Week4: Deployment on Flask

Name : Surabhi Mahawar

Batch code : LISUM10:30

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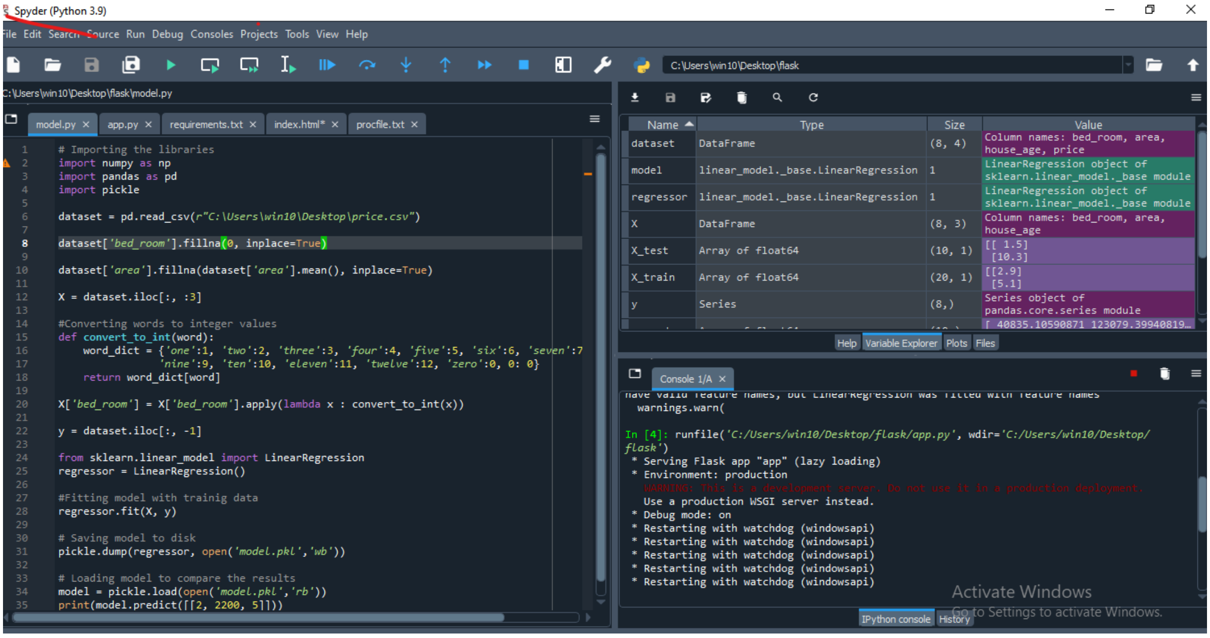
Submitted to : Data glacier virtual internship

Snapshot

Step1)Create a model



```python
# Importing the libraries
import numpy as np
import pandas as pd
import pickle

dataset = pd.read_csv(r"C:\Users\win10\Desktop\price.csv")

dataset['bed_room'].fillna(0, inplace=True)

dataset['area'].fillna(dataset['area'].mean(), inplace=True)

X = dataset.iloc[:, :3]

#Converting words to integer values
def convert_to_int(word):
    word_dict = {'one':1, 'two':2, 'three':3, 'four':4, 'five':5, 'six':6, 'seven':7
                'nine':9, 'ten':10, 'eleven':11, 'twelve':12, 'zero':0, 0: 0}
    return word_dict[word]

X['bed_room'] = X['bed_room'].apply(lambda x : convert_to_int(x))

y = dataset.iloc[:, -1]

from sklearn.linear_model import LinearRegression
regressor = LinearRegression()

#Fitting model with trainig data
regressor.fit(X, y)

# Saving model to disk
pickle.dump(regressor, open('model.pkl','wb'))

# Loading model to compare the results
model = pickle.load(open('model.pkl','rb'))
print(model.predict([[2, 2200, 5]]))
```

