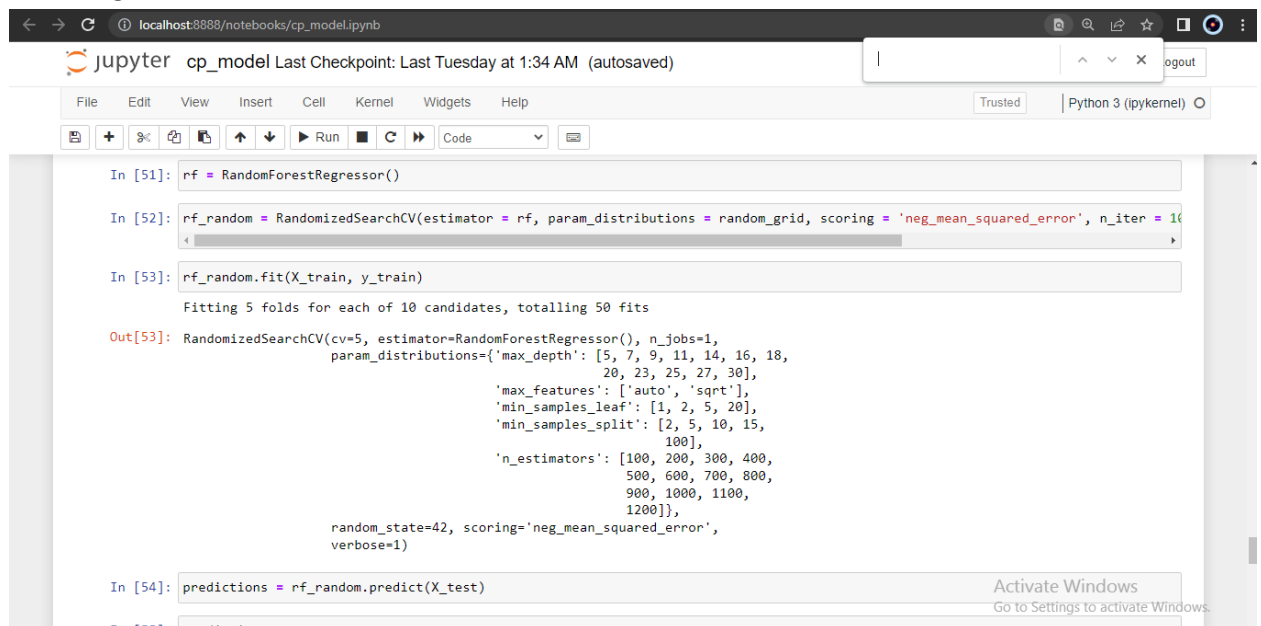


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Batch Code: LISUM11:30
Submission Date: 5th August, 2022
Submitted to: Data Glacier

