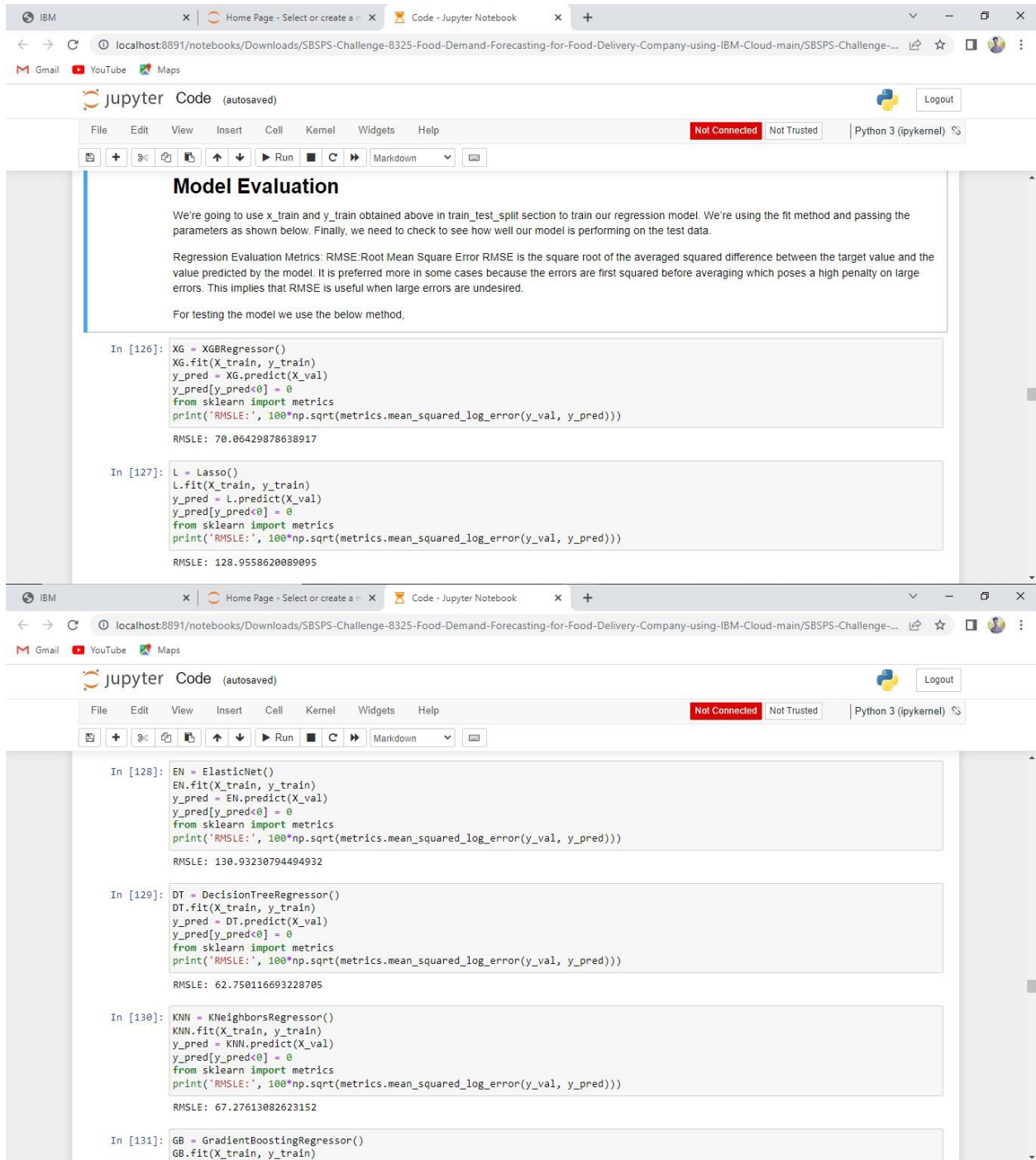


TEAM ID: PNT2022TMID44529

PROJECT NAME: DemandEst - AI powered Food DemandForecaster

Team Leader



The screenshot displays a Jupyter Notebook interface with a browser window at the top showing the URL `localhost:8891/notebooks/Downloads/SBSPS-Challenge-8325-Food-Demand-Forecasting-for-Food-Delivery-Company-using-IBM-Cloud-main/SBSPS-Challenge-...`. The notebook interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running cells, and markdown. The notebook content is divided into two sections, each containing a title, explanatory text, and code cells with their outputs.

