this github repository - https://github/Vikas098766/Microservices


ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
May 11 00:51
swathi-k@swathik: ~/Downloads
Mouse integration ...
Auto capture keyboard ...
Right Ctrl
Type here to search
28°C
ENG
00:51
11-05-2024

```
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 460 not upgraded.
Need to get 4,147 kB of archives.
After this operation, 21.0 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 liberror-perl all 0.
17029-1 [26.5 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 git-man all
1:2.34.1-1ubuntu1.10 [954 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 git amd64 1:
2.34.1-1ubuntu1.10 [3,166 kB]
Fetched 4,147 kB in 10s (405 kB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 205381 files and directories currently installed.)
Preparing to unpack .../liberror-perl_0.17029-1_all.deb ...
Unpacking liberror-perl (0.17029-1) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1%3a2.34.1-1ubuntu1.10_all.deb ...
Unpacking git-man (1:2.34.1-1ubuntu1.10) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1%3a2.34.1-1ubuntu1.10_amd64.deb ...
Unpacking git (1:2.34.1-1ubuntu1.10) ...
Setting up liberror-perl (0.17029-1) ...
Setting up git-man (1:2.34.1-1ubuntu1.10) ...
Setting up git (1:2.34.1-1ubuntu1.10) ...
Processing triggers for man-db (2.10.2-1) ...
swathi-k@swathik:~/Downloads$ git --version
git version 2.34.1
swathi-k@swathik:~/Downloads$ 
```

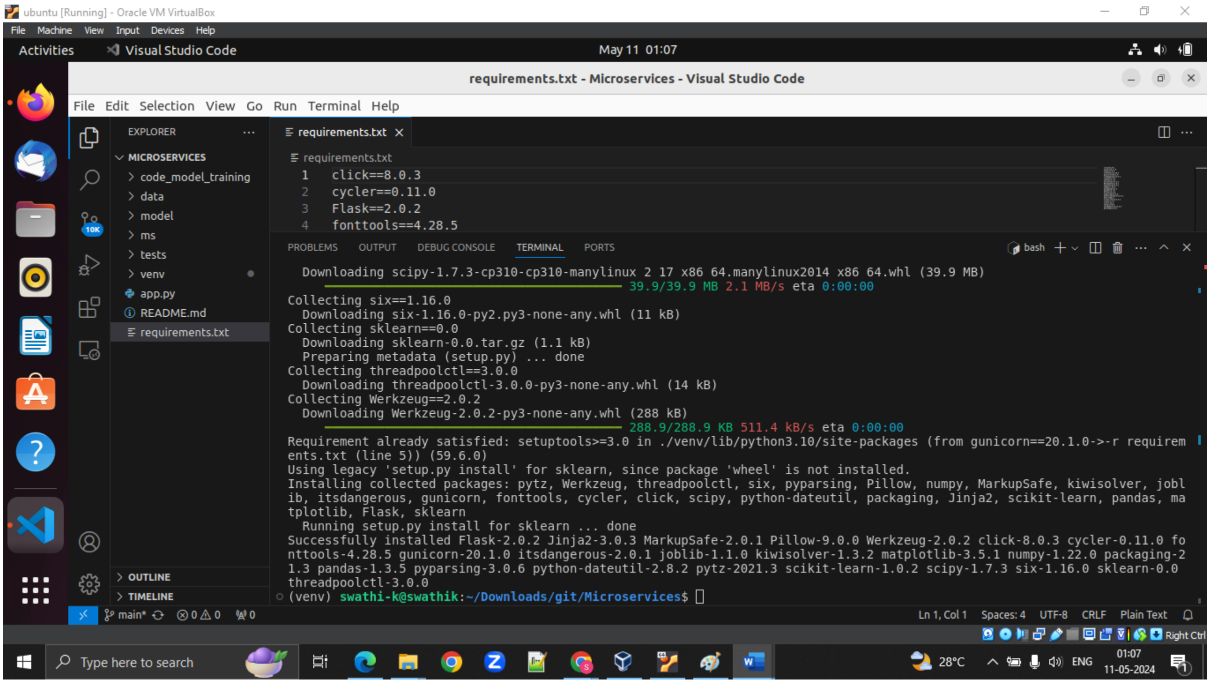


5. Create a Virtual Environment.



```
Preparing to unpack .../7-python3-venv 3.10.6-1~22.04 amd64.deb ...
Unpacking python3-venv (3.10.6-1~22.04) ...
Setting up python3-setuptools-whl (59.6.0-1.2ubuntu0.22.04.1) ...
Setting up python3-pip-whl (22.0.2+dfsg-1ubuntu0.4) ...
Setting up libpython3-stdlib:amd64 (3.10.6-1~22.04) ...
Setting up python3 (3.10.6-1~22.04) ...
running python rtupdate hooks for python3.10...
running python post-rtupdate hooks for python3.10...
Setting up python3-lib2to3 (3.10.8-1~22.04) ...
Setting up python3-distutils (3.10.8-1~22.04) ...
Setting up python3.10-venv (3.10.12-1~22.04.3) ...
Setting up python3-venv (3.10.6-1~22.04) ...
Processing triggers for man-db (2.10.2-1) ...
swathi-k@swathik:~/Downloads/git/Microservices$ python3 -m venv venv
swathi-k@swathik:~/Downloads/git/Microservices$ source venv/bin/activate
(venv) swathi-k@swathik:~/Downloads/git/Microservices$
```

6. Install the dependencies from requirements.txt file.

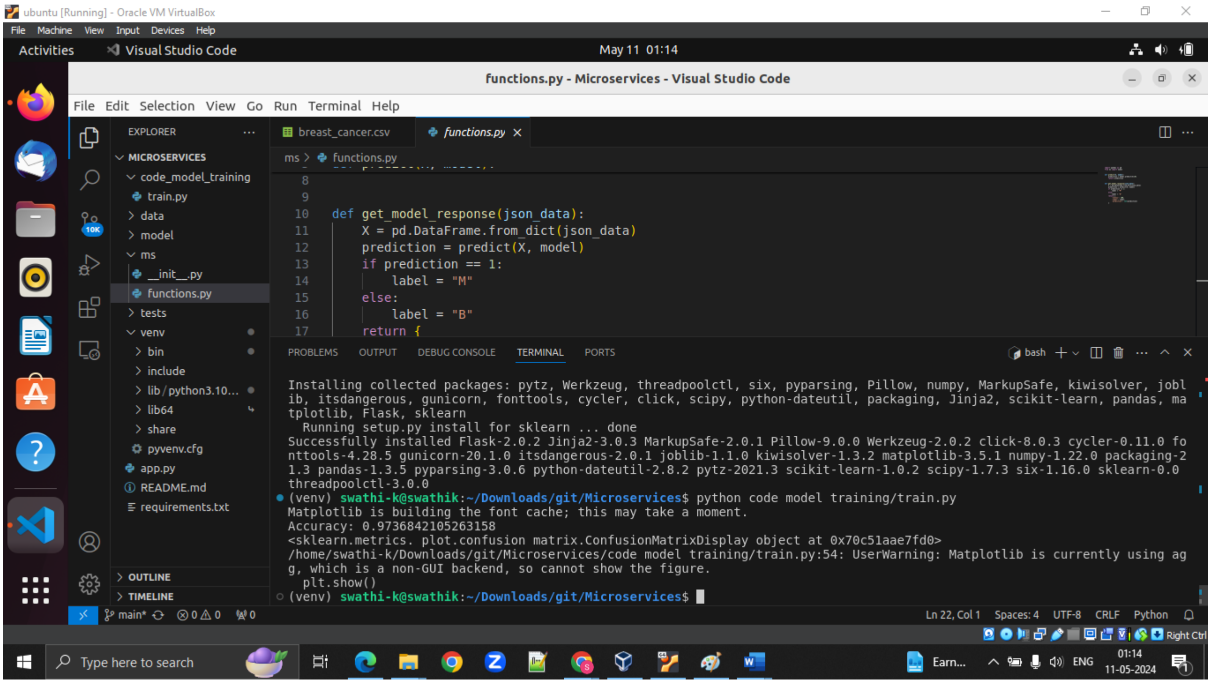


requirements.txt

```
click==8.0.3
cycler==0.11.0
Flask==2.0.2
fonttools==4.28.5
```