Week 5 Assignment

1. Building the model.



```
In [51]: rf = RandomForestRegressor()

In [52]: rf_random = RandomizedSearchCV(estimator = rf, param_distributions = random_grid, scoring = 'neg_mean_squared_error', n_iter = 10, cv=5, verbose=1, random_state=42)

In [53]: rf_random.fit(X_train, y_train)

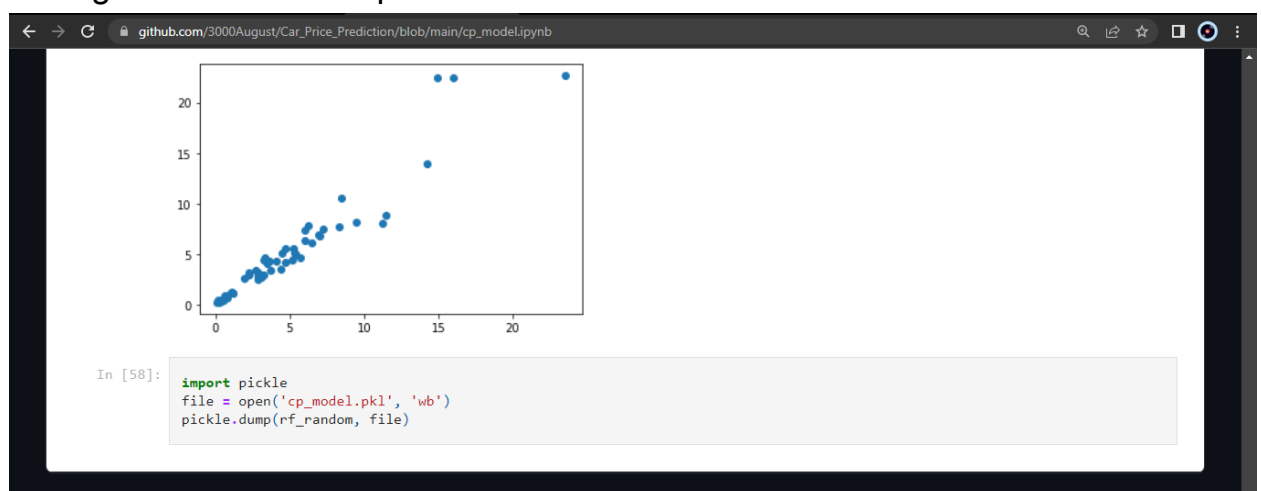
Fitting 5 folds for each of 10 candidates, totalling 50 fits

Out[53]: RandomizedSearchCV(cv=5, estimator=RandomForestRegressor(), n_jobs=1,
                             param_distributions={'max_depth': [5, 7, 9, 11, 14, 16, 18, 20, 23, 25, 27, 30],
                                                  'max_features': ['auto', 'sqrt'],
                                                  'min_samples_leaf': [1, 2, 5, 20],
                                                  'min_samples_split': [2, 5, 10, 15, 100],
                                                  'n_estimators': [100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200]},
                             random_state=42, scoring='neg_mean_squared_error',
                             verbose=1)

In [54]: predictions = rf_random.predict(X_test)

In [55]: predictions
```

2. Saving the model into a pickle file.



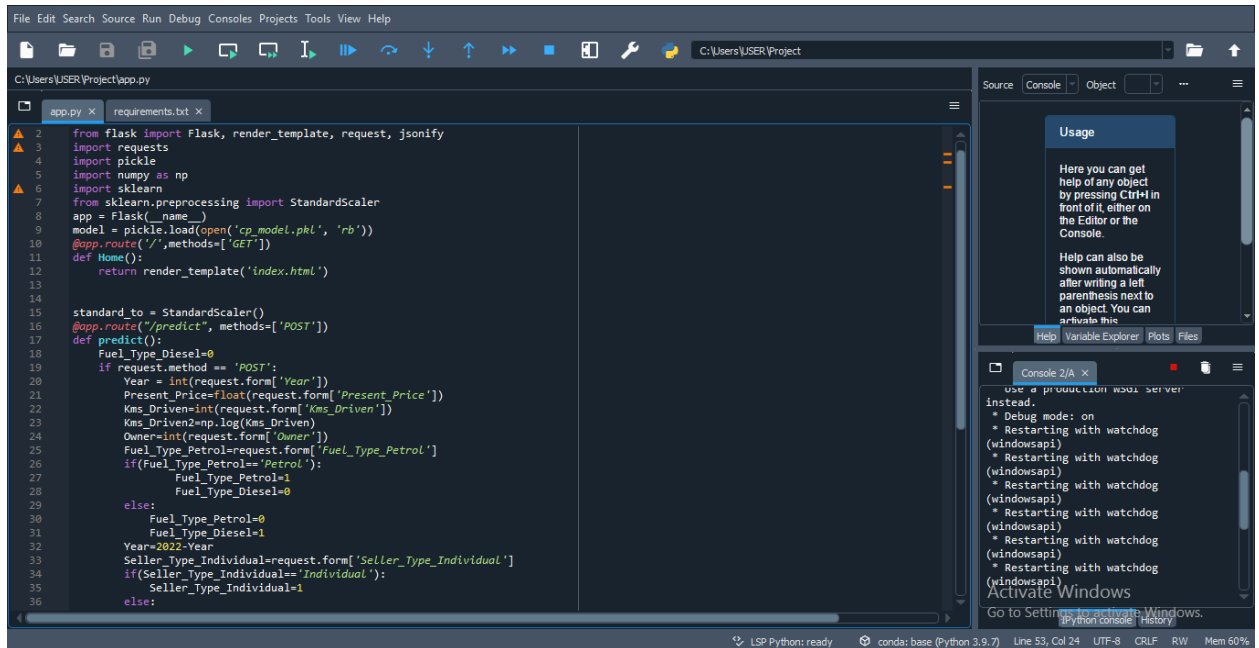
3. Getting the requirements.txt file.

```
(base) C:\Users\USER>activate carprediction
(carprediction) C:\Users\USER>cd "Project"
(carprediction) C:\Users\USER\Project>pip freeze > requirements.txt
(carprediction) C:\Users\USER\Project>
```

```
certifi==2022.6.15
charset-normalizer==2.1.0
click==8.1.3
colorama==0.4.5
Flask==2.2.1
gunicorn==20.1.0
idna==3.3
importlib-metadata==4.12.0
itsdangerous==2.1.2
Jinja2==3.1.2
joblib==1.1.0
jsonify==0.5
MarkupSafe==2.1.1
numpy==1.21.6
requests==2.28.1
scikit-learn==1.0.2
scipy==1.7.3
sklearn==0.0
threadpoolctl==3.1.0
typing_extensions==4.3.0
urllib3==1.26.11
Werkzeug==2.2.1
winertstore==0.2
zipp==3.8.1
|
```