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
```

```
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
```

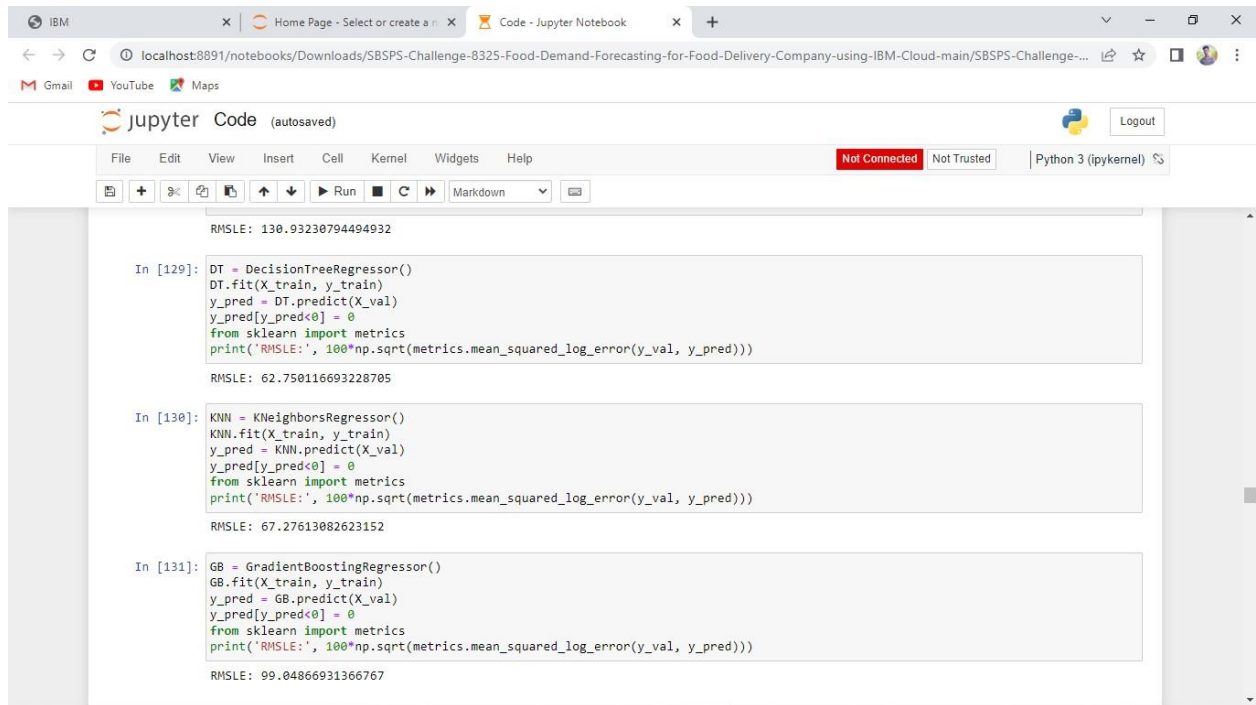
```
In [129]: DT = DecisionTreeRegressor()
DT.fit(X_train, y_train)
y_pred = DT.predict(X_val)
y_pred[y_pred<0] = 0
from sklearn import metrics
print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

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

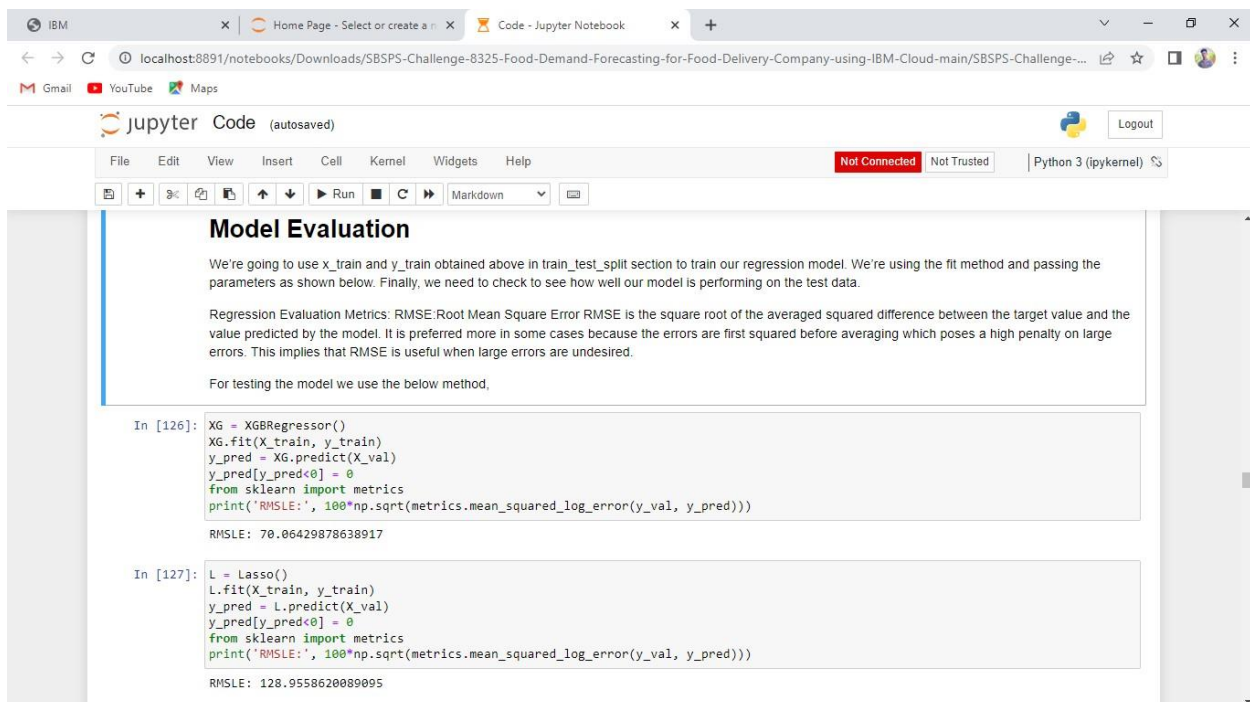
In [130]: KNN = KNeighborsRegressor()
KNN.fit(X_train, y_train)
y_pred = KNN.predict(X_val)
y_pred[y_pred<0] = 0
from sklearn import metrics
print('RMSLE:', 100*np.sqrt(metrics.mean_squared_log_error(y_val, y_pred)))

