Week 5: Deployment on Cloud

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1. **Choosing a simple data set.**
   Our job is to build ML model to predict the salary

	A	B	C	D
1	experience	test_score	interview_score	salary
2	0	8	9	50000
3	0	8	6	45000
4	5	6	7	60000
5	2	10	10	65000
6	7	9	6	70000
7	3	7	10	62000
8	10	7	7	72000
9	11	7	8	80000

2. **Saving the model.**

   Importing pandas, pickle and csv file

```
import pandas as pd
import pickle

data = pd.read_csv('hiring.csv')
```

Split our data into training and testing datasets

```
X = data.iloc[:, :3]

y = data.iloc[:, -1]
```

```
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()

regressor.fit(X, y)
```

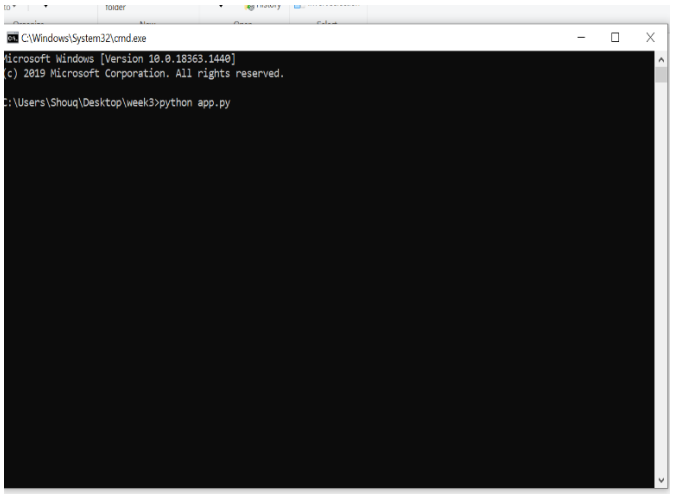
And finally pickle our model

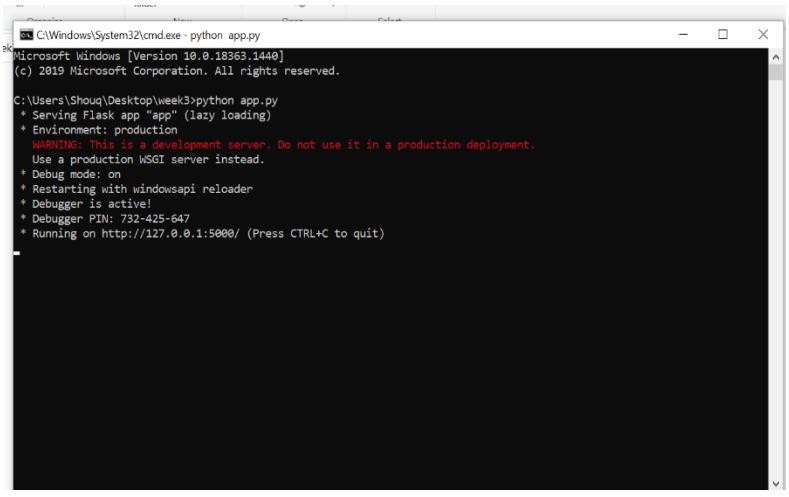
```
pickle_file = open('model.pkl','wb')
pickle.dump(regressor,pickle_file)
```

