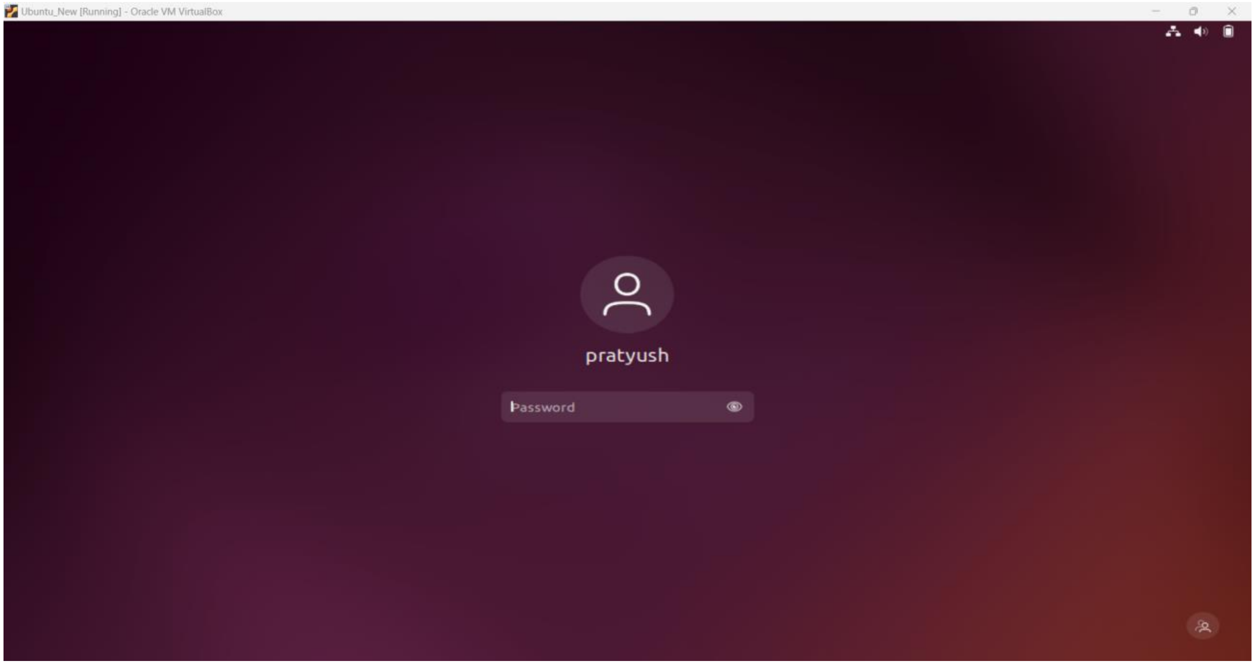
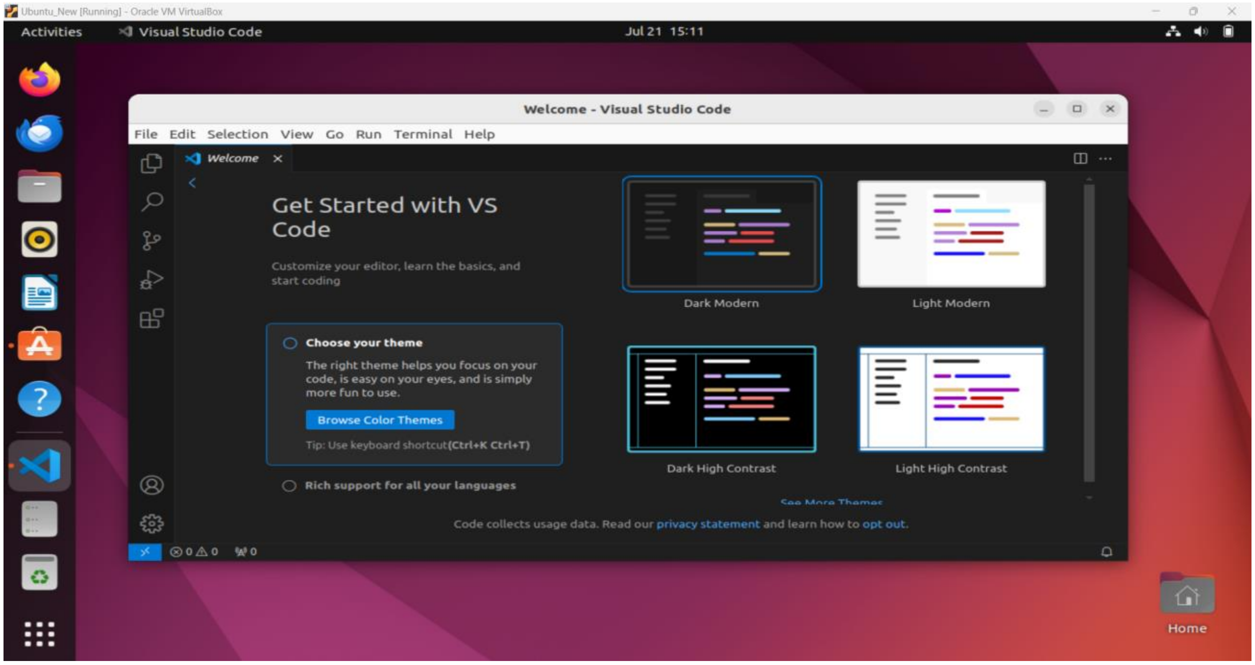
1. Host a Ubuntu Virtual Machine using Oracle VM Virtual Box.