Name	Type	Size	Value
dataset	DataFrame	(8, 4)	Column names: bed_room, area, house_age, price
model	linear_model._base.LinearRegression	1	LinearRegression object of sklearn.linear_model._base module
regressor	linear_model._base.LinearRegression	1	LinearRegression object of sklearn.linear_model._base module
X	DataFrame	(8, 3)	Column names: bed_room, area, house_age
X_test	Array of float64	(10, 1)	[[1.5] [10.3]
X_train	Array of float64	(20, 1)	[[2.9] [5.1]
y	Series	(8,)	Series object of pandas.core.series module
			[40835.10590871 123079.39940819…

```
have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(

In [4]: runfile('C:/Users/win10/Desktop/flask/app.py', wdir='C:/Users/win10/Desktop/
flask')
 * Serving Flask app "app" (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with watchdog (windowsapi)
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 * Restarting with watchdog (windowsapi)
 * Restarting with watchdog (windowsapi)
```
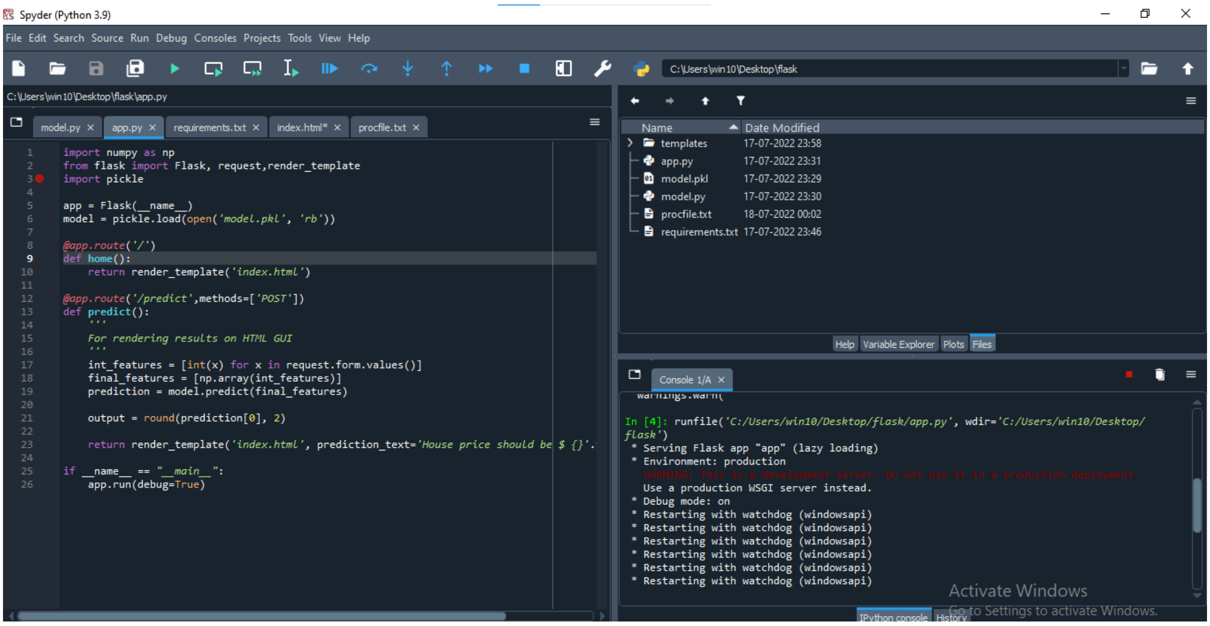

Activate Windows
Go to Settings to activate Windows.

Step2)create app.py


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\win10\Desktop\flask
C:\Users\win10\Desktop\flask\app.py
model.py
app.py
requirements.txt
index.html*
procfile.txt
Help
Variable Explorer
Plots
Files
Console 1/A
IPython console
History
Activate Windows
Go to Settings to activate Windows.

```python
import numpy as np
from flask import Flask, request,render_template
import pickle

app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/predict',methods=['POST'])
def predict():
    '''
    For rendering results on HTML GUI
    '''
    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    return render_template('index.html', prediction_text='House price should be $ {}'.

if __name__ == "__main__":
    app.run(debug=True)
```