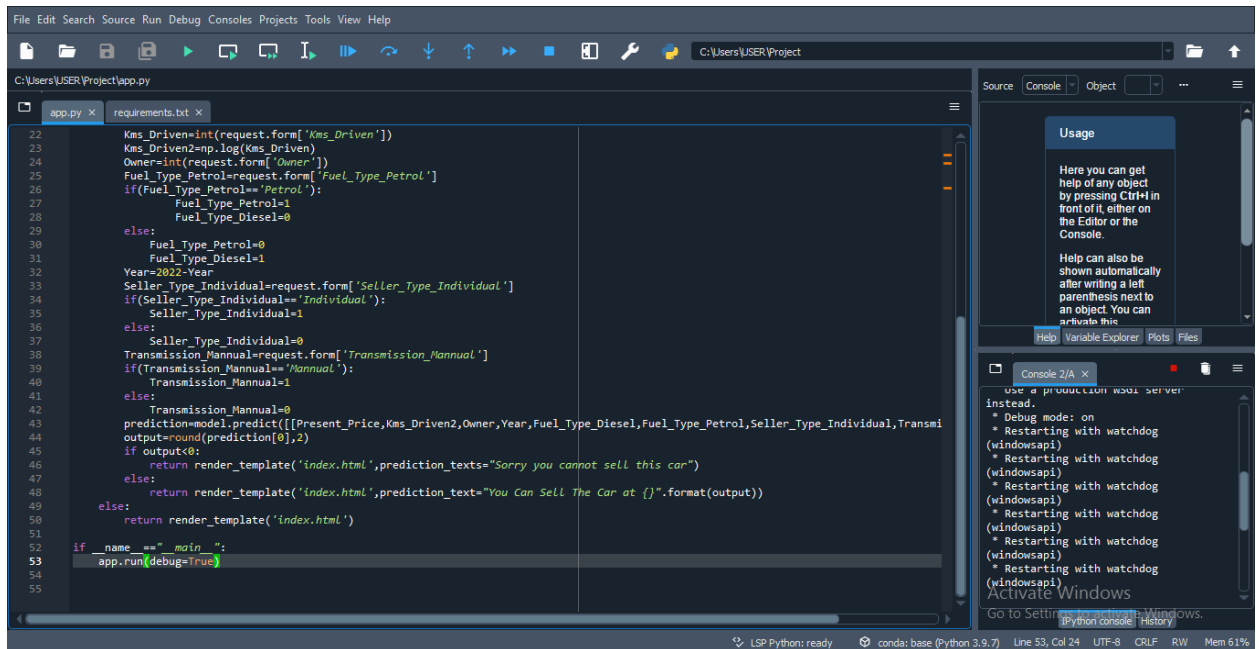
Activate Windows
Go to Settings to activate Windows.