2. Set up Visual Studio code on Ubuntu VM.



Get Started with VS Code

Customize your editor, learn the basics, and start coding

○ Choose your theme

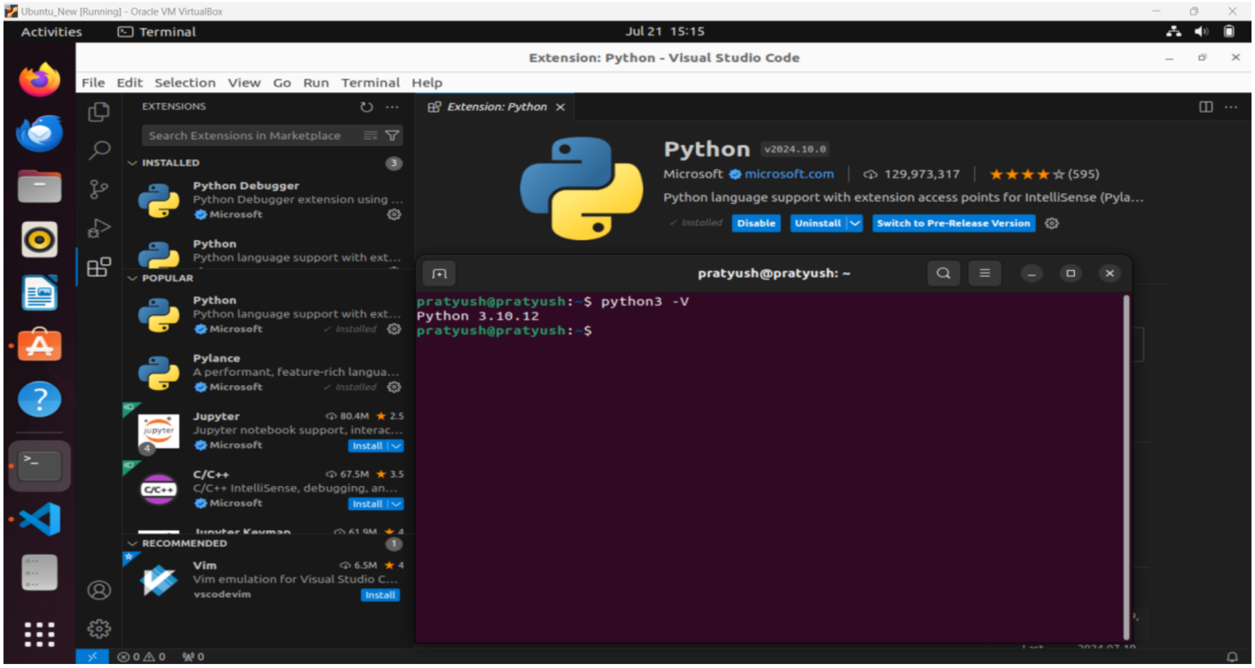
The right theme helps you focus on your code, is easy on your eyes, and is simply more fun to use.