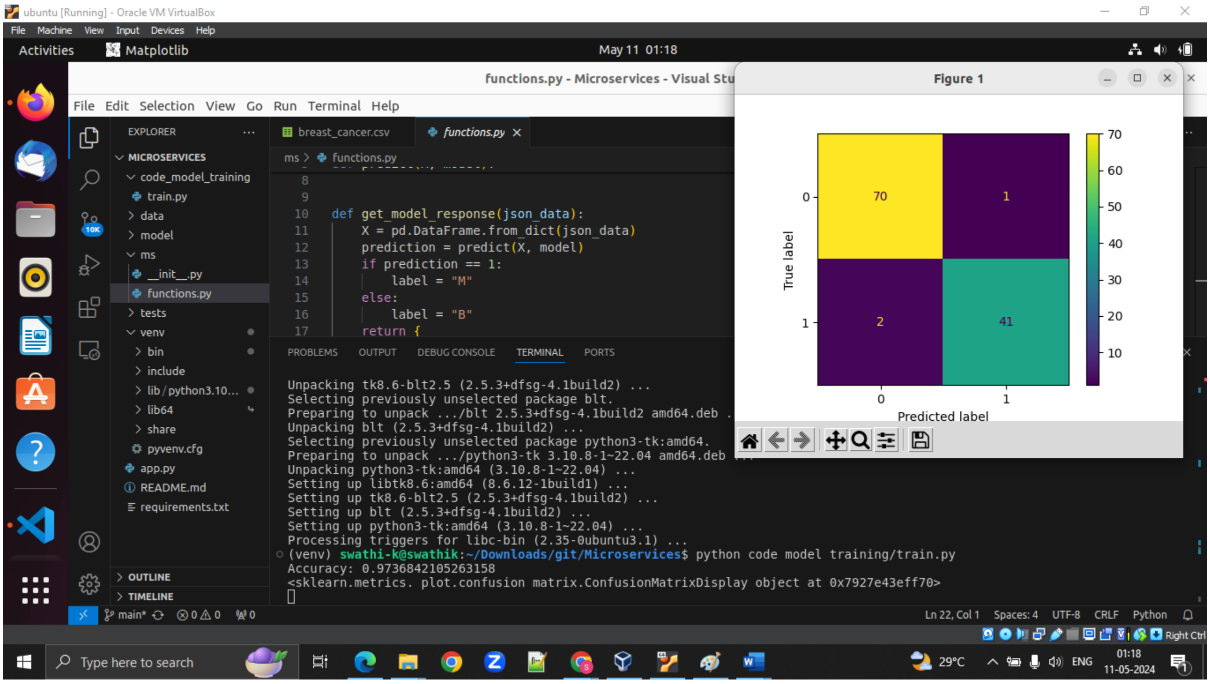
```
  Downloading scipy-1.7.3-cp310-cp310-manylinux 2 17 x86 64.manylinux2014 x86 64.whl (39.9 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 39.9/39.9 MB 2.1 MB/s eta 0:00:00
Collecting six==1.16.0
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Collecting sklearn==0.0
  Downloading sklearn-0.0.tar.gz (1.1 kB)
  Preparing metadata (setup.py) ... done
Collecting threadpoolctl==3.0.0
  Downloading threadpoolctl-3.0.0-py3-none-any.whl (14 kB)
Collecting Werkzeug==2.0.2
  Downloading Werkzeug-2.0.2-py3-none-any.whl (288 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 288.9/288.9 KB 511.4 kB/s eta 0:00:00
Requirement already satisfied: setuptools>=3.0 in ./venv/lib/python3.10/site-packages (from gunicorn==20.1.0->-r requirem
ents.txt (line 5)) (59.6.0)
Using legacy 'setup.py install' for sklearn, since package 'wheel' is not installed.
Installing collected packages: pytz, Werkzeug, threadpoolctl, six, pyparsing, Pillow, numpy, MarkupSafe, kiwisolver, jobl
ib, itsdangerous, gunicorn, fonttools, cycler, click, scipy, python-dateutil, packaging, Jinja2, scikit-learn, pandas, ma
tplotlib, Flask, sklearn
  Running setup.py install for sklearn ... done
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Pillow-9.0.0 Werkzeug-2.0.2 click-8.0.3 cycler-0.11.0 fo
nttools-4.28.5 gunicorn-20.1.0 itsdangerous-2.0.1 joblib-1.1.0 kiwisolver-1.3.2 matplotlib-3.5.1 numpy-1.22.0 packaging-2
1.3 pandas-1.3.5 pyparsing-3.0.6 python-dateutil-2.8.2 pytz-2021.3 scikit-learn-1.0.2 scipy-1.7.3 six-1.16.0 sklearn-0.0
threadpoolctl-3.0.0
(venv) swathi-k@swathik:~/Downloads/git/Microservices$
```

7. Train and save the model.



```python


def get_model_response(json_data):
    X = pd.DataFrame.from_dict(json_data)
    prediction = predict(X, model)
    if prediction == 1:
        label = "M"
    else:
        label = "B"
    return {
```

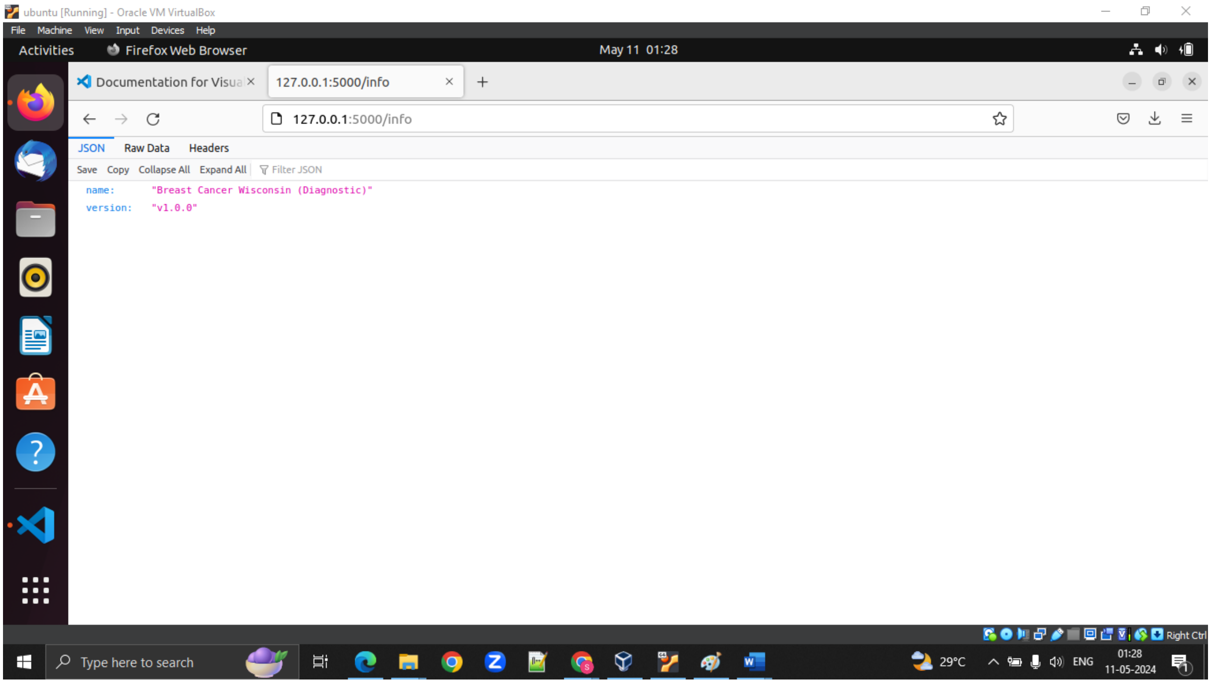
```
Installing collected packages: pytz, Werkzeug, threadpoolctl, six, pyparsing, Pillow, numpy, MarkupSafe, kiwisolver, jobl
ib, itsdangerous, gunicorn, fonttools, cycler, click, scipy, python-dateutil, packaging, Jinja2, scikit-learn, pandas, ma
tplotlib, Flask, sklearn
  Running setup.py install for sklearn ... done
Successfully installed Flask-2.0.2 Jinja2-3.0.3 MarkupSafe-2.0.1 Pillow-9.0.0 Werkzeug-2.0.2 click-8.0.3 cycler-0.11.0 fo
nttools-4.28.5 gunicorn-20.1.0 itsdangerous-2.0.1 joblib-1.1.0 kiwisolver-1.3.2 matplotlib-3.5.1 numpy-1.22.0 packaging-2
1.3 pandas-1.3.5 pyparsing-3.0.6 python-dateutil-2.8.2 pytz-2021.3 scikit-learn-1.0.2 scipy-1.7.3 six-1.16.0 sklearn-0.0
threadpoolctl-3.0.0
(venv) swathi-k@swathik:~/Downloads/git/Microservices$ python code model training/train.py
Matplotlib is building the font cache; this may take a moment.
Accuracy: 0.9736842105263158
<sklearn.metrics. plot.confusion matrix.ConfusionMatrixDisplay object at 0x70c51aae7fd0>
/home/swathi-k/Downloads/git/Microservices/code model training/train.py:54: UserWarning: Matplotlib is currently using ag
g, which is a non-GUI backend, so cannot show the figure.
  plt.show()
(venv) swathi-k@swathik:~/Downloads/git/Microservices$ 
```