4. Creating the app(including the html file)



The screenshot shows the VS Code editor with the file `app.py` open. The code defines a Flask application with a `Home` route that renders `index.html`. It also sets up a `predict` endpoint using a `StandardScaler` and a `model` loaded from `cp_model.pkl`. The `predict` function handles POST requests and sets variables for `Fuel_Type_Diesel`, `Fuel_Type_Petrol`, `Year`, `Present_Price`, `Kms_Driven`, `Owner`, `Seller_Type_Individual`, and `Transmission_Manual` based on form data. The status bar at the bottom indicates 'LSP Python: ready', 'conda: base (Python 3.9.7)', 'Line 53, Col 24', 'UTF-8', 'CRLF', 'RW', and 'Mem 60%'.

```
1 from flask import Flask, render_template, request, jsonify
2 import requests
3 import pickle
4 import numpy as np
5 import sklearn
6 from sklearn.preprocessing import StandardScaler
7 app = Flask(__name__)
8 model = pickle.load(open('cp_model.pkl', 'rb'))
9 @app.route('/', methods=['GET'])
10 def Home():
11     return render_template('index.html')
12
13
14
15 standard_to = StandardScaler()
16 @app.route('/predict', methods=['POST'])
17 def predict():
18     Fuel_Type_Diesel=0
19     if request.method == 'POST':
20         Year = int(request.form['Year'])
21         Present_Price=float(request.form['Present_Price'])
22         Kms_Driven=int(request.form['Kms_Driven'])
23         Kms_Driven2=np.log(Kms_Driven)
24         Owner=int(request.form['Owner'])
25         Fuel_Type_Petrol=request.form['Fuel_Type_Petrol']
26         if(Fuel_Type_Petrol=='Petrol'):
27             Fuel_Type_Petrol=1
28             Fuel_Type_Diesel=0
29         else:
30             Fuel_Type_Petrol=0
31             Fuel_Type_Diesel=1
32         Year=2022-Year
33         Seller_Type_Individual=request.form['Seller_Type_Individual']
34         if(Seller_Type_Individual=='Individual'):
35             Seller_Type_Individual=1
36         else:
```