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

○ Rich support for all your languages

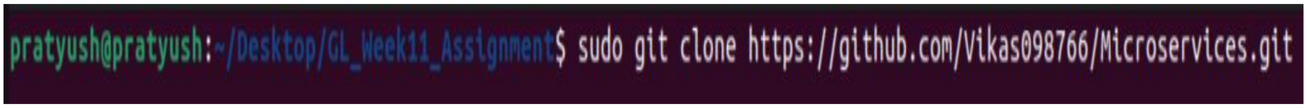
Code collects usage data. Read our privacy statement and learn how to opt out.

3. Set up Python.


Ubuntu_New [Running] - Oracle VM VirtualBox
Activities
Terminal
Jul 21 15:15
Extension: Python - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXTENSIONS
Search Extensions in Marketplace
INSTALLED
Python Debugger
Python Debugger extension using ...
Microsoft
Python
Python language support with ext...
POPULAR
Python
Python language support with ext...
Microsoft
Installed
Pylance
A performant, feature-rich langua...
Microsoft
Installed
Jupyter
80.4M 2.5
Jupyter notebook support, interac...
Microsoft
Install
C/C++
67.5M 3.5
C/C++ IntelliSense, debugging, an...
Microsoft
Install
RECOMMENDED
Vim
6.5M 4
Vim emulation for Visual Studio C...
vscodevim
Install
Extension: Python
Python v2024.10.0
Microsoft microsoft.com 129,973,317 ★★★★☆ (595)
Python language support with extension access points for IntelliSense (Pyla...
Installed
Disable
Uninstall
Switch to Pre-Release Version
pratyush@pratyush: ~

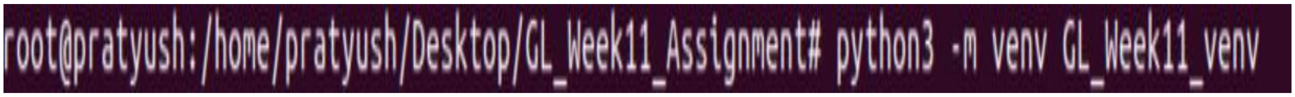
```
pratyush@pratyush:~$ python3 -V
Python 3.10.12
pratyush@pratyush:~$
```

4. Clone Repository



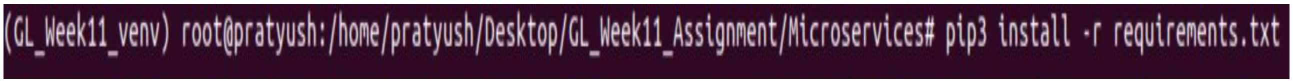
```
pratyush@pratyush:~/Desktop/GL_Week11_Assignment$ sudo git clone https://github.com/Vikas098766/Microservices.git
```

5. Create Virtual Environment



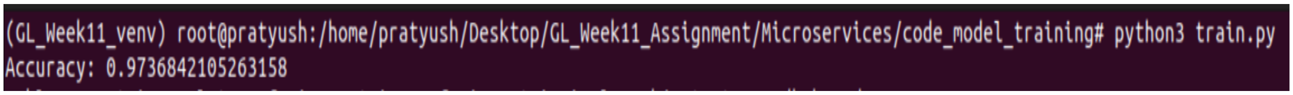
```
root@pratyush:/home/pratyush/Desktop/GL_Week11_Assignment# python3 -m venv GL_Week11_venv
```