3. Deployment using Flask.

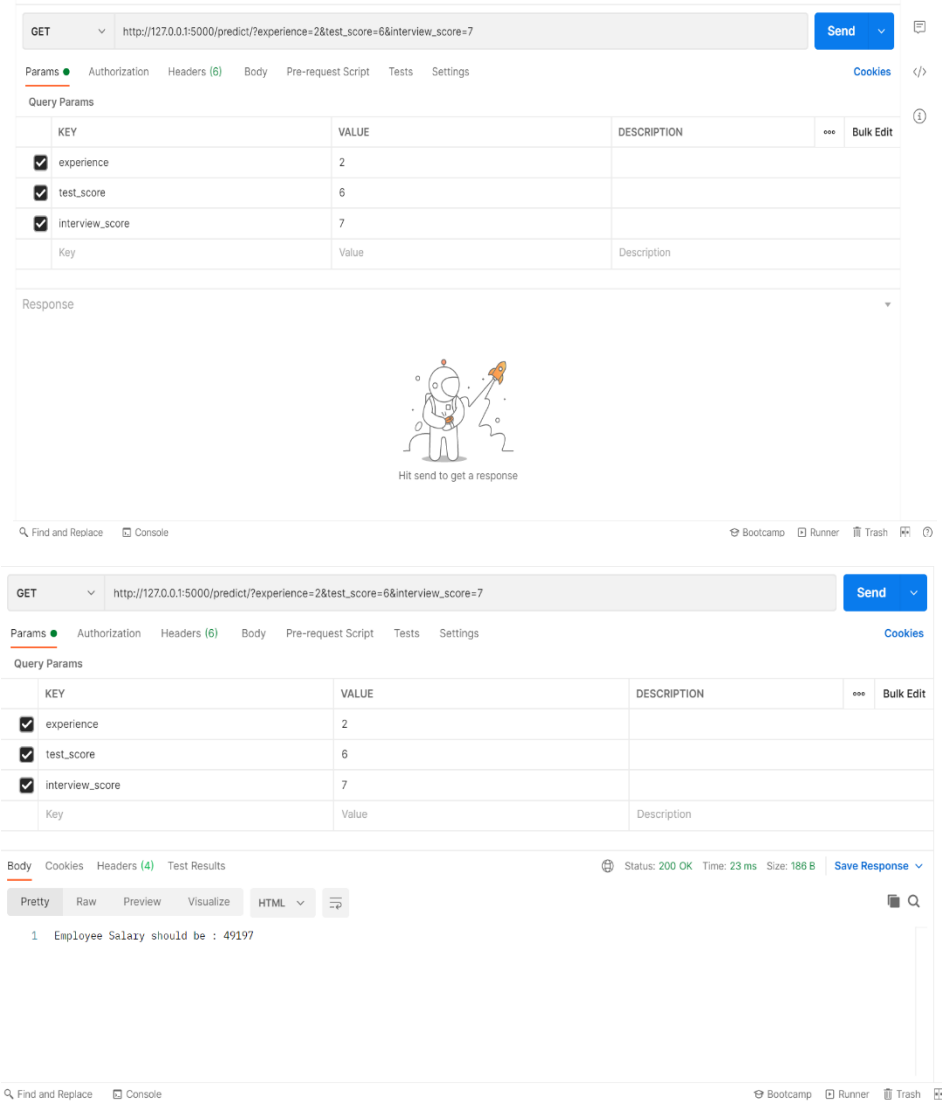
```
import numpy as np
import pandas as pd
from flask import Flask , request, jsonify
import pickle

app = Flask(__name__)
@app.route('/', methods=['GET','POST'])
def home():
    if(request.method == 'GET'):
     da = 'hello world'
    return jsonify({'data': da})


@app.route('/predict/')
def predict_salary():

    unpickled_file = open('model.pkl', 'rb')
    model=pickle.load(unpickled_file)

    experience = request.args.get('experience')
    test_score = request.args.get('test_score')
    interview_score = request.args.get('interview_score')

    test_df =pd.DataFrame({'Experience':[experience], 'Test Score':[test_score], 'Interview Score':[interview_score]})

    prediction = int(model.predict(test_df)[0])
    return 'Employee Salary should be : ' + str(prediction)
if __name__ == "__main__":
    app.run(port=5000, debug=True)

```

Running app.py in terminal window.