Name	Date Modified
templates	17-07-2022 23:58
app.py	17-07-2022 23:31
model.pkl	17-07-2022 23:29
model.py	17-07-2022 23:30
procfile.txt	18-07-2022 00:02
requirements.txt	17-07-2022 23:46

```
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In [4]: runfile('C:/Users/win10/Desktop/flask/app.py', wdir='C:/Users/win10/Desktop/
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```
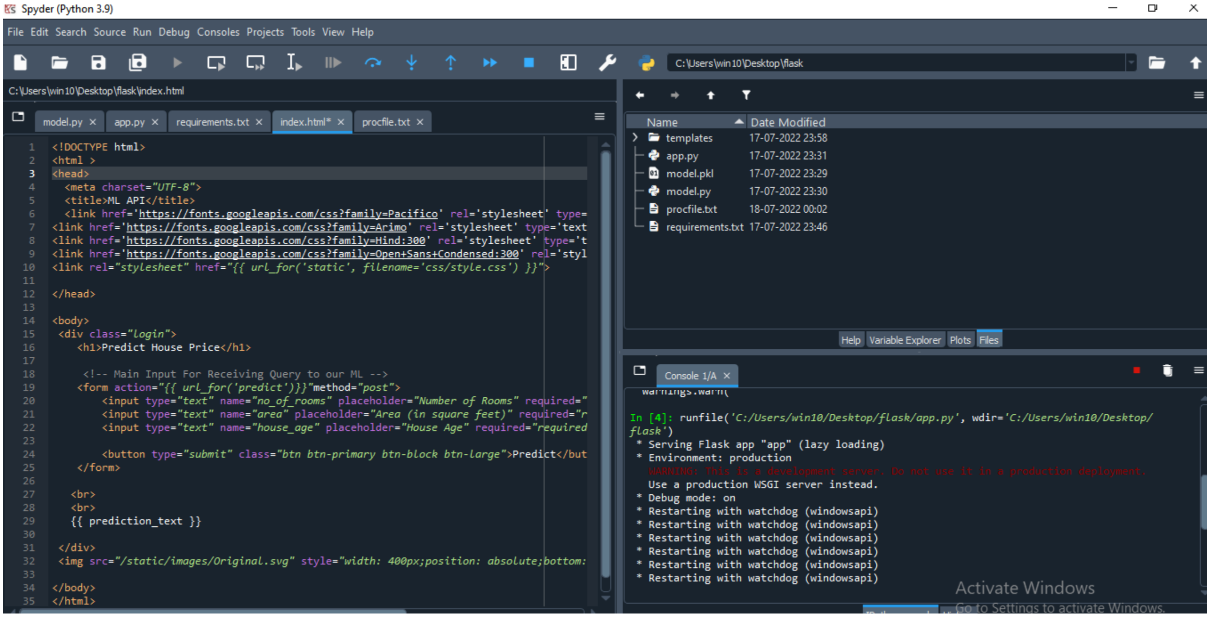

Step3)templates>index.html


Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\win10\Desktop\flask
C:\Users\win10\Desktop\flask\index.html
model.py
app.py
requirements.txt
index.html*
procfile.txt
Help
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Console 1/A
Activate Windows
Go to Settings to activate Windows.

```html
<!DOCTYPE html>
<html >
<head>
  <meta charset="UTF-8">
  <title>ML API</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type=
<link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text
<link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='t
<link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='styl
<link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">

</head>

<body>
 <div class="login">
    <h1>Predict House Price</h1>

     <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('predict')}}"method="post">
        <input type="text" name="no_of_rooms" placeholder="Number of Rooms" required="
        <input type="text" name="area" placeholder="Area (in square feet)" required="r
        <input type="text" name="house_age" placeholder="House Age" required="required

        <button type="submit" class="btn btn-primary btn-block btn-large">Predict</but
    </form>

   <br>
   <br>
   {{ prediction_text }}

 </div>
 <img src="/static/images/Original.svg" style="width: 400px;position: absolute;bottom:

</body>
</html>
```

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```
  warnings.warn(

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```
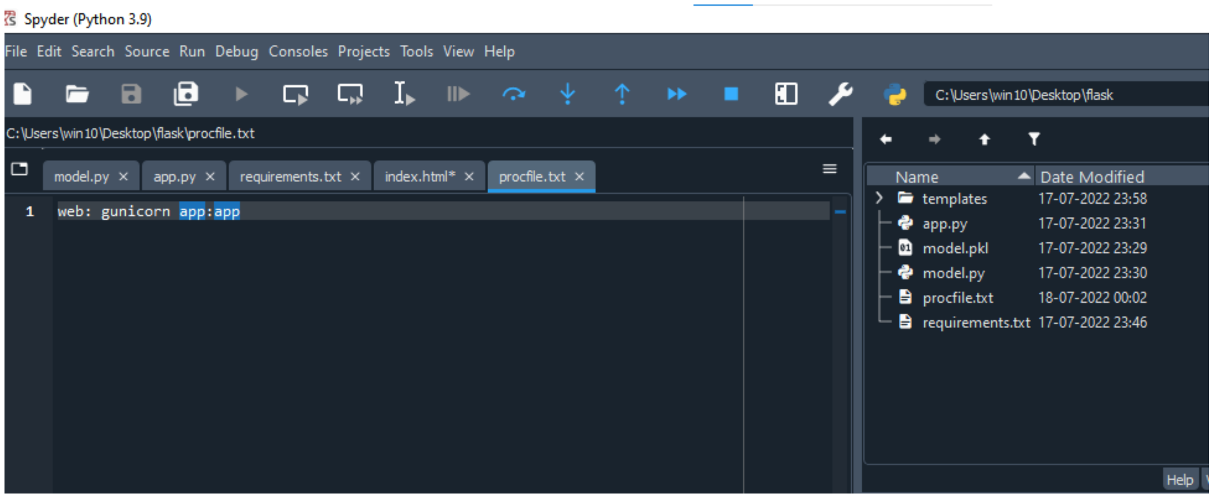

Step4)procfile



Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\win10\Desktop\flask
C:\Users\win10\Desktop\flask\procfile.txt
model.py × app.py × requirements.txt × index.html* × procfile.txt ×
Help

```
web: gunicorn app:app
```

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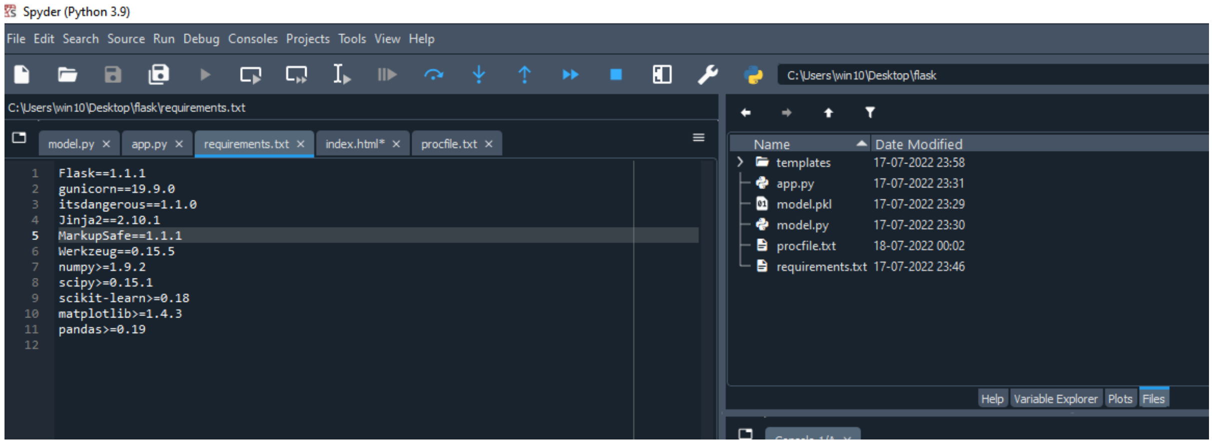
Step5)requirements.txt



Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\win10\Desktop\flask
C:\Users\win10\Desktop\flask\requirements.txt
model.py × app.py × requirements.txt × index.html* × procfile.txt ×
Help Variable Explorer Plots Files