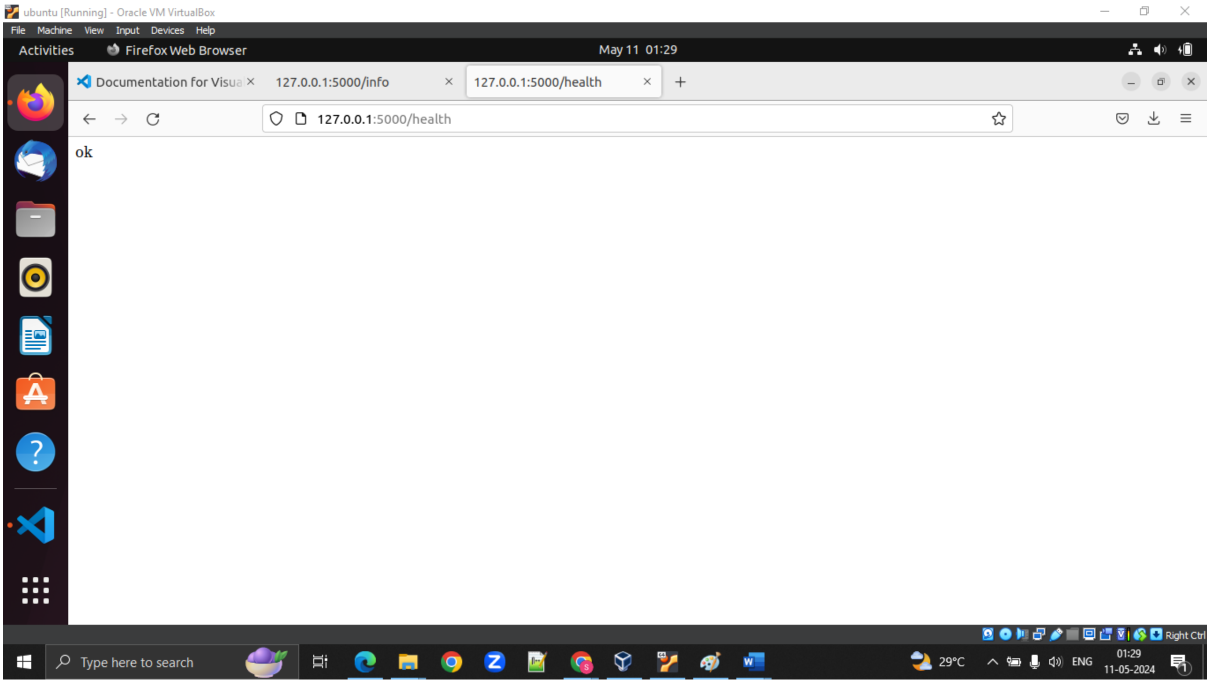
```python


def get_model_response(json_data):
    X = pd.DataFrame.from_dict(json_data)
    prediction = predict(X, model)
    if prediction == 1:
        label = "M"
    else:
        label = "B"
    return {
```

```
Unpacking tk8.6-blt2.5 (2.5.3+dfsg-4.1build2) ...
Selecting previously unselected package blt.
Preparing to unpack .../blt 2.5.3+dfsg-4.1build2 amd64.deb .
Unpacking blt (2.5.3+dfsg-4.1build2) ...
Selecting previously unselected package python3-tk:amd64.
Preparing to unpack .../python3-tk 3.10.8-1~22.04 amd64.deb
Unpacking python3-tk:amd64 (3.10.8-1~22.04) ...
Setting up libtk8.6:amd64 (8.6.12-1build1) ...
Setting up tk8.6-blt2.5 (2.5.3+dfsg-4.1build2) ...
Setting up blt (2.5.3+dfsg-4.1build2) ...
Setting up python3-tk:amd64 (3.10.8-1~22.04) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
(venv) swathi-k@swathik:~/Downloads/git/Microservices$ python code model training/train.py
Accuracy: 0.9736842105263158
<sklearn.metrics. plot.confusion matrix.ConfusionMatrixDisplay object at 0x7927e43eff70>
```

8. Test the Flask web application.

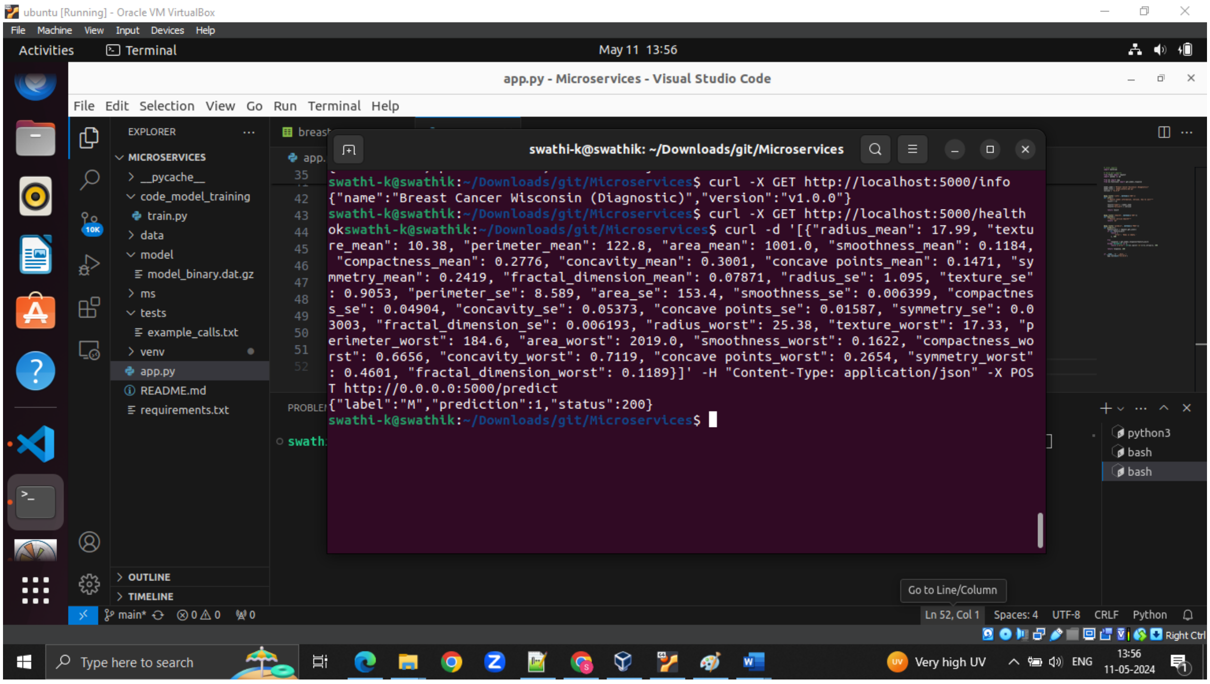


```
name:     "Breast Cancer Wisconsin (Diagnostic)"
version:  "v1.0.0"
```