6. Install dependencies from requirement.txt file.



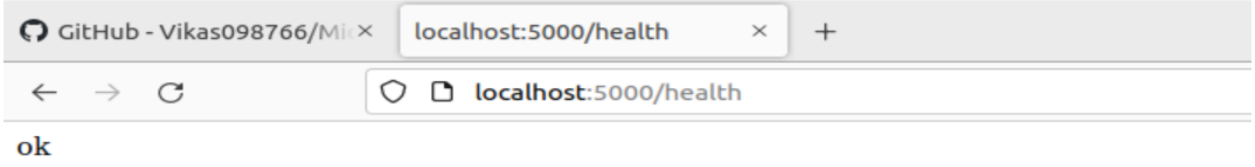
```
(GL_Week11_venv) root@pratyush:/home/pratyush/Desktop/GL_Week11_Assignment/Microservices# pip3 install -r requirements.txt
```

7. Train and save the model.

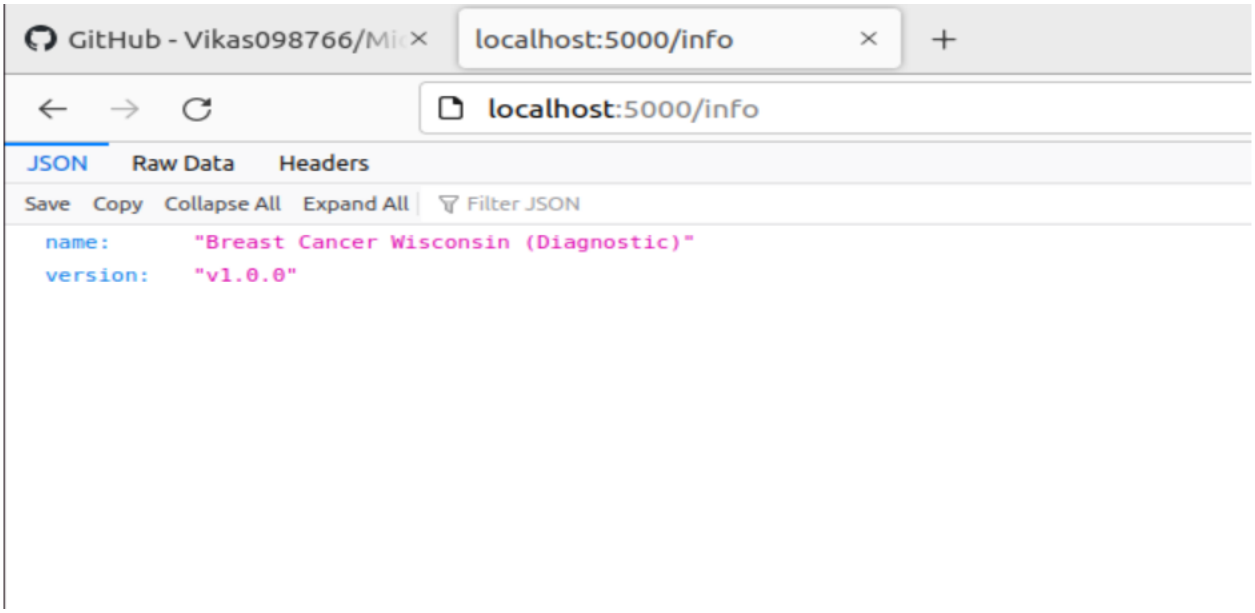


```
(GL_Week11_venv) root@pratyush:/home/pratyush/Desktop/GL_Week11_Assignment/Microservices/code_model_training# python3 train.py
Accuracy: 0.9736842105263158
```