```
Flask==1.1.1
gunicorn==19.9.0
itsdangerous==1.1.0
Jinja2==2.10.1
MarkupSafe==1.1.1
Werkzeug==0.15.5
numpy>=1.9.2
scipy>=0.15.1
scikit-learn>=0.18
matplotlib>=1.4.3
pandas>=0.19
```

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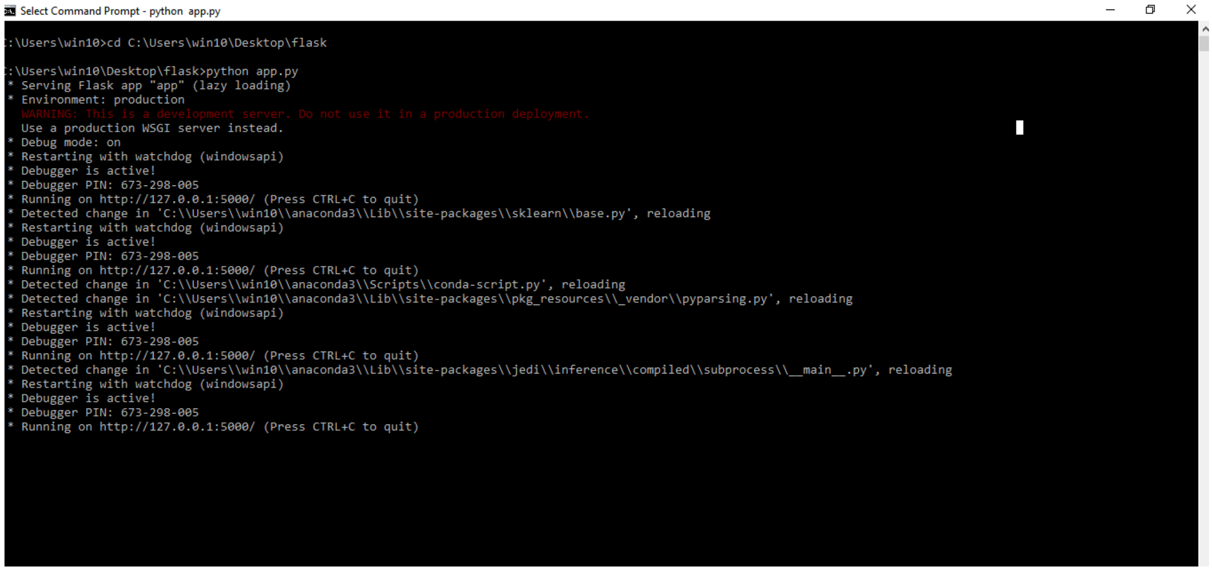
requirements.txt	17-07-2022 23:46

Then run web app in local environment::



```
:\Users\win10>cd C:\Users\win10\Desktop\flask

:\Users\win10\Desktop\flask>python app.py
 * Serving Flask app "app" (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
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 * Debug mode: on
 * Restarting with watchdog (windowsapi)
 * Debugger is active!
 * Debugger PIN: 673-298-005
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
 * Detected change in 'C:\\Users\\win10\\anaconda3\\Lib\\site-packages\\sklearn\\base.py', reloading
 * Restarting with watchdog (windowsapi)
 * Debugger is active!
 * Debugger PIN: 673-298-005
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
 * Detected change in 'C:\\Users\\win10\\anaconda3\\Scripts\\conda-script.py', reloading
 * Detected change in 'C:\\Users\\win10\\anaconda3\\Lib\\site-packages\\pkg_resources\\_vendor\\pyparsing.py', reloading
 * Restarting with watchdog (windowsapi)
 * Debugger is active!
 * Debugger PIN: 673-298-005
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
 * Detected change in 'C:\\Users\\win10\\anaconda3\\Lib\\site-packages\\jedi\\inference\\compiled\\subprocess\\__main__.py', reloading
 * Restarting with watchdog (windowsapi)
 * Debugger is active!
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```
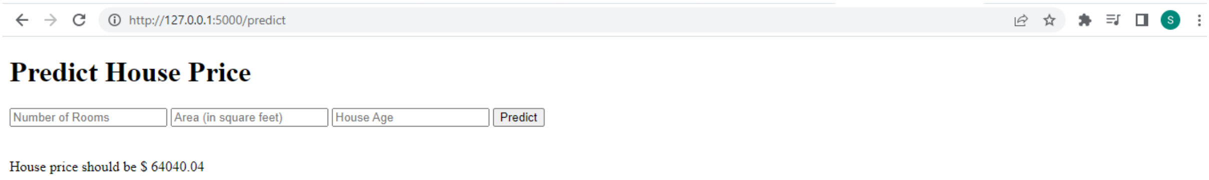

App works:



Predict House Price

House price should be $ 64040.04