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Batch code: LISP01

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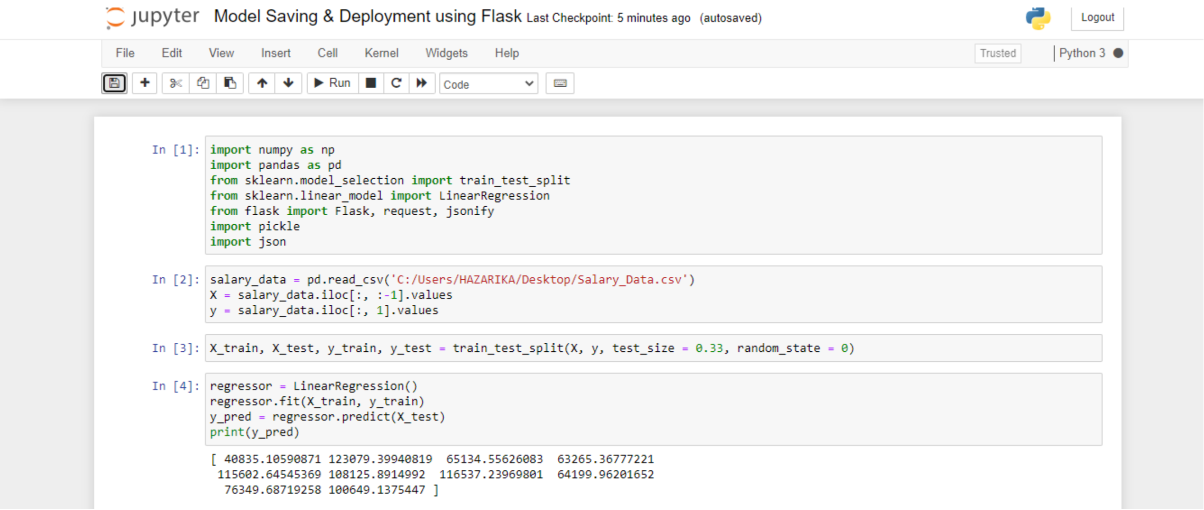
Submitted to: Data Glacier

Deployment on Flask

Step 1:

Develop ML model:

Predict the salary of an employee based on experience using Linear Regression Model.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Model Saving & Deployment using Flask Last Checkpoint: 5 minutes ago (autosaved)
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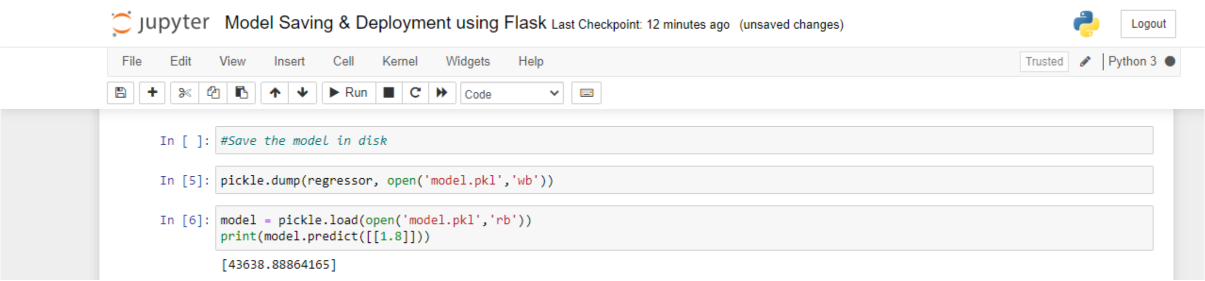
Python 3
Run
Code

```
In [1]: import numpy as np
        import pandas as pd
        from sklearn.model_selection import train_test_split
        from sklearn.linear_model import LinearRegression
        from flask import Flask, request, jsonify
        import pickle
        import json

In [2]: salary_data = pd.read_csv('C:/Users/HAZARIKA/Desktop/Salary_Data.csv')
        X = salary_data.iloc[:, :-1].values
        y = salary_data.iloc[:, 1].values

In [3]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.33, random_state = 0)

In [4]: regressor = LinearRegression()
        regressor.fit(X_train, y_train)
        y_pred = regressor.predict(X_test)
        print(y_pred)

        [ 40835.10590871 123079.39940819  65134.55626083  63265.36777221
         115602.64545369 108125.8914992  116537.23969801  64199.96201652
          76349.68719258 100649.1375447 ]
```

Step 2:

Saving the trained model to the disk using the *pickle* library.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Code

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In [ ]: #Save the model in disk