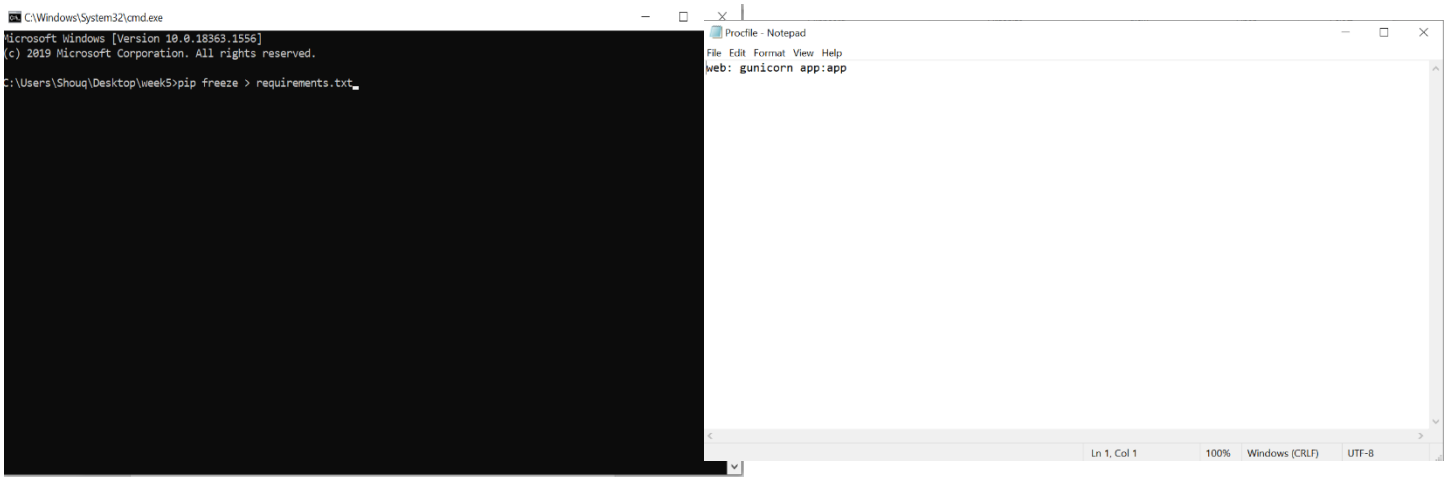


4. Testing API using postman.

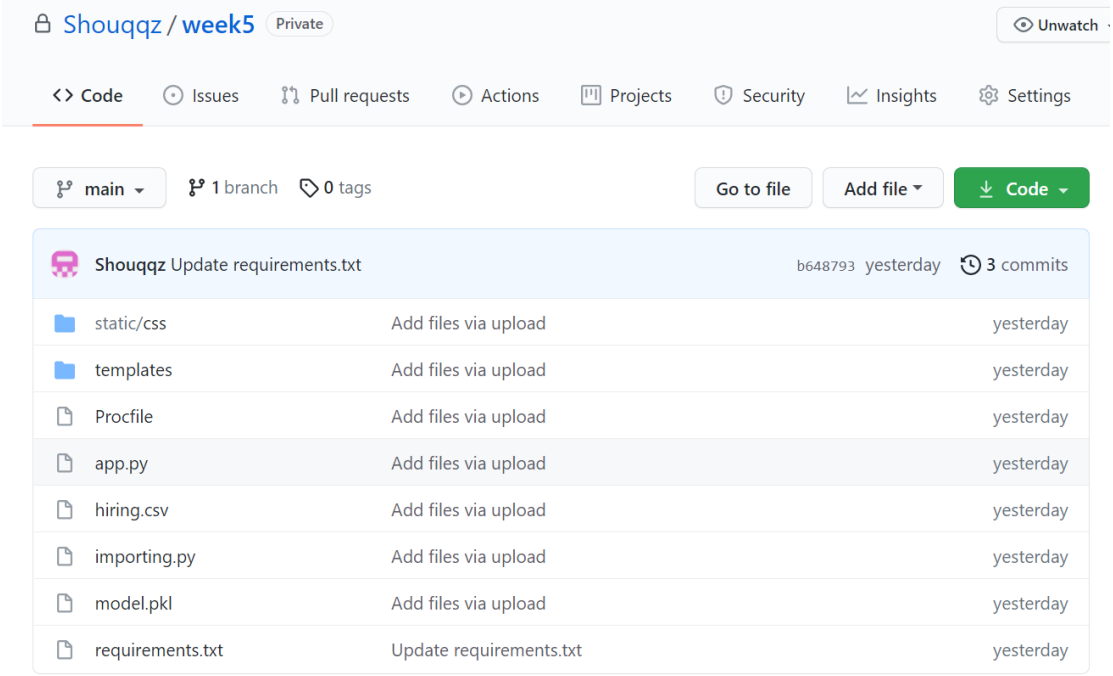


5. Deployment on Cloud.

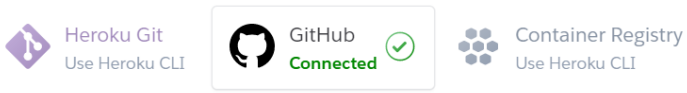
Create requirement and procfile files.

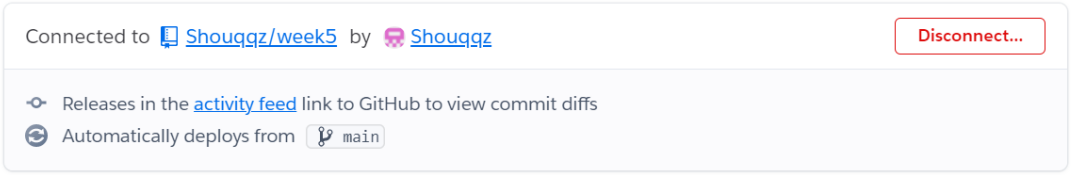


Upload on GitHub.

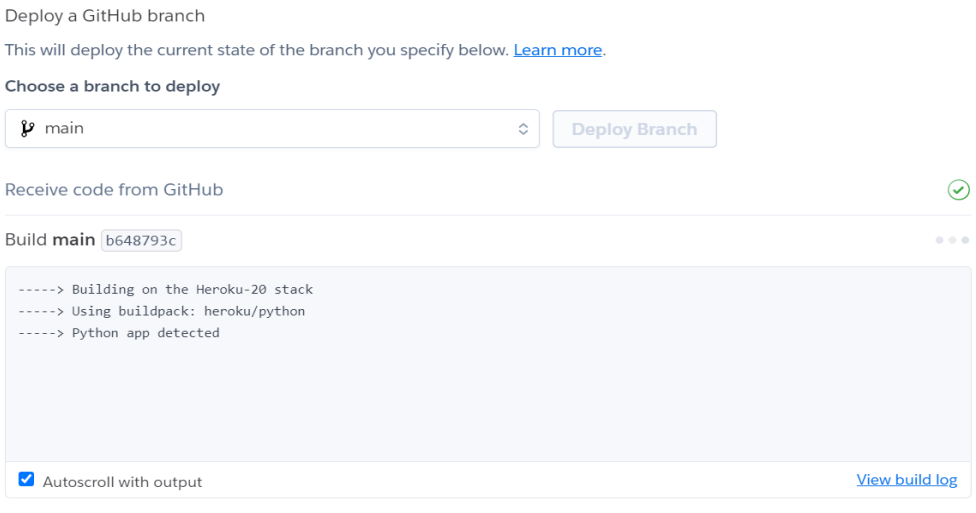


Connect Heroku with Github.





Deploy the model.



Deploy a GitHub branch

This will deploy the current state of the branch you specify below. Learn more.

Choose a branch to deploy

main | Deploy Branch

Receive code from GitHub

Build **main** `b648793c`

Release phase

Deploy to Heroku

Your app was successfully deployed.

View