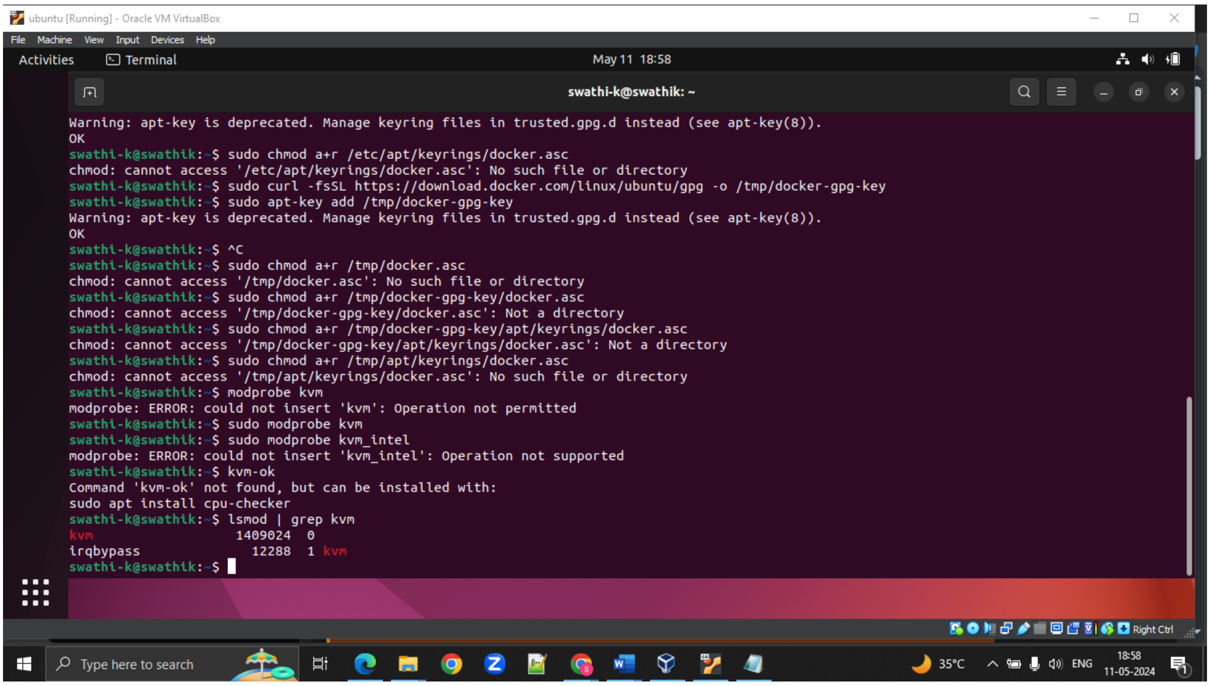
```
ok
```

9. Test the application and make predictions using the example calls available in the folder /tests.

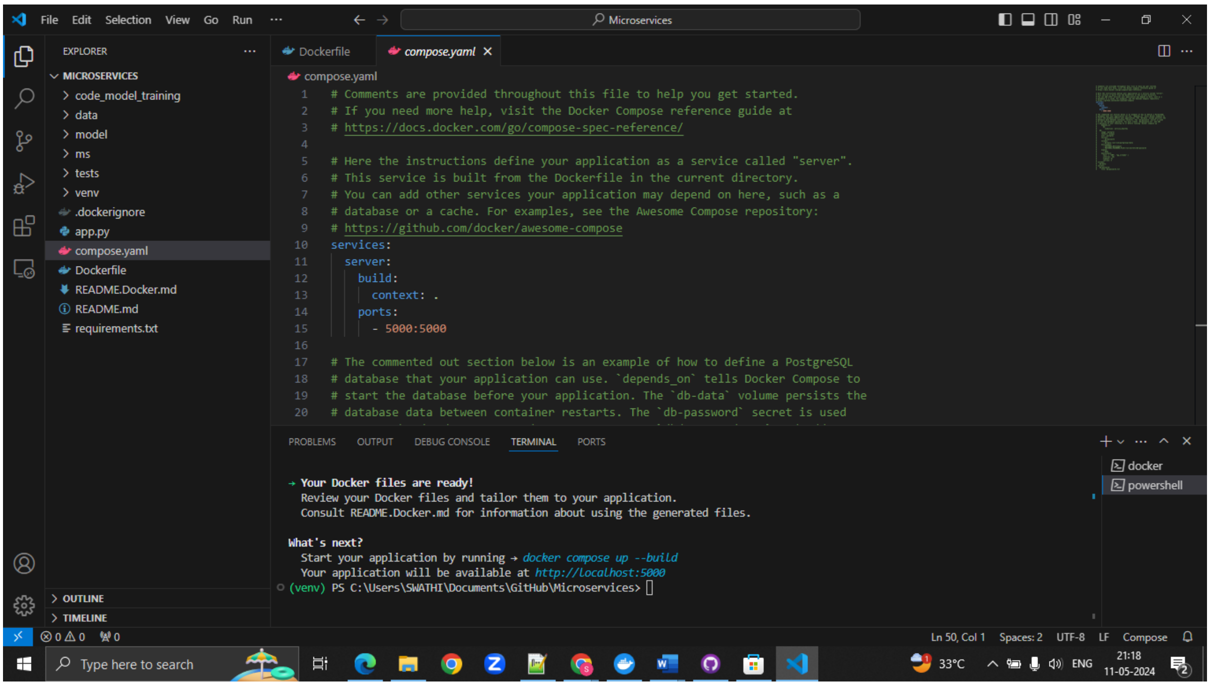


```
swathi-k@swathik:~/Downloads/git/Microservices$ curl -X GET http://localhost:5000/info
{"name":"Breast Cancer Wisconsin (Diagnostic)","version":"v1.0.0"}
swathi-k@swathik:~/Downloads/git/Microservices$ curl -X GET http://localhost:5000/health
okswathi-k@swathik:~/Downloads/git/Microservices$ curl -d '[{"radius_mean": 17.99, "textu
re_mean": 10.38, "perimeter_mean": 122.8, "area_mean": 1001.0, "smoothness_mean": 0.1184,
 "compactness_mean": 0.2776, "concavity_mean": 0.3001, "concave points_mean": 0.1471, "sy
mmetry_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, "compactnes
s_se": 0.04904, "concavity_se": 0.05373, "concave points_se": 0.01587, "symmetry_se": 0.0
3003, "fractal_dimension_se": 0.006193, "radius_worst": 25.38, "texture_worst": 17.33, "p
erimeter_worst": 184.6, "area_worst": 2019.0, "smoothness_worst": 0.1622, "compactness_wo
rst": 0.6656, "concavity_worst": 0.7119, "concave points_worst": 0.2654, "symmetry_worst"
: 0.4601, "fractal_dimension_worst": 0.1189}]' -H "Content-Type: application/json" -X POS
T http://0.0.0.0:5000/predict
{"label":"M","prediction":1,"status":200}
swathi-k@swathik:~/Downloads/git/Microservices$
```

10. Create a docker image containing everything needed to run the application.
Unable to install Docker on my ubuntu virtual machine as KVM is not supported on my system. So, installed Docker on my windows and ran the application.



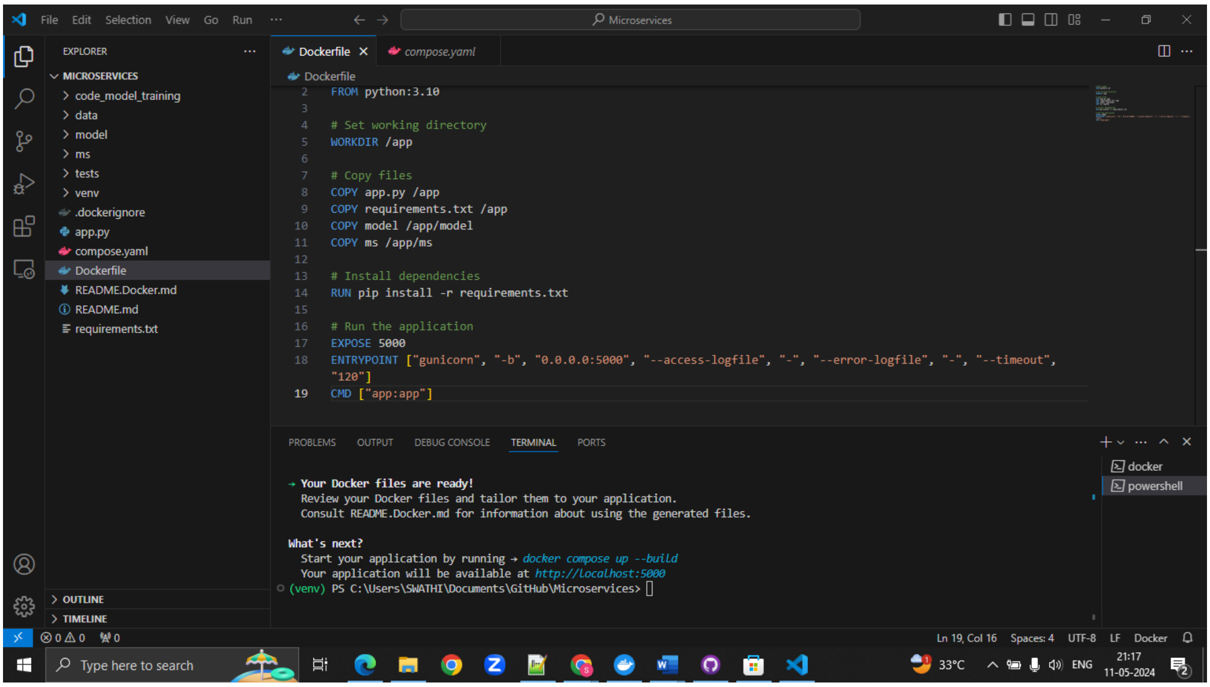
```
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
swathi-k@swathik:~$ sudo chmod a+r /etc/apt/keyrings/docker.asc
chmod: cannot access '/etc/apt/keyrings/docker.asc': No such file or directory
swathi-k@swathik:~$ sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /tmp/docker-gpg-key
swathi-k@swathik:~$ sudo apt-key add /tmp/docker-gpg-key
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
swathi-k@swathik:~$ ^C
swathi-k@swathik:~$ sudo chmod a+r /tmp/docker.asc
chmod: cannot access '/tmp/docker.asc': No such file or directory
swathi-k@swathik:~$ sudo chmod a+r /tmp/docker-gpg-key/docker.asc
chmod: cannot access '/tmp/docker-gpg-key/docker.asc': Not a directory
swathi-k@swathik:~$ sudo chmod a+r /tmp/docker-gpg-key/apt/keyrings/docker.asc
chmod: cannot access '/tmp/docker-gpg-key/apt/keyrings/docker.asc': Not a directory
swathi-k@swathik:~$ sudo chmod a+r /tmp/apt/keyrings/docker.asc
chmod: cannot access '/tmp/apt/keyrings/docker.asc': No such file or directory
swathi-k@swathik:~$ modprobe kvm
modprobe: ERROR: could not insert 'kvm': Operation not permitted
swathi-k@swathik:~$ sudo modprobe kvm
swathi-k@swathik:~$ sudo modprobe kvm_intel
modprobe: ERROR: could not insert 'kvm_intel': Operation not supported
swathi-k@swathik:~$ kvm-ok
Command 'kvm-ok' not found, but can be installed with:
sudo apt install cpu-checker
swathi-k@swathik:~$ lsmod | grep kvm
kvm                  1409024  0
irqbypass              12288  1 kvm
swathi-k@swathik:~$
```



compose.yaml

```
# Comments are provided throughout this file to help you get started.
# If you need more help, visit the Docker Compose reference guide at
# https://docs.docker.com/go/compose-spec-reference/

# Here the instructions define your application as a service called "server".
# This service is built from the Dockerfile in the current directory.
# You can add other services your application may depend on here, such as a
# database or a cache. For examples, see the Awesome Compose repository:
# https://github.com/docker/awesome-compose
services:
  server:
    build:
      context: .
    ports:
      - 5000:5000

# The commented out section below is an example of how to define a PostgreSQL
# database that your application can use. `depends_on` tells Docker Compose to
# start the database before your application. The `db-data` volume persists the
# database data between container restarts. The `db-password` secret is used
```

```
→ Your Docker files are ready!
  Review your Docker files and tailor them to your application.
  Consult README.Docker.md for information about using the generated files.

What's next?
  Start your application by running → docker compose up --build
  Your application will be available at http://localhost:5000
(venv) PS C:\Users\SWATHI\Documents\GitHub\Microservices> 
```