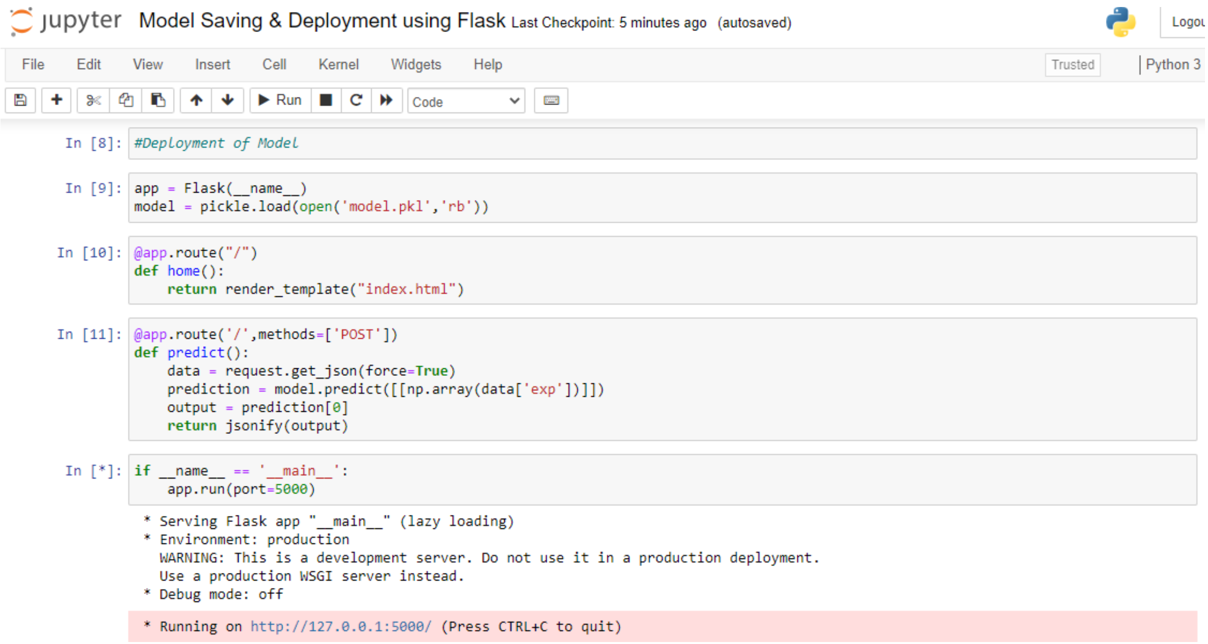
In [5]: pickle.dump(regressor, open('model.pkl','wb'))

In [6]: model = pickle.load(open('model.pkl','rb'))
        print(model.predict([[1.8]]))

