

Deployment on Flask

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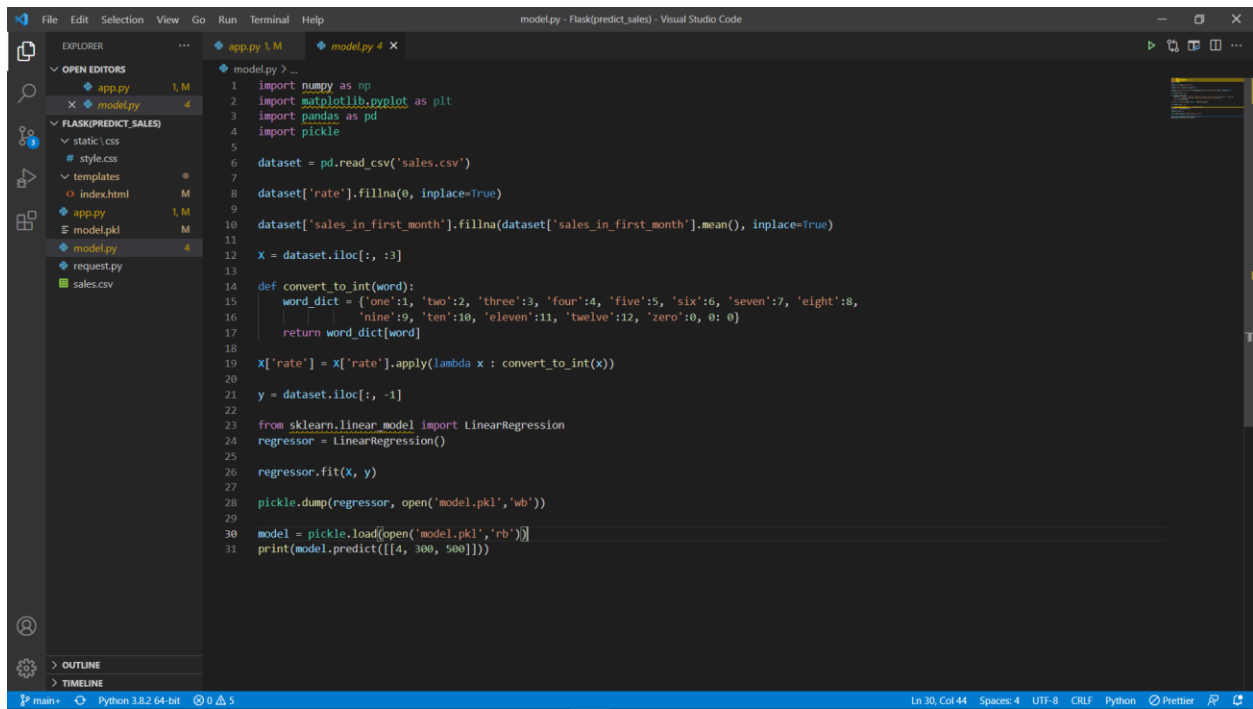
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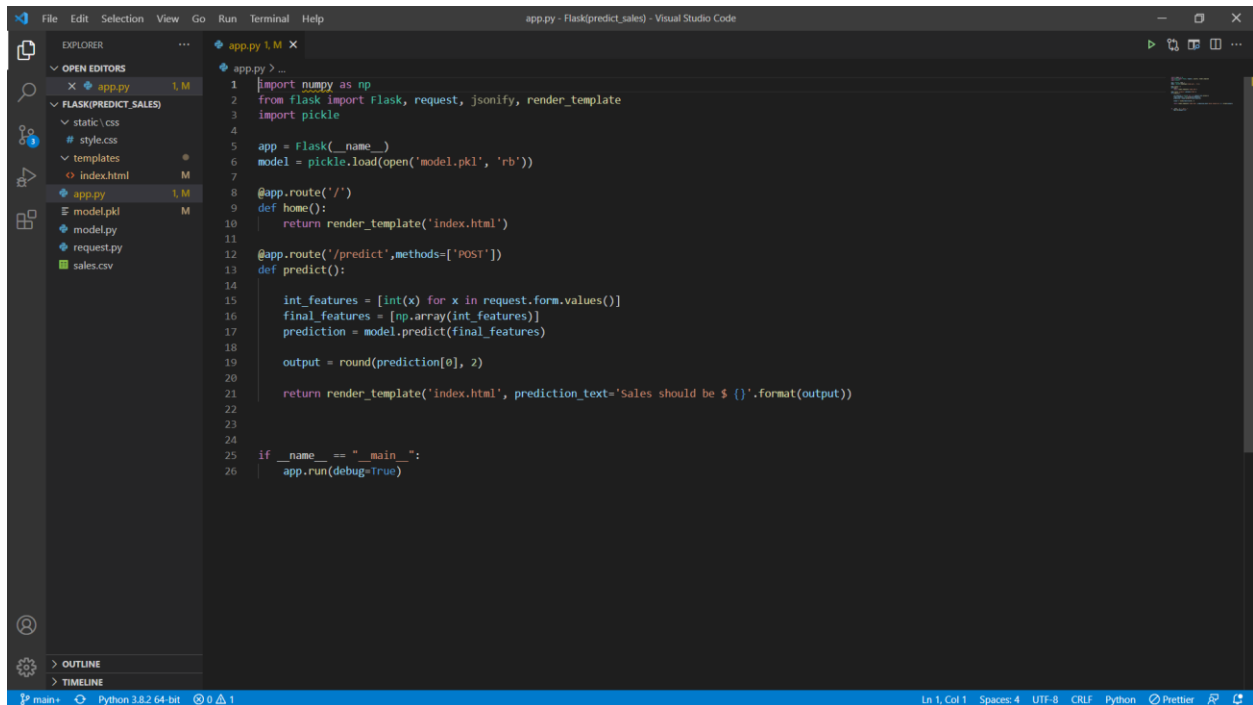
https://github.com/Mukhammadj/Flask_sales_prediction_project