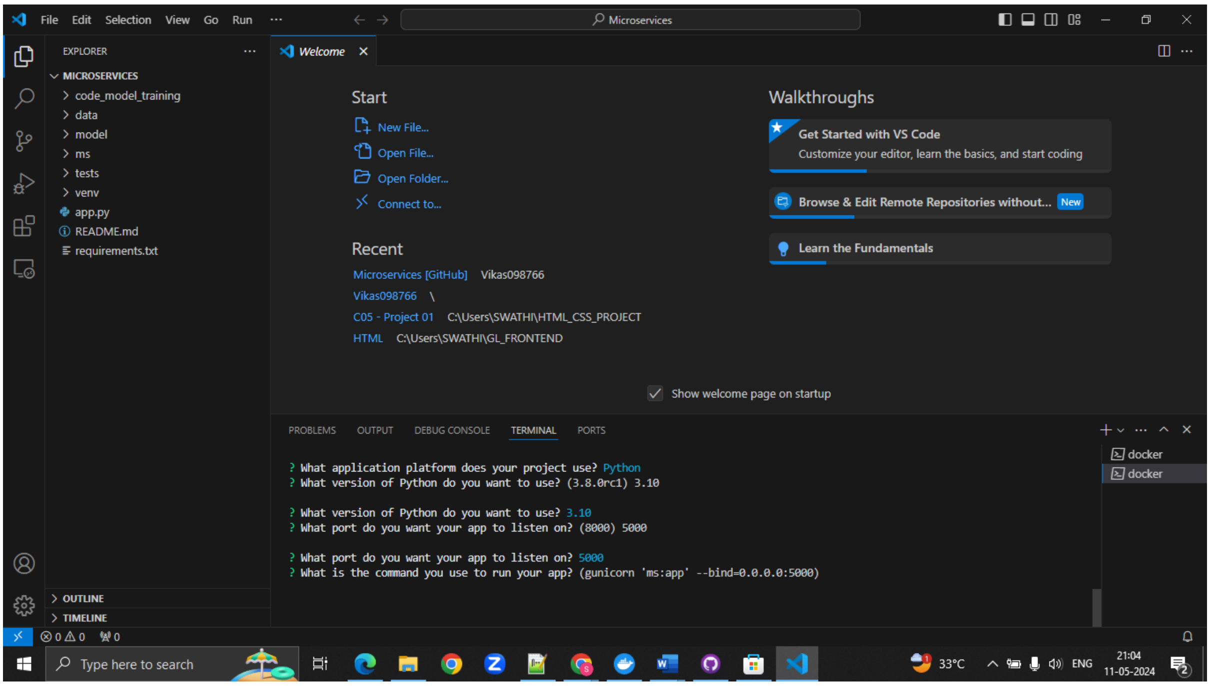


Dockerfile

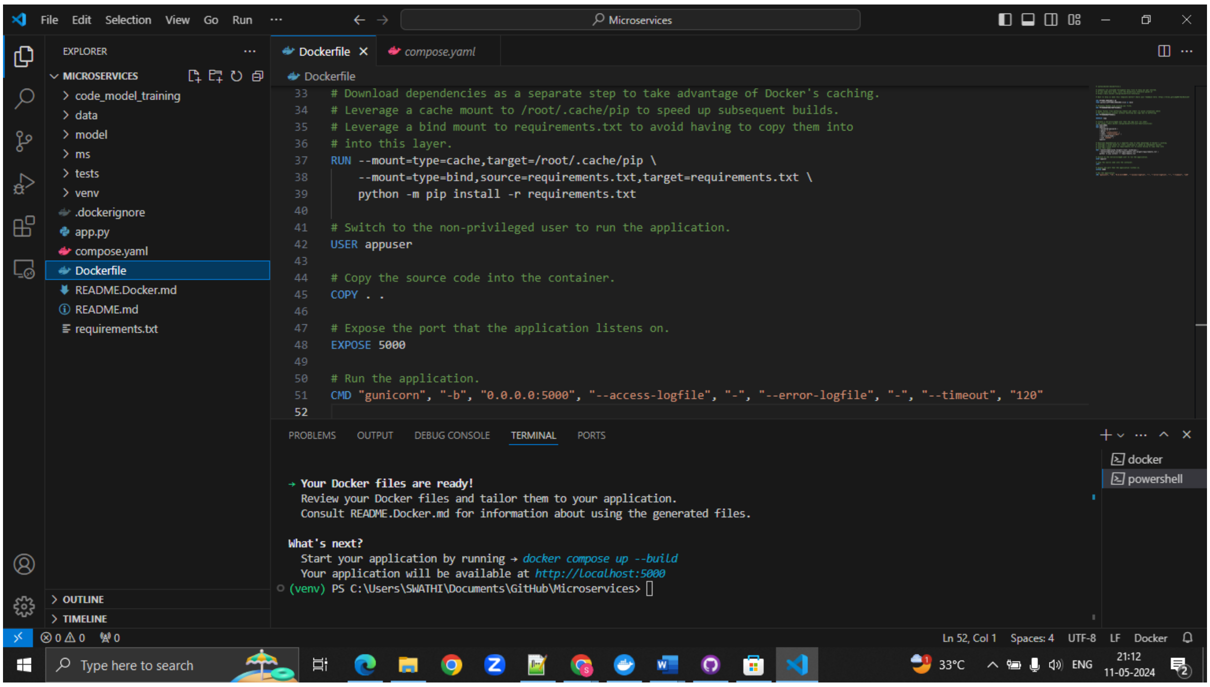
```
FROM python:3.10

# Set working directory
WORKDIR /app

# Copy files
COPY app.py /app
COPY requirements.txt /app
COPY model /app/model
COPY ms /app/ms

# Install dependencies
RUN pip install -r requirements.txt

# Run the application
EXPOSE 5000
ENTRYPOINT ["gunicorn", "-b", "0.0.0.0:5000", "--access-logfile", "-", "--error-logfile", "-", "--timeout",
"120"]
CMD ["app:app"]
```

```
→ Your Docker files are ready!
  Review your Docker files and tailor them to your application.
  Consult README.Docker.md for information about using the generated files.

What's next?
  Start your application by running → docker compose up --build
  Your application will be available at http://localhost:5000
(venv) PS C:\Users\SWATHI\Documents\GitHub\Microservices> 
```

11. Run the containerized application as a prediction service and test it locally by passing some example calls and get the prediction.

