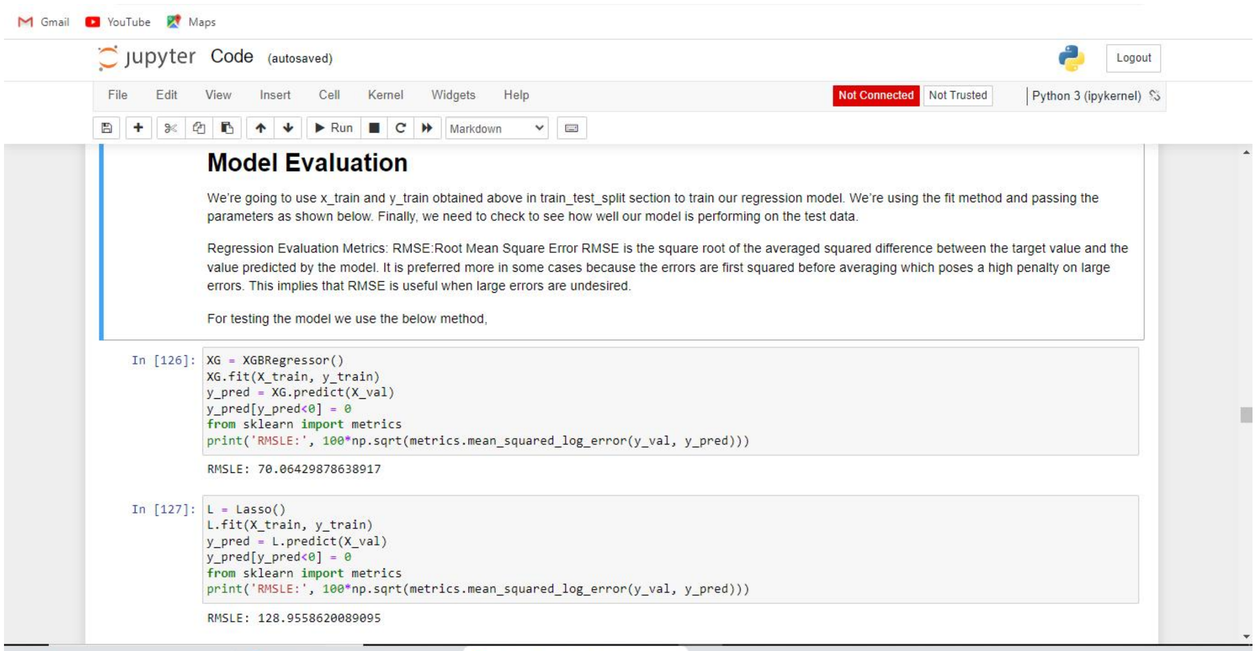
TEAM ID: PNT2022TMID36553

PROJECT NAME: DemandEst - AI powered Food Demand Forecaster



Model Evaluation

We're going to use x_train and y_train obtained above in train_test_split section to train our regression model. We're using the fit method and passing the parameters as shown below. Finally, we need to check to see how well our model is performing on the test data.

Regression Evaluation Metrics: RMSE:Root Mean Square Error RMSE is the square root of the averaged squared difference between the target value and the value predicted by the model. It is preferred more in some cases because the errors are first squared before averaging which poses a high penalty on large errors. This implies that RMSE is useful when large errors are undesired.