        [43638.88864165]
```

Step 3:

Deployment of Model


jupyter Model Saving & Deployment using Flask Last Checkpoint: 5 minutes ago (autosaved)
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Python 3
Run
Code

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In [8]: #Deployment of Model

In [9]: app = Flask(__name__)
        model = pickle.load(open('model.pkl','rb'))

In [10]: @app.route("/")
         def home():
             return render_template("index.html")

In [11]: @app.route('/',methods=['POST'])
         def predict():
             data = request.get_json(force=True)
             prediction = model.predict([[np.array(data['exp'])]])
             output = prediction[0]
             return jsonify(output)

In [*]: if __name__ == '__main__':
            app.run(port=5000)

         * Serving Flask app "__main__" (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: off
         * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```
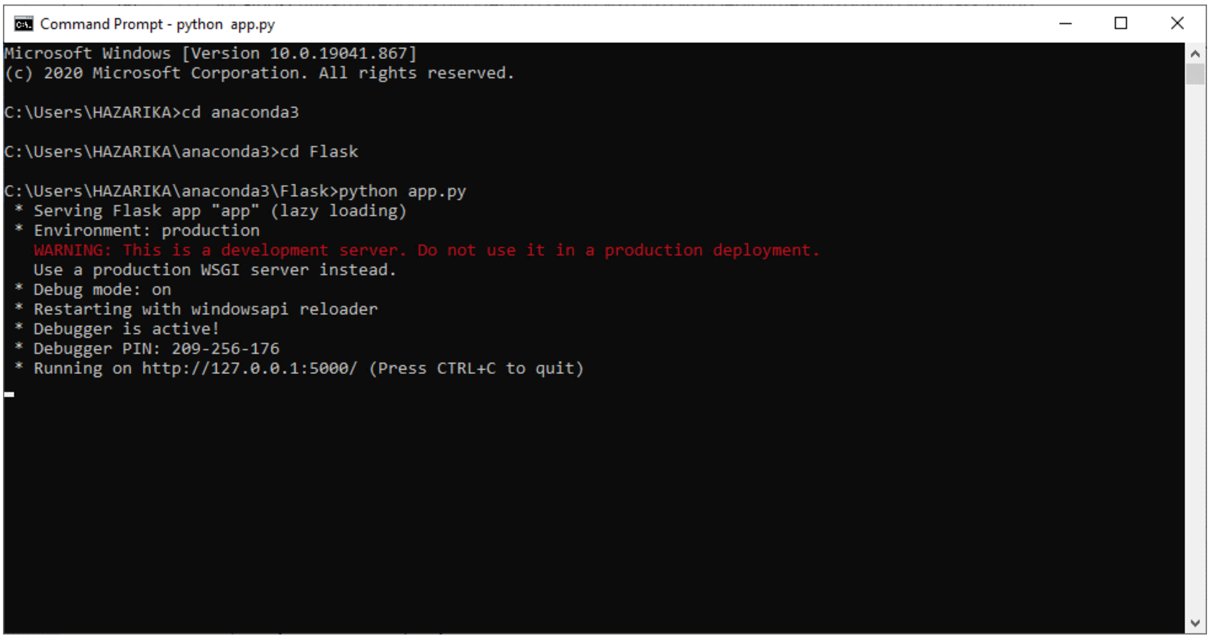

- Created the instance of the *Flask()* and loaded the model.
- Bounded " /" with the method *predict()* in which predict method gets the data from the json passed by the requestor.
- *model.predict()* method takes input from the json and converts it into 2D *numpy array* the results are stored into the variable named *output*.
- Return this variable after converting it into the json object using flasks *jsonify()* method.
- Run our server by following above code section and using port 5000.

Step 4:

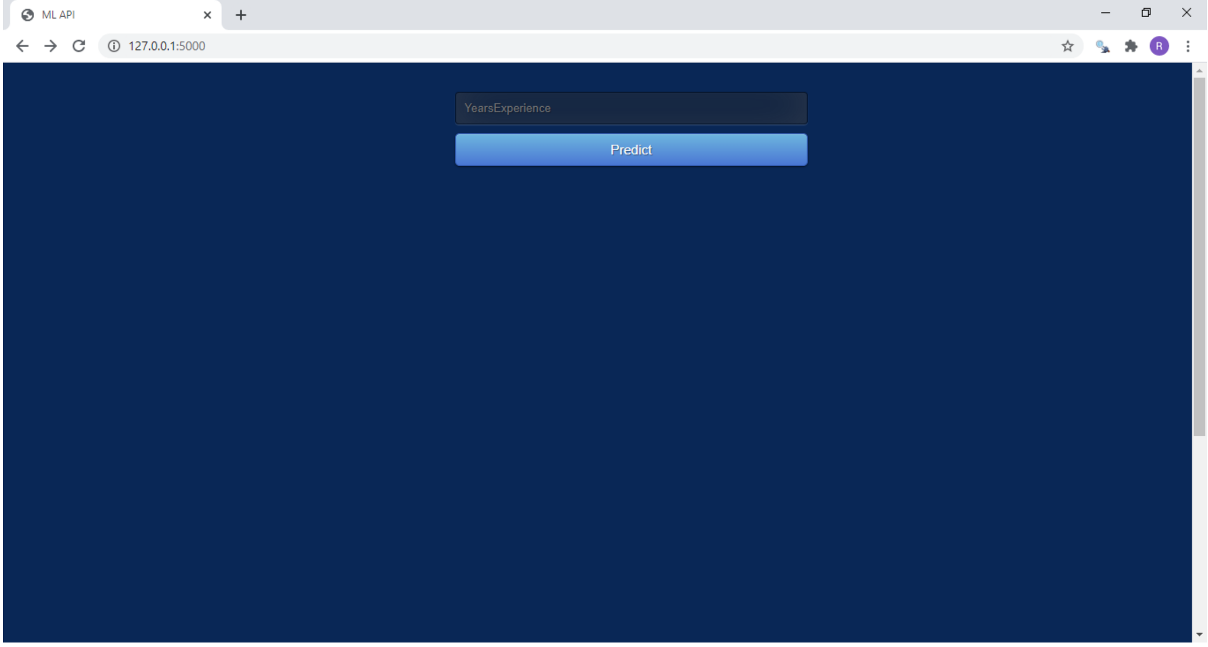
Checking python app.py file in CMD



```
Microsoft Windows [Version 10.0.19041.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\HAZARIKA>cd anaconda3

C:\Users\HAZARIKA\anaconda3>cd Flask

C:\Users\HAZARIKA\anaconda3\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.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with windowsapi reloader
 * Debugger is active!
 * Debugger PIN: 209-256-176
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

Step 5:

Creating the Web App by typing the URL in the browser



Thank You