

Assignment 4: Deployment on Flask

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Batch code:

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Submitted to: Data Glacier

1- Install Flask

```
Command Prompt
Requirement already satisfied: pyparsing>=2.2.1 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from matplotlib) (2.4.7)
Collecting six
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: pillow, six, cycler, kiwisolver, python-dateutil, matplotlib
Successfully installed cycler-0.10.0 kiwisolver-1.3.1 matplotlib-3.4.2 pillow-8.3.1 python-dateutil-2.8.1 six-1.16.0
WARNING: You are using pip version 20.1.1; however, version 21.1.3 is available.
You should consider upgrading via the 'c:\users\alamiya\appdata\local\programs\python\python38\python.exe -m pip install --upgrade pip' command.

C:\Users\Alamiya\Desktop\Ass 3 Flask>pip install pandas
Collecting pandas
  Downloading pandas-1.3.0-cp38-cp38-win_amd64.whl (10.2 MB)
    | 10.2 MB 1.3 MB/s
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from pandas) (2.8.1)
Requirement already satisfied: numpy>=1.17.3 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from pandas) (1.21.0)
Collecting pytz>=2017.3
  Downloading pytz-2021.1-py2.py3-none-any.whl (510 kB)
    | 510 kB 14 kB/s
Requirement already satisfied: six>=1.5 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from python-dateutil>=2.7.3->pandas) (1.16.0)
Installing collected packages: pytz, pandas
Successfully installed pandas-1.3.0 pytz-2021.1
WARNING: You are using pip version 20.1.1; however, version 21.1.3 is available.
You should consider upgrading via the 'c:\users\alamiya\appdata\local\programs\python\python38\python.exe -m pip install --upgrade pip' command.

C:\Users\Alamiya\Desktop\Ass 3 Flask>pip install sklearn
Collecting sklearn
  Downloading sklearn-0.0.tar.gz (1.1 kB)
Collecting scikit-learn
  Downloading scikit-learn-0.24.2-cp38-cp38-win_amd64.whl (6.9 MB)
    | 6.9 MB 309 kB/s
Collecting scipy>=0.19.1
  Downloading scipy-1.7.0-cp38-cp38-win_amd64.whl (33.7 MB)
    | 33.7 MB 134 kB/s
Requirement already satisfied: joblib>=0.11 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from scikit-learn->sklearn) (0.15.1)
Using cached threadpoolctl-2.1.0-py3-none-any.whl (12 kB)
Requirement already satisfied: numpy>=1.13.3 in c:\users\alamiya\appdata\local\programs\python\python38\lib\site-packages (from scikit-learn->sklearn) (1.21.0)
Using legacy setup.py install for sklearn, since package 'wheel' is not installed.
Installing collected packages: scipy, threadpoolctl, scikit-learn, sklearn
  Running setup.py install for sklearn ... done
Successfully installed scikit-learn-0.24.2 scipy-1.7.0 sklearn-0.0 threadpoolctl-2.1.0
WARNING: You are using pip version 20.1.1; however, version 21.1.3 is available.
You should consider upgrading via the 'c:\users\alamiya\appdata\local\programs\python\python38\python.exe -m pip install --upgrade pip' command.

C:\Users\Alamiya\Desktop\Ass 3 Flask>pip install sklearn
```

2- Create model.py which contains model for machine learning code

```
C:\Users\Alamiya\Desktop\Ass 3 Flask\Deployment-flask\model.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window Help
model.py [3]
1 # Importing the libraries
2 import numpy as np
3 import matplotlib.pyplot as plt
4 import pandas as pd
5 import pickle
6
7 dataset = pd.read_csv('hiring.csv')
8
9 dataset['experience'].fillna(0, inplace=True)
10
11 dataset['test_score'].fillna(dataset['test_score'].mean(), inplace=True)
12
13 X = dataset.iloc[:, :3]
14
15 #Converting words to integer values
16 def convert_to_int(word):
17     word_dict = {'one':1, 'two':2, 'three':3, 'four':4, 'five':5, 'six':6,
18                 'nine':9, 'ten':10, 'eleven':11, 'twelve':12, 'zero':0, 0:0}
19     return word_dict[word]
```

3- Create app.py which contains Flask APIs

```
C:\Users\Alamiya\Desktop\Ass 3 Flask\Deployment-flask\app.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
model.py 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     For rendering results on HTML GUI
16     '''
17     int_features = [int(x) for x in request.form.values()]
18     final_features = [np.array(int_features)]
19     prediction = model.predict(final_features)
20
Python file length: 1,004 lines: 37 Ln: 1 Col: 1 Sel: 0|0 Windows (CR LF) UTF-8 INS
```

- 4- Create HTML page using default index, write what you want to display.
- 5- Run model.py

```
MINGW64/C:/Users/Alamiya/Desktop/Ass 3 Flask/Deployment-flask
Alamiya@Alamiya-PC MINGW64 ~/Desktop/Ass 3 Flask/Deployment-flask (master)
$ python model.py
[53290.89255945]
Alamiya@Alamiya-PC MINGW64 ~/Desktop/Ass 3 Flask/Deployment-flask (master)
$
```

- 6- Run App.py
Copy and paste <http://127.0.0.1:5000/> in web browser

MINGW64/c/Users/Alamiya/Desktop/Ass 3 Flask/Deployment-flask

```
Alamiya@Alamiya-PC MINGW64 ~/Desktop/Ass 3 Flask/Deployment-flask (master)
$ python model.py
[53290.89255945]

Alamiya@Alamiya-PC MINGW64 ~/Desktop/Ass 3 Flask/Deployment-flask (master)
$ 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: 145-196-594
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

Activate Windows
Go to Settings to activate Windows.