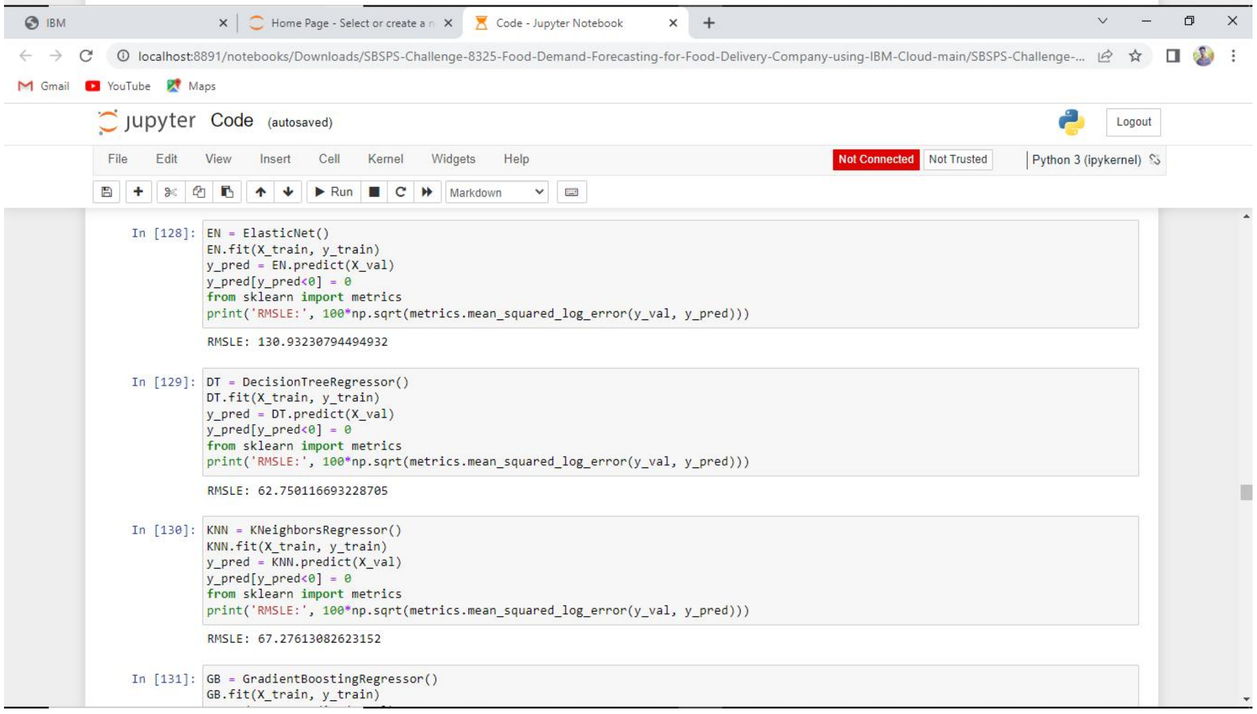
For testing the model we use the below method,

```
In [126]: XG = XGBRegressor()
          XG.fit(X_train, y_train)
          y_pred = XG.predict(X_val)
          y_pred[y_pred<0] = 0
          from sklearn import metrics
          print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

          RMSLE: 70.06429878638917

In [127]: L = Lasso()
          L.fit(X_train, y_train)
          y_pred = L.predict(X_val)
          y_pred[y_pred<0] = 0
          from sklearn import metrics
          print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

          RMSLE: 128.9558620089095
```