A model ready to deploy



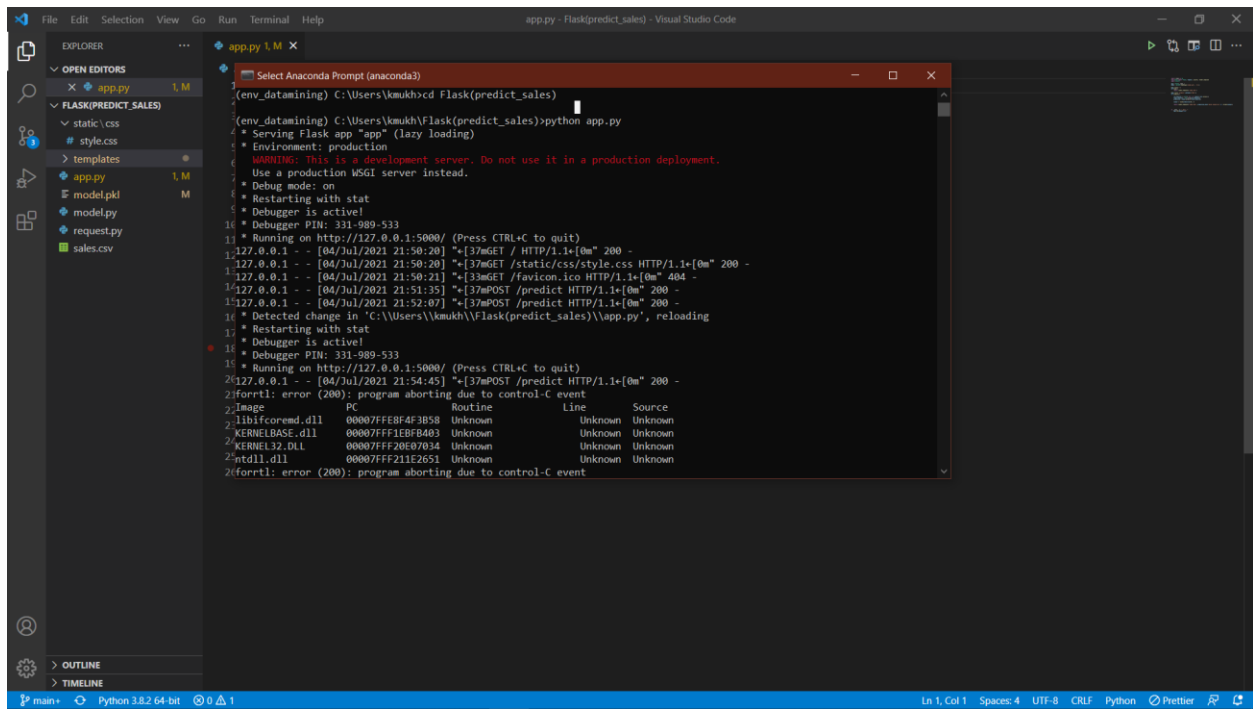
```
1 import numpy as np
2 import matplotlib.pyplot as plt
3 import pandas as pd
4 import pickle
5
6 dataset = pd.read_csv('sales.csv')
7
8 dataset['rate'].fillna(0, inplace=True)
9
10 dataset['sales_in_first_month'].fillna(dataset['sales_in_first_month'].mean(), inplace=True)
11
12 X = dataset.iloc[:, :3]
13
14 def convert_to_int(word):
15     word_dict = {'one':1, 'two':2, 'three':3, 'four':4, 'five':5, 'six':6, 'seven':7, 'eight':8,
16                 'nine':9, 'ten':10, 'eleven':11, 'twelve':12, 'zero':0, 0: 0}
17     return word_dict[word]
18
19 X['rate'] = X['rate'].apply(lambda x : convert_to_int(x))
20
21 y = dataset.iloc[:, -1]
22
23 from sklearn.linear_model import LinearRegression
24 regressor = LinearRegression()
25
26 regressor.fit(X, y)
27
28 pickle.dump(regressor, open('model.pkl','wb'))
29
30 model = pickle.load(open('model.pkl','rb'))
31 print(model.predict([[4, 300, 500]]))
```