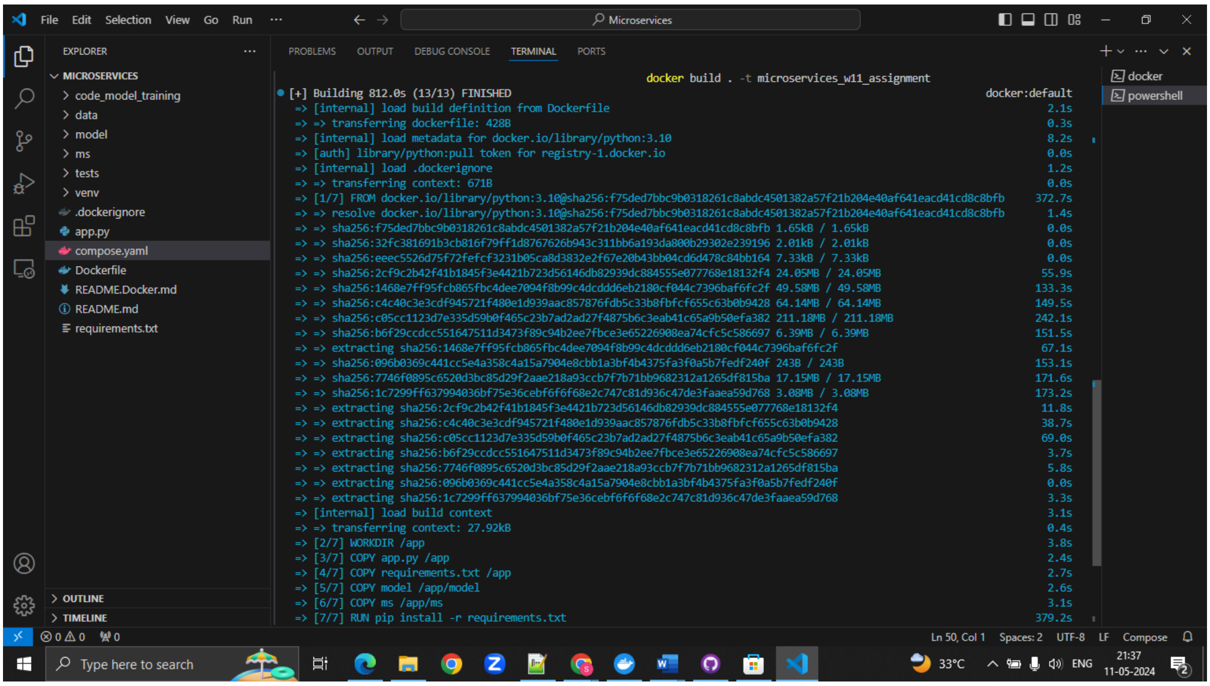


```
? What application platform does your project use? Python
? What version of Python do you want to use? (3.8.0rc1) 3.10

? What version of Python do you want to use? 3.10
? What port do you want your app to listen on? (8000) 5000

? What port do you want your app to listen on? 5000
? What is the command you use to run your app? (gunicorn 'ms:app' --bind=0.0.0.0:5000)
```



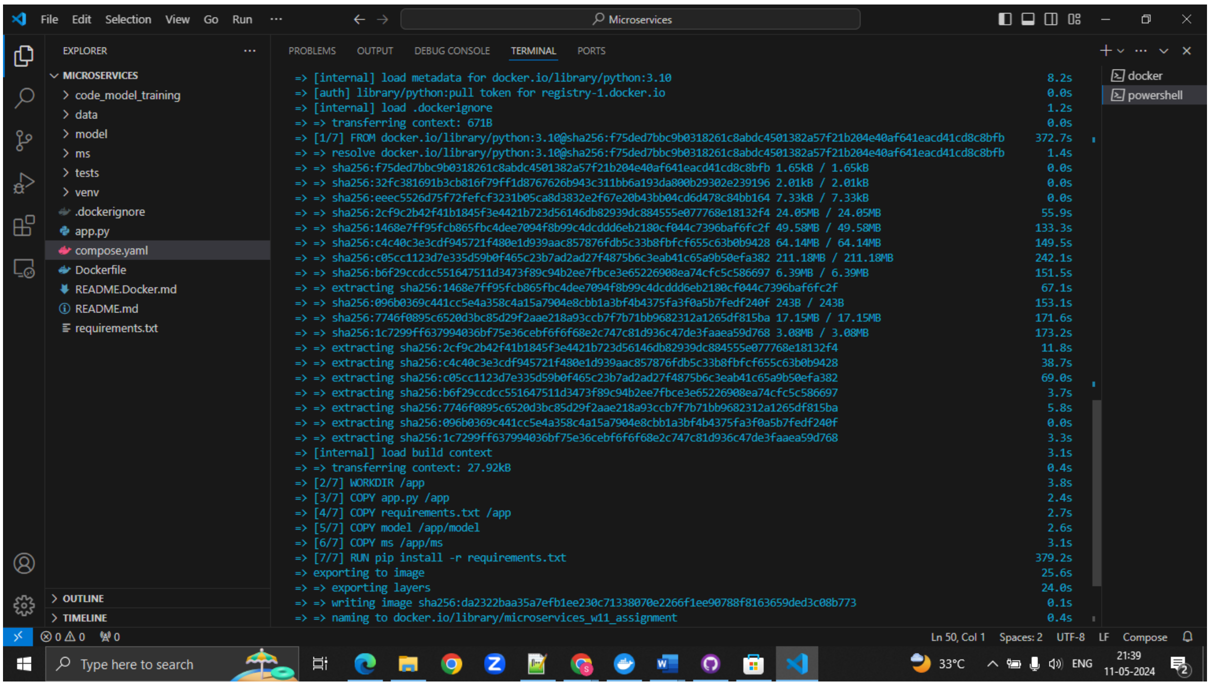
```
# Download dependencies as a separate step to take advantage of Docker's caching.
# Leverage a cache mount to /root/.cache/pip to speed up subsequent builds.
# Leverage a bind mount to requirements.txt to avoid having to copy them into
# into this layer.
RUN --mount=type=cache,target=/root/.cache/pip \
    --mount=type=bind,source=requirements.txt,target=requirements.txt \
    python -m pip install -r requirements.txt

# Switch to the non-privileged user to run the application.
USER appuser

# Copy the source code into the container.
COPY . .

# Expose the port that the application listens on.
EXPOSE 5000

# Run the application.
CMD "gunicorn", "-b", "0.0.0.0:5000", "--access-logfile", "-", "--error-logfile", "-", "--timeout", "120"

```

```
→ Your Docker files are ready!
  Review your Docker files and tailor them to your application.
  Consult README.Docker.md for information about using the generated files.

What's next?
  Start your application by running → docker compose up --build
  Your application will be available at http://localhost:5000
○ (venv) PS C:\Users\SWATHI\Documents\GitHub\Microservices> 
```



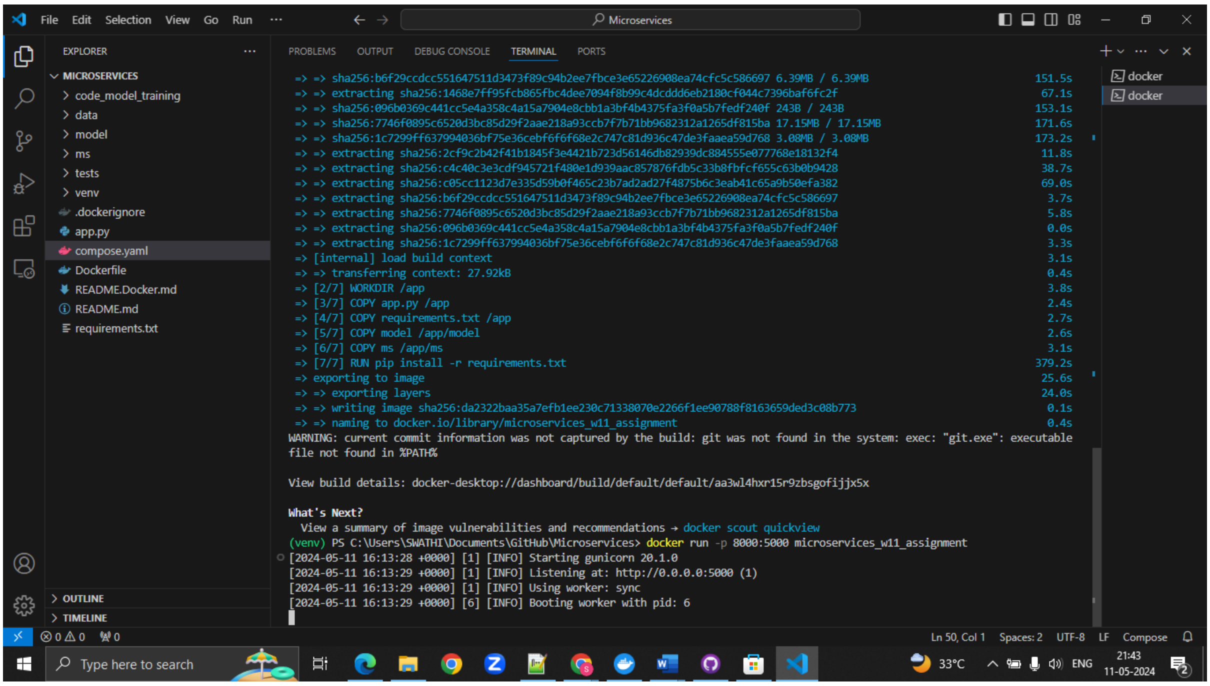
```
                                          docker build . -t microservices_w11_assignment
[+] Building 812.0s (13/13) FINISHED                                                                  docker:default
 => [internal] load build definition from Dockerfile                                                             2.1s
 => => transferring dockerfile: 428B                                                                             0.3s
 => [internal] load metadata for docker.io/library/python:3.10                                                   8.2s
 => [auth] library/python:pull token for registry-1.docker.io                                                    0.0s
 => [internal] load .dockerignore                                                                                1.2s
 => => transferring context: 671B                                                                                0.0s
 => [1/7] FROM docker.io/library/python:3.10@sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb   372.7s
 => => resolve docker.io/library/python:3.10@sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb     1.4s
 => => sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb 1.65kB / 1.65kB                   0.0s
 => => sha256:32fc381691b3cb816f79ff1d8767626b943c311bb6a193da800b29302e239196 2.01kB / 2.01kB                   0.0s
 => => sha256:eeec5526d75f72fefcf3231b05ca8d3832e2f67e20b43bb04cd6d478c84bb164 7.33kB / 7.33kB                   0.0s
 => => sha256:2cf9c2b42f41b1845f3e4421b723d56146db82939dc884555e077768e18132f4 24.05MB / 24.05MB                55.9s
 => => sha256:1468e7ff95fcb865fbc4dee7094f8b99c4dcddd6eb2180cf044c7396baf6fc2f 49.58MB / 49.58MB               133.3s
 => => sha256:c4c40c3e3cdf945721f480e1d939aac857876fdb5c33b8fbfcf655c63b0b9428 64.14MB / 64.14MB               149.5s
 => => sha256:c05cc1123d7e335d59b0f465c23b7ad2ad27f4875b6c3eab41c65a9b50efa382 211.18MB / 211.18MB             242.1s
 => => sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697 6.39MB / 6.39MB                 151.5s
 => => extracting sha256:1468e7ff95fcb865fbc4dee7094f8b99c4dcddd6eb2180cf044c7396baf6fc2f                       67.1s
 => => sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f 243B / 243B                     153.1s
 => => sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba 17.15MB / 17.15MB               171.6s
 => => sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768 3.08MB / 3.08MB                 173.2s
 => => extracting sha256:2cf9c2b42f41b1845f3e4421b723d56146db82939dc884555e077768e18132f4                       11.8s
 => => extracting sha256:c4c40c3e3cdf945721f480e1d939aac857876fdb5c33b8fbfcf655c63b0b9428                       38.7s
 => => extracting sha256:c05cc1123d7e335d59b0f465c23b7ad2ad27f4875b6c3eab41c65a9b50efa382                       69.0s
 => => extracting sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697                        3.7s
 => => extracting sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba                        5.8s
 => => extracting sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f                        0.0s
 => => extracting sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768                        3.3s
 => [internal] load build context                                                                                3.1s
 => => transferring context: 27.92kB                                                                             0.4s
 => [2/7] WORKDIR /app                                                                                           3.8s
 => [3/7] COPY app.py /app                                                                                       2.4s
 => [4/7] COPY requirements.txt /app                                                                             2.7s
 => [5/7] COPY model /app/model                                                                                  2.6s
 => [6/7] COPY ms /app/ms                                                                                        3.1s
 => [7/7] RUN pip install -r requirements.txt                                                                  379.2s
```