The screenshot shows the VS Code editor with the file `app.py` open, displaying the continuation of the `predict` function. It calculates the prediction using `model.predict()`, rounds the output, and renders the `index.html` template with the prediction text. The `if __name__ == '__main__':` block at the bottom calls `app.run(debug=True)`. The status bar at the bottom indicates 'LSP Python: ready', 'conda: base (Python 3.9.7)', 'Line 53, Col 24', 'UTF-8', 'CRLF', 'RW', and 'Mem 61%'.

```
37         Seller_Type_Individual=0
38         Transmission_Manual=request.form['Transmission_Manual']
39         if(Transmission_Manual=='Manual'):
40             Transmission_Manual=1
41         else:
42             Transmission_Manual=0
43         prediction=model.predict([[Present_Price,Kms_Driven2,Owner,Year,Fuel_Type_Diesel,Fuel_Type_Petrol,Seller_Type_Individual,Transmi
44         output=round(prediction[0],2)
45         if output<0:
46             return render_template('index.html',prediction_text="Sorry you cannot sell this car")
47         else:
48             return render_template('index.html',prediction_text="You Can Sell The Car at {}".format(output))
49     else:
50         return render_template('index.html')
51
52 if __name__ == '__main__':
53     app.run(debug=True)
54
55
```

```

1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Car Prediction</title>
8 </head>
9
10 <body>
11
12   <div style="color: blue">
13     <form action="{{ url_for('predict')}}" method="post">
14       <h2>Car Prediction Page</h2>
15       <h3>Car Age</h3>
16       <input id="first" name="Year" type="number">
17       <h3>Showroom Price(in lakhs)</h3><br><input id="second" name="Present_Price" required="required">
18       <h3>Mileage(Km)</h3><input id="third" name="Kms_Driven" required="required">
19       <h3>How much owners previously had the car(0 or 1 or 3) ?</h3><br><input id="fourth" name="Owner" required="required">
20       <h3>Fuel type</h3><br><select name="Fuel_Type_Petrol" id="fuel" required="required">
21         <option value="Petrol">Petrol</option>
22         <option value="Diesel">Diesel</option>
23         <option value="Diesel">CNG</option>
24       </select>
25       <h3>Are you A Dealer or Individual?</h3><br><select name="Seller_Type_Individual" id="resea" required="required">
26         <option value="Dealer">Dealer</option>
27         <option value="Individual">Individual</option>
28       </select>
29       <h3>Transmission type</h3><br><select name="Transmission_Manual" id="research" required="required">
30         <option value="Manual">Manual</option>
31         <option value="Automatic">Automatic</option>
32       </select>
33     </div>

```

5. Deploying the app on localhost via cmd.

```

(carprediction) C:\Users\USER\Project>python app.py
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator DecisionTreeRegressor from version 0.24.2 wh
en using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator RandomForestRegressor from version 0.24.2 wh
en using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator RandomizedSearchCV from version 0.24.2 when
using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Serving Flask app 'app'
* Debug mode: on
* Running on http://127.0.0.1:5000 (Press CTRL+C to quit)
* Restarting with stat
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator DecisionTreeRegressor from version 0.24.2 wh
en using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator RandomForestRegressor from version 0.24.2 wh
en using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
C:\Users\USER\anaconda3\envs\carprediction\lib\site-packages\sklearn\base.py:338: UserWarning: Trying to unpickle estimator RandomizedSearchCV from version 0.24.2 when
using version 1.0.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/modules/model_persistence.html#security-maintainability-limitations
UserWarning,
* Debugger is active!
* Debugger PIN: 297-541-730

```

127.0.0.1:5000/predict

Car Prediction Page

Car Age

Showroom Price(In lakhs)

Mileage(Km)

How much owners previously had the car(0 or 1 or 3) ?

Fuel type

Petrol

Are you A Dealer or Individual?

Dealer

Transmission type

Manual

Get Selling Price

Activate Windows
Go to Settings to activate Windows.

6. Uploaded all project files to Github repository main branch.

github.com/3000August/Car_Price_Prediction

3000August / Car_Price_Prediction Public

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags

Go to file Add file Code

About

No description, website, or topics provided.