Developing a web service app.py



```
1 import numpy as np
2 from flask import Flask, request, jsonify, render_template
3 import pickle
4
5 app = Flask(__name__)
6 model = pickle.load(open('model.pkl', 'rb'))
7
8 @app.route('/')
9 def home():
10     return render_template('index.html')
11
12 @app.route('/predict', methods=['POST'])
13 def predict():
14
15     int_features = [int(x) for x in request.form.values()]
16     final_features = [np.array(int_features)]
17     prediction = model.predict(final_features)
18
19     output = round(prediction[0], 2)
20
21     return render_template('index.html', prediction_text='Sales should be ${}'.format(output))
22
23
24
25 if __name__ == "__main__":
26     app.run(debug=True)
```

Running the program on cmd



The screenshot shows the Visual Studio Code interface with a project named 'Flask(predict_sales)'. The Explorer panel on the left shows the file structure, including 'app.py', 'static/css', 'templates', 'model.pkl', 'model.py', 'request.py', and 'sales.csv'. The main editor window displays the 'app.py' file. A terminal window is open at the bottom, showing the command prompt and the output of running the application. The output indicates that the application is running on http://127.0.0.1:5000/ and shows several HTTP requests and responses. A warning message is also displayed: 'WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.' The terminal also shows a 'Detected change' in 'app.py' and a 'Restarting with stat' message. The status bar at the bottom indicates the Python version is 3.8.2 64-bit.

```
app.py 1, M X
Select Anaconda Prompt (anaconda3)
(env_datamining) C:\Users\kmukh>cd Flask(predict_sales)
(env_datamining) C:\Users\kmukh\Flask(predict_sales)>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.
 Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 331-989-533
1 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [04/Jul/2021 21:50:20] "[37mGET / HTTP/1.1+[0m" 200 -
127.0.0.1 - - [04/Jul/2021 21:50:20] "[37mGET /static/css/style.css HTTP/1.1+[0m" 200 -
127.0.0.1 - - [04/Jul/2021 21:50:21] "[37mGET /favicon.ico HTTP/1.1+[0m" 404 -
127.0.0.1 - - [04/Jul/2021 21:51:35] "[37mPOST /predict HTTP/1.1+[0m" 200 -
127.0.0.1 - - [04/Jul/2021 21:52:07] "[37mPOST /predict HTTP/1.1+[0m" 200 -
1 * Detected change in 'C:\Users\kmukh\Flask(predict_sales)\app.py', reloading
1 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 331-989-533
1 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [04/Jul/2021 21:54:45] "[37mPOST /predict HTTP/1.1+[0m" 200 -
2/forrtl: error (200): program aborting due to control-c event
2/image PC Routine Line Source
2/libifcoremd.dll 00007FFE8F4F3B58 Unknown Unknown Unknown
2/KERNELBASE.dll 00007FFF1E8FB403 Unknown Unknown Unknown
2/KERNEL32.dll 00007FFF20E07034 Unknown Unknown Unknown
2/mdll.dll 00007FFF211E2651 Unknown Unknown Unknown
2/forrtl: error (200): program aborting due to control-c event
```

Results

Deployment Flask

127.0.0.1:5000

Sales Forecasting

rate

sales in first month

sales in second month

Predict sales in third month

Deployment Flask

127.0.0.1:5000/predict

Sales Forecasting

rate

sales in first month

sales in second month

Predict sales in third month

Sales should be \$ 143.31