Docker Image - microservices_w11_assignment

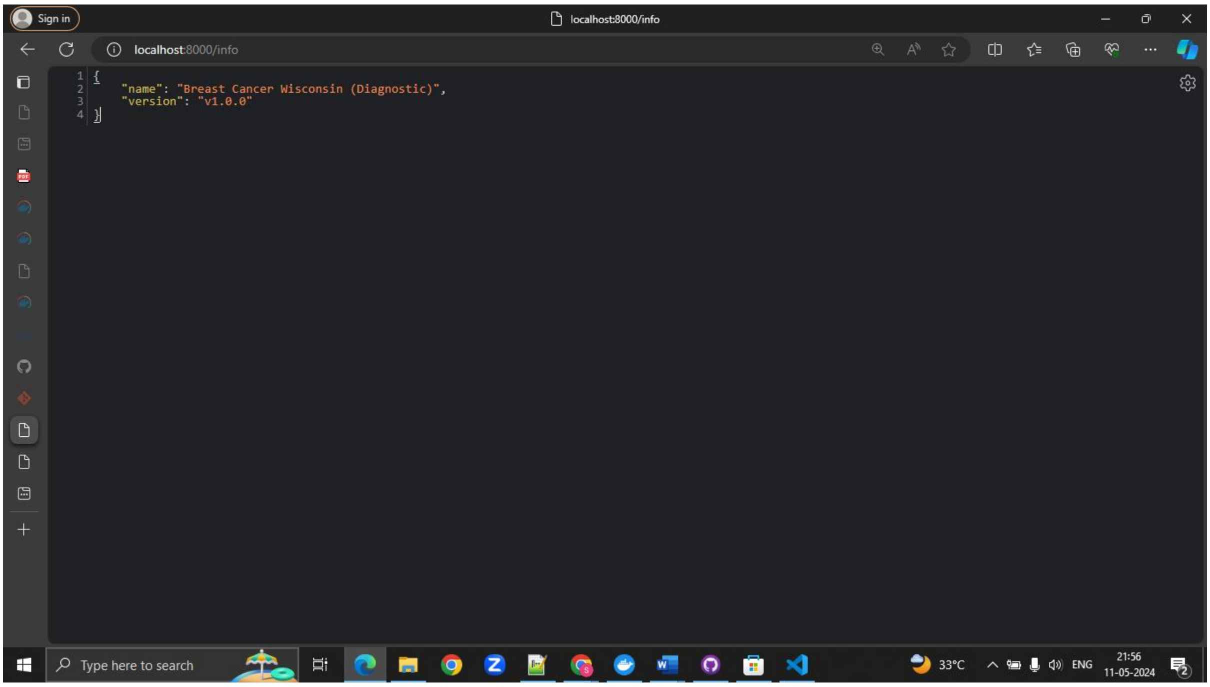


```
 => [internal] load metadata for docker.io/library/python:3.10                                                   8.2s
 => [auth] library/python:pull token for registry-1.docker.io                                                    0.0s
 => [internal] load .dockerignore                                                                                1.2s
 => => transferring context: 671B                                                                                0.0s
 => [1/7] FROM docker.io/library/python:3.10@sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb   372.7s
 => => resolve docker.io/library/python:3.10@sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb     1.4s
 => => sha256:f75ded7bbc9b0318261c8abdc4501382a57f21b204e40af641eacd41cd8c8bfb 1.65kB / 1.65kB                   0.0s
 => => sha256:32fc381691b3cb816f79ff1d8767626b943c311bb6a193da800b29302e239196 2.01kB / 2.01kB                   0.0s
 => => sha256:eeec5526d75f72fefcf3231b05ca8d3832e2f67e20b43bb04cd6d478c84bb164 7.33kB / 7.33kB                   0.0s
 => => sha256:2cf9c2b42f41b1845f3e4421b723d56146db82939dc884555e077768e18132f4 24.05MB / 24.05MB                55.9s
 => => sha256:1468e7ff95fcb865fbc4dee7094f8b99c4dcddd6eb2180cf044c7396baf6fc2f 49.58MB / 49.58MB               133.3s
 => => sha256:c4c40c3e3cdf945721f480e1d939aac857876fdb5c33b8fbfcf655c63b0b9428 64.14MB / 64.14MB               149.5s
 => => sha256:c05cc1123d7e335d59b0f465c23b7ad2ad27f4875b6c3eab41c65a9b50efa382 211.18MB / 211.18MB             242.1s
 => => sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697 6.39MB / 6.39MB                 151.5s
 => => extracting sha256:1468e7ff95fcb865fbc4dee7094f8b99c4dcddd6eb2180cf044c7396baf6fc2f                       67.1s
 => => sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f 243B / 243B                     153.1s
 => => sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba 17.15MB / 17.15MB               171.6s
 => => sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768 3.08MB / 3.08MB                 173.2s
 => => extracting sha256:2cf9c2b42f41b1845f3e4421b723d56146db82939dc884555e077768e18132f4                       11.8s
 => => extracting sha256:c4c40c3e3cdf945721f480e1d939aac857876fdb5c33b8fbfcf655c63b0b9428                       38.7s
 => => extracting sha256:c05cc1123d7e335d59b0f465c23b7ad2ad27f4875b6c3eab41c65a9b50efa382                       69.0s
 => => extracting sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697                        3.7s
 => => extracting sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba                        5.8s
 => => extracting sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f                        0.0s
 => => extracting sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768                        3.3s
 => [internal] load build context                                                                                3.1s
 => => transferring context: 27.92kB                                                                             0.4s
 => [2/7] WORKDIR /app                                                                                           3.8s
 => [3/7] COPY app.py /app                                                                                       2.4s
 => [4/7] COPY requirements.txt /app                                                                             2.7s
 => [5/7] COPY model /app/model                                                                                  2.6s
 => [6/7] COPY ms /app/ms                                                                                        3.1s
 => [7/7] RUN pip install -r requirements.txt                                                                  379.2s
 => exporting to image                                                                                          25.6s
 => => exporting layers                                                                                         24.0s
 => => writing image sha256:da2322baa35a7efb1ee230c71338070e2266f1ee90788f8163659ded3c08b773                     0.1s
 => => naming to docker.io/library/microservices_w11_assignment                                                  0.4s
```