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

Activate Windows

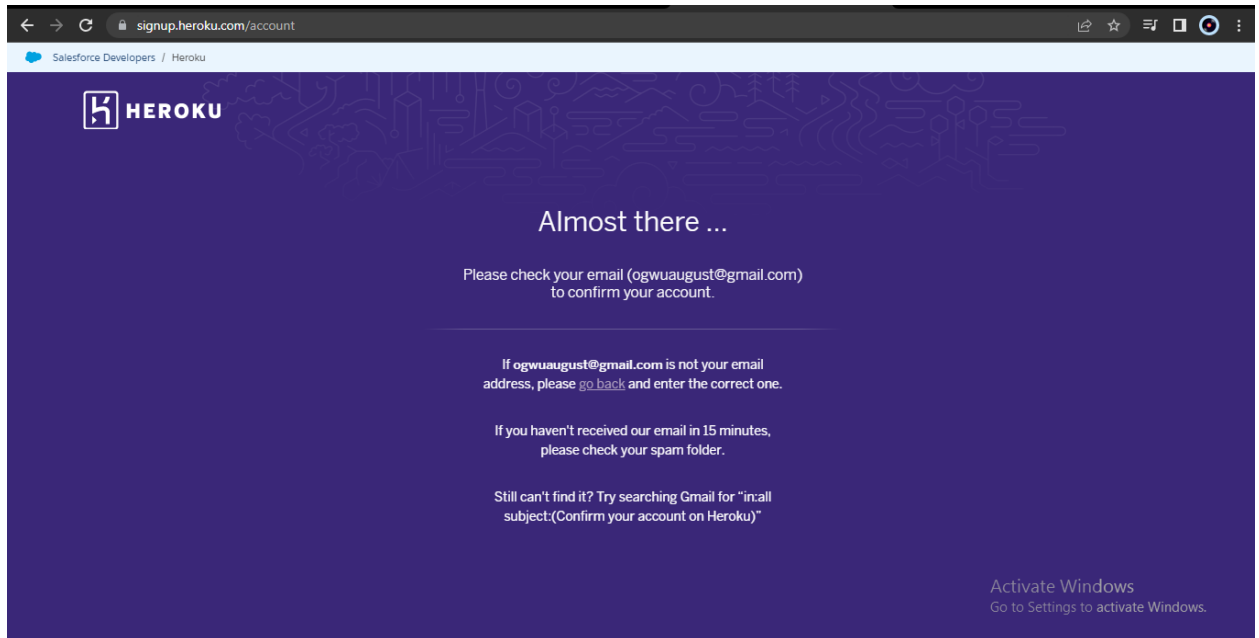
Go to Settings to activate Windows.