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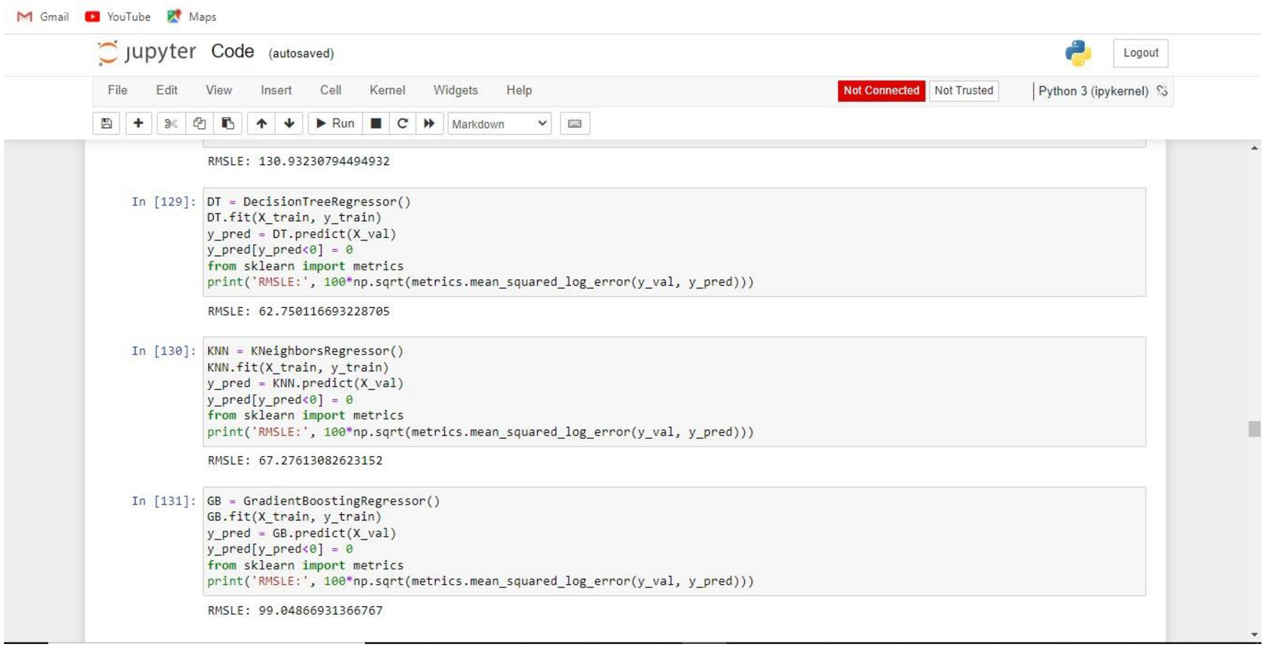
Code - Jupyter Notebook
localhost:8891/notebooks/Downloads/SBSPS-Challenge-8325-Food-Demand-Forecasting-for-Food-Delivery-Company-using-IBM-Cloud-main/SBSPS-Challenge-...
Gmail
YouTube
Maps
Jupyter Code (autosaved)
Logout
File Edit View Insert Cell Kernel Widgets Help
Not Connected
Not Trusted
Python 3 (ipykernel)
Run
Markdown

```
In [128]: EN = ElasticNet()
          EN.fit(X_train, y_train)
          y_pred = EN.predict(X_val)
          y_pred[y_pred<0] = 0
          from sklearn import metrics
          print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

          RMSLE: 130.93230794494932

In [129]: DT = DecisionTreeRegressor()
          DT.fit(X_train, y_train)
          y_pred = DT.predict(X_val)
          y_pred[y_pred<0] = 0
          from sklearn import metrics
          print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

          RMSLE: 62.750116693228705

In [130]: KNN = KNeighborsRegressor()
          KNN.fit(X_train, y_train)
          y_pred = KNN.predict(X_val)
          y_pred[y_pred<0] = 0
          from sklearn import metrics
          print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

          RMSLE: 67.27613082623152

In [131]: GB = GradientBoostingRegressor()
          GB.fit(X_train, y_train)
```



```
RMSLE: 130.93230794494932
```

In [129]:
```
DT = DecisionTreeRegressor()
DT.fit(X_train, y_train)
y_pred = DT.predict(X_val)
y_pred[y_pred<0] = 0
from sklearn import metrics
print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))
```

```
RMSLE: 62.750116693228705
```

In [130]:
```
KNN = KNeighborsRegressor()
KNN.fit(X_train, y_train)
y_pred = KNN.predict(X_val)
y_pred[y_pred<0] = 0
from sklearn import metrics
print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))
```

```
RMSLE: 67.27613082623152
```

In [131]:
```
GB = GradientBoostingRegressor()
GB.fit(X_train, y_train)
y_pred = GB.predict(X_val)
y_pred[y_pred<0] = 0
from sklearn import metrics
print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))
```

```
RMSLE: 99.04866931366767
```