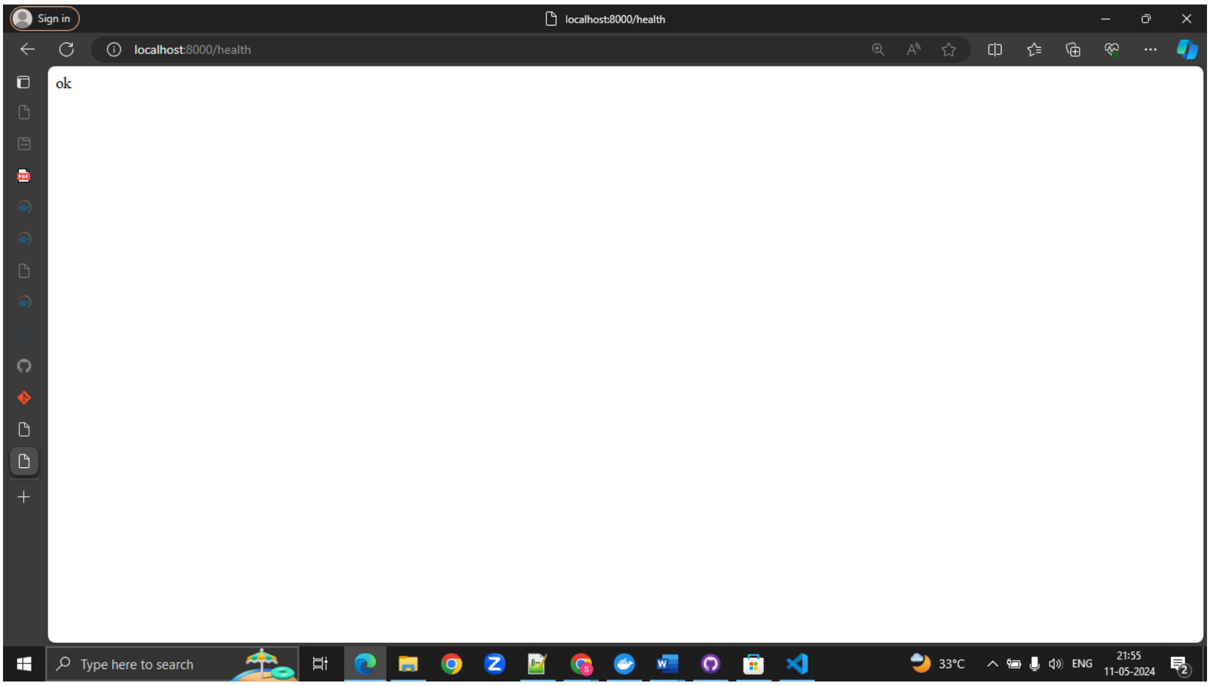
Docker run:



```
 => => sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697 6.39MB / 6.39MB       151.5s
 => => extracting sha256:1468e7ff95fcb865fbc4dee7094f8b99c4dcddd6eb2180cf044c7396baf6fc2f             67.1s
 => => sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f 243B / 243B           153.1s
 => => sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba 17.15MB / 17.15MB     171.6s
 => => sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768 3.08MB / 3.08MB       173.2s
 => => extracting sha256:2cf9c2b42f41b1845f3e4421b723d56146db82939dc884555e077768e18132f4             11.8s
 => => extracting sha256:c4c40c3e3cdf945721f480e1d939aac857876fdb5c33b8fbfcf655c63b0b9428             38.7s
 => => extracting sha256:c05cc1123d7e335d59b0f465c23b7ad2ad27f4875b6c3eab41c65a9b50efa382             69.0s
 => => extracting sha256:b6f29ccdcc551647511d3473f89c94b2ee7fbce3e65226908ea74cfc5c586697              3.7s
 => => extracting sha256:7746f0895c6520d3bc85d29f2aae218a93ccb7f7b71bb9682312a1265df815ba              5.8s
 => => extracting sha256:096b0369c441cc5e4a358c4a15a7904e8cbb1a3bf4b4375fa3f0a5b7fedf240f              0.0s
 => => extracting sha256:1c7299ff637994036bf75e36cebf6f6f68e2c747c81d936c47de3faaea59d768              3.3s
 => [internal] load build context                                                                      3.1s
 => => transferring context: 27.92kB                                                                   0.4s
 => [2/7] WORKDIR /app                                                                                 3.8s
 => [3/7] COPY app.py /app                                                                             2.4s
 => [4/7] COPY requirements.txt /app                                                                   2.7s
 => [5/7] COPY model /app/model                                                                        2.6s
 => [6/7] COPY ms /app/ms                                                                              3.1s
 => [7/7] RUN pip install -r requirements.txt                                                        379.2s
 => exporting to image                                                                                25.6s
 => => exporting layers                                                                               24.0s
 => => writing image sha256:da2322baa35a7efb1ee230c71338070e2266f1ee90788f8163659ded3c08b773           0.1s
 => => naming to docker.io/library/microservices_w11_assignment                                        0.4s
WARNING: current commit information was not captured by the build: git was not found in the system: exec: "git.exe": executable
file not found in %PATH%

View build details: docker-desktop://dashboard/build/default/default/aa3wl4hxr15r9zbsgofijjx5x

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview
(venv) PS C:\Users\SWATHI\Documents\GitHub\Microservices> docker run -p 8000:5000 microservices_w11_assignment
[2024-05-11 16:13:28 +0000] [1] [INFO] Starting gunicorn 20.1.0
[2024-05-11 16:13:29 +0000] [1] [INFO] Listening at: http://0.0.0.0:5000 (1)
[2024-05-11 16:13:29 +0000] [1] [INFO] Using worker: sync
[2024-05-11 16:13:29 +0000] [6] [INFO] Booting worker with pid: 6
```

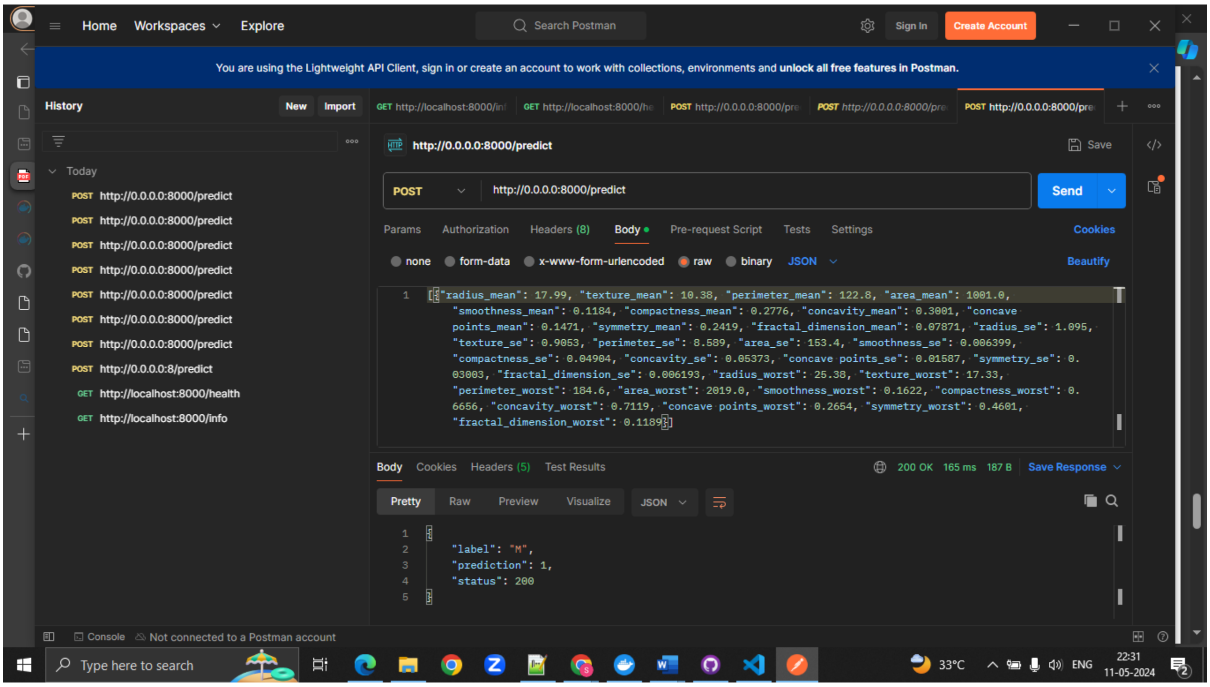


```
{
    "name": "Breast Cancer Wisconsin (Diagnostic)",
    "version": "v1.0.0"
}
```



```
ok
```

Curl isn’t working, so posted it on the “Postman” application.



Home
Workspaces
Explore
Search Postman
Sign In
Create Account
You are using the Lightweight API Client, sign in or create an account to work with collections, environments and unlock all free features in Postman.
History
New
Import
Today

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8000/predict

POST http://0.0.0.0:8/predict

GET http://localhost:8000/health

GET http://localhost:8000/info

POST http://0.0.0.0:8000/predict

```
[{"radius_mean": 17.99, "texture_mean": 10.38, "perimeter_mean": 122.8, "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": 0.1622, "compactness_worst": 0.
  6656, "concavity_worst": 0.7119, "concave points_worst": 0.2654, "symmetry_worst": 0.4601,
  "fractal_dimension_worst": 0.1189}]
```

200 OK 165 ms 187 B

```
{
    "label": "M",
    "prediction": 1,
    "status": 200
}
```