No packages published

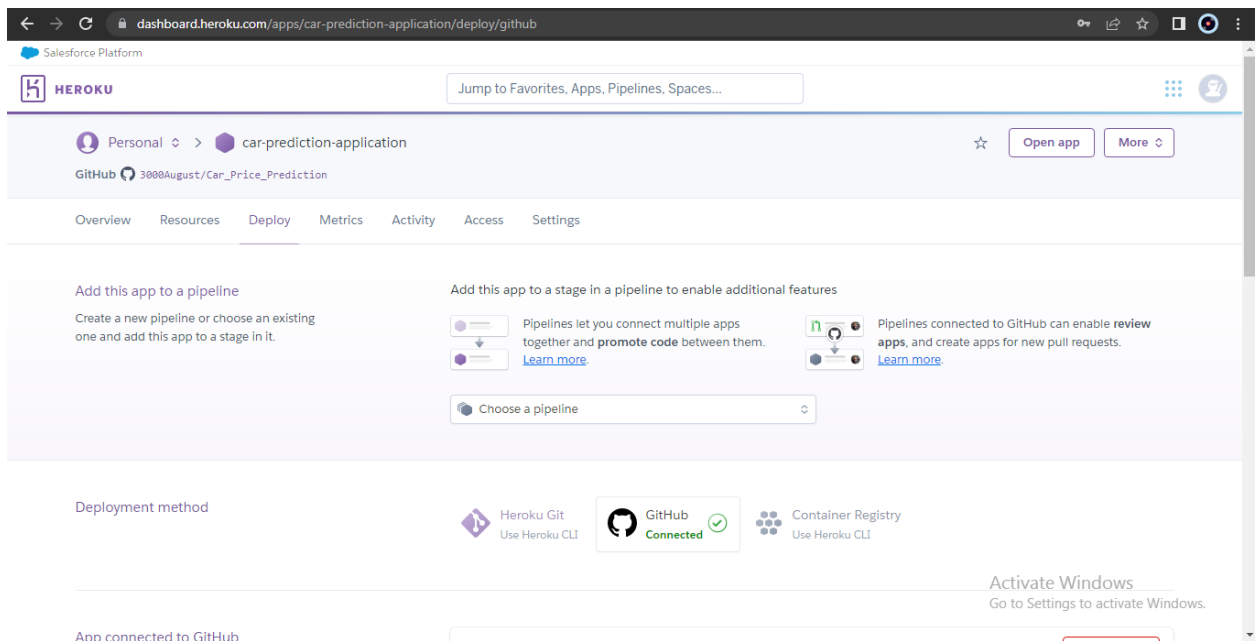
Publish your first package

File	Action	Time
templates	Add files via upload	8 minutes ago
Profile	Add files via upload	1 hour ago
app.py	Add files via upload	15 hours ago
car data.csv	Add files via upload	15 hours ago
cp_model.ipynb	Add files via upload	15 hours ago
cp_model.pkl	Add files via upload	15 hours ago
requirements.txt	Add files via upload	14 hours ago

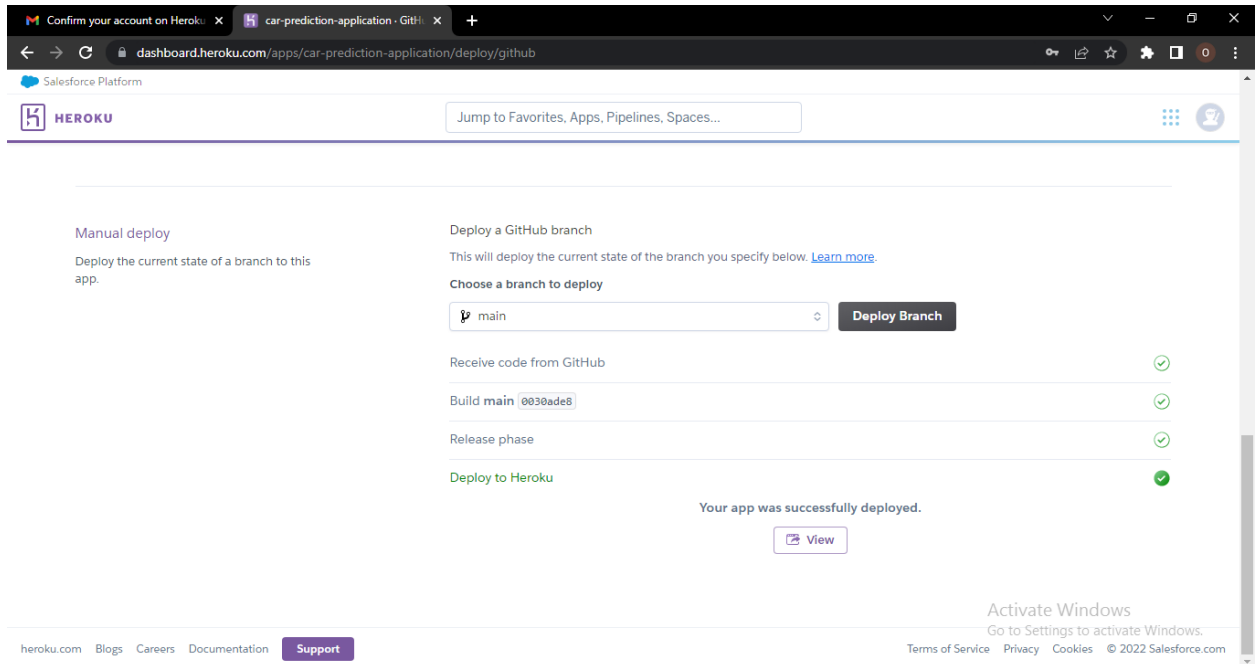
7. Creating and Verifying account on Heroku platform



8. Created a new app for deployment and connected to Github repository main branch.



9. Successfully deployed main branch of repo.



10. Opened the deployed web app on Heroku platform.



Link to web app: [web app](https://car-prediction-application.herokuapp.com)