

Development Phase

Model Building

Date	12 November 2022
Team ID	PNT2022TMID21553
Project Name	Project – Car Resale Value Prediction

Choose the appropriate model and check the metrics of the models:

Random forest regressor

```
+ Code + Text

CHOOSE THE APPROPRIATE MODEL AND CHECK THE METRICS OF THE MODELS

[23] from sklearn.ensemble import RandomForestRegressor
     from sklearn.metrics import r2_score

[24] regressor = RandomForestRegressor(n_estimators=1000, max_depth=10, random_state=34)
     regressor.fit(X_train, np.ravel(Y_train, order='C'))

     RandomForestRegressor(max_depth=10, n_estimators=1000, random_state=34)

[25] pred_1 = regressor.predict(X_test)
     print(r2_score(Y_test, pred_1))

     0.834527626497731
```

Decision Tree classifier

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+ Code + Text

[29] from sklearn.tree import DecisionTreeClassifier

[41] ds = DecisionTreeClassifier(max_depth=5000, max_features=0.9, max_leaf_nodes=5000, random_state=2, splitter='best')
     ds.fit(X_train, np.ravel(Y_train, order='C'))

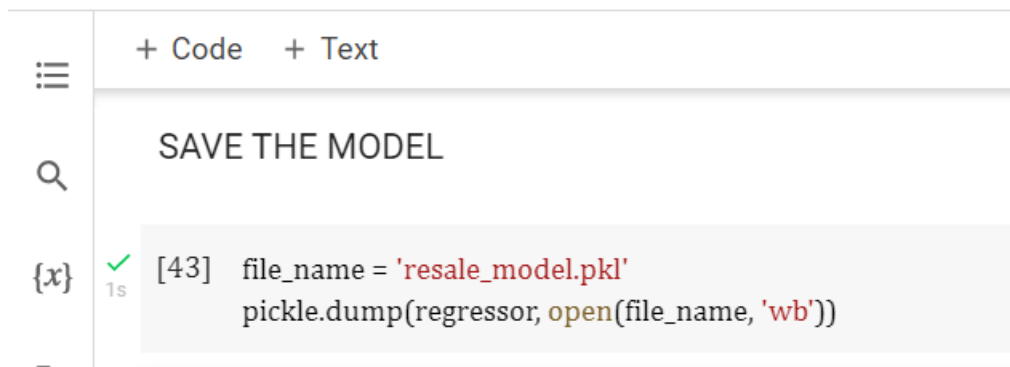
     DecisionTreeClassifier(max_depth=5000, max_features=0.9, max_leaf_nodes=5000,
                           random_state=2)

[42] pred_3 = ds.predict(X_test)
     print(r2_score(Y_test, pred_3))

     0.6708257751174928
```

The random forest regressor fits the model better than the decision tree classifier.
So, we save the random forest regressor model.

Save the model:



The image shows a Jupyter Notebook interface. On the left is a sidebar with icons for a menu, search, and a variable {x}. The top bar has buttons for '+ Code' and '+ Text'. The main area is titled 'SAVE THE MODEL'. Below the title is a code cell with a green checkmark and '1s' indicating successful execution. The code cell contains the following Python code:

```
[43] file_name = 'resale_model.pkl'
      pickle.dump(regressor, open(file_name, 'wb'))
```