8. Test Flask Application.

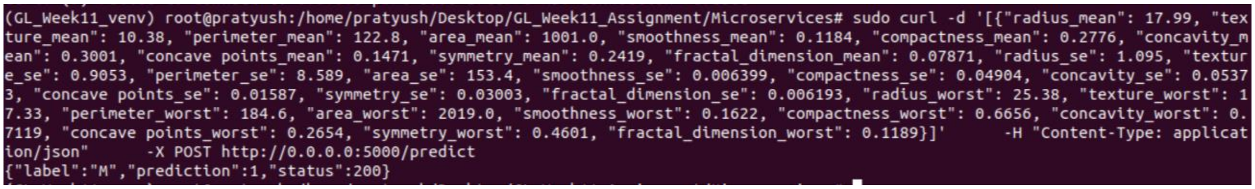


ok



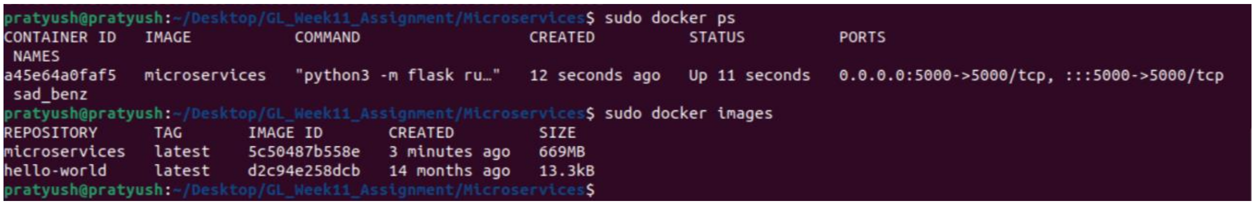
```
name:      "Breast Cancer Wisconsin (Diagnostic)"
version:   "v1.0.0"
```

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



```
(GL_Week11_venv) root@pratyush:/home/pratyush/Desktop/GL_Week11_Assignment/Microservices# sudo curl -d '[{"radius_mean": 17.99, "tex
ture_mean": 10.38, "perimeter_mean": 122.8, "area_mean": 1001.0, "smoothness_mean": 0.1184, "compactness_mean": 0.2776, "concavity_m
ean": 0.3001, "concave points_mean": 0.1471, "symmetry_mean": 0.2419, "fractal_dimension_mean": 0.07871, "radius_se": 1.095, "textur
e_se": 0.9053, "perimeter_se": 8.589, "area_se": 153.4, "smoothness_se": 0.006399, "compactness_se": 0.04904, "concavity_se": 0.0537
3, "concave points_se": 0.01587, "symmetry_se": 0.03003, "fractal_dimension_se": 0.006193, "radius_worst": 25.38, "texture_worst": 1
7.33, "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}]'      -H "Content-Type: applicat
ion/json"      -X POST http://0.0.0.0:5000/predict
{"label":"M","prediction":1,"status":200}
```

10. Create Docker image and run the containerized application.



```
pratyush@pratyush:~/Desktop/GL_Week11_Assignment/Microservices$ sudo docker ps
CONTAINER ID   IMAGE           COMMAND                  CREATED          STATUS          PORTS
 NAMES
a45e64a0faf5   microservices   "python3 -m flask ru…"   12 seconds ago   Up 11 seconds   0.0.0.0:5000->5000/tcp, :::5000->5000/tcp
 sad_benz
pratyush@pratyush:~/Desktop/GL_Week11_Assignment/Microservices$ sudo docker images
REPOSITORY      TAG       IMAGE ID       CREATED          SIZE
microservices   latest    5c50487b558e   3 minutes ago    669MB
hello-world     latest    d2c94e258dcb   14 months ago    13.3kB
pratyush@pratyush:~/Desktop/GL_Week11_Assignment/Microservices$
```