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
```

Team Member 1



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: 120.9558620089095
```

IBM Home Page - Select or create a n Code - Jupyter Notebook

localhost8891/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)

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)
```

IBM Home Page - Select or create a n Code - Jupyter Notebook

localhost8891/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)

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)))
```

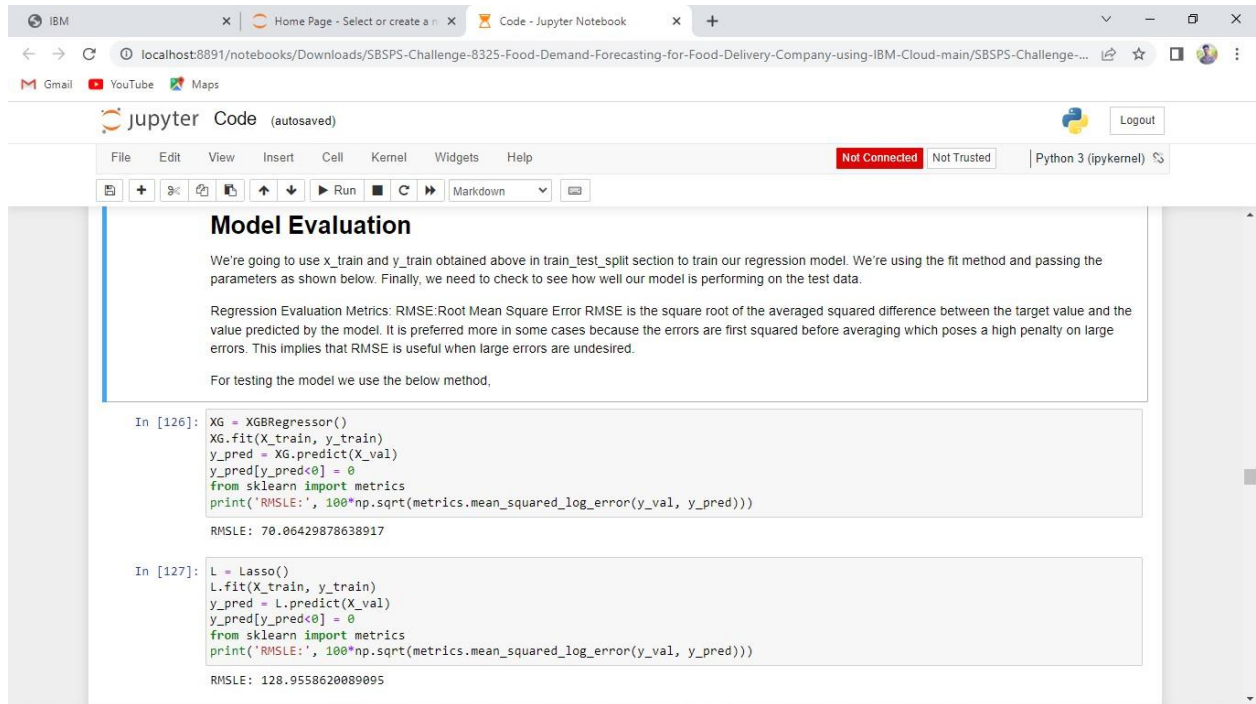
RMSLE: 67.27613082623152

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

Team Member 2



The screenshot shows a Jupyter Notebook interface with a browser window at the top. The notebook has a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running, and saving. The status bar at the bottom indicates 'Not Connected', 'Not Trusted', and 'Python 3 (ipykernel)'. The main content area contains a markdown cell titled 'Model Evaluation' and two code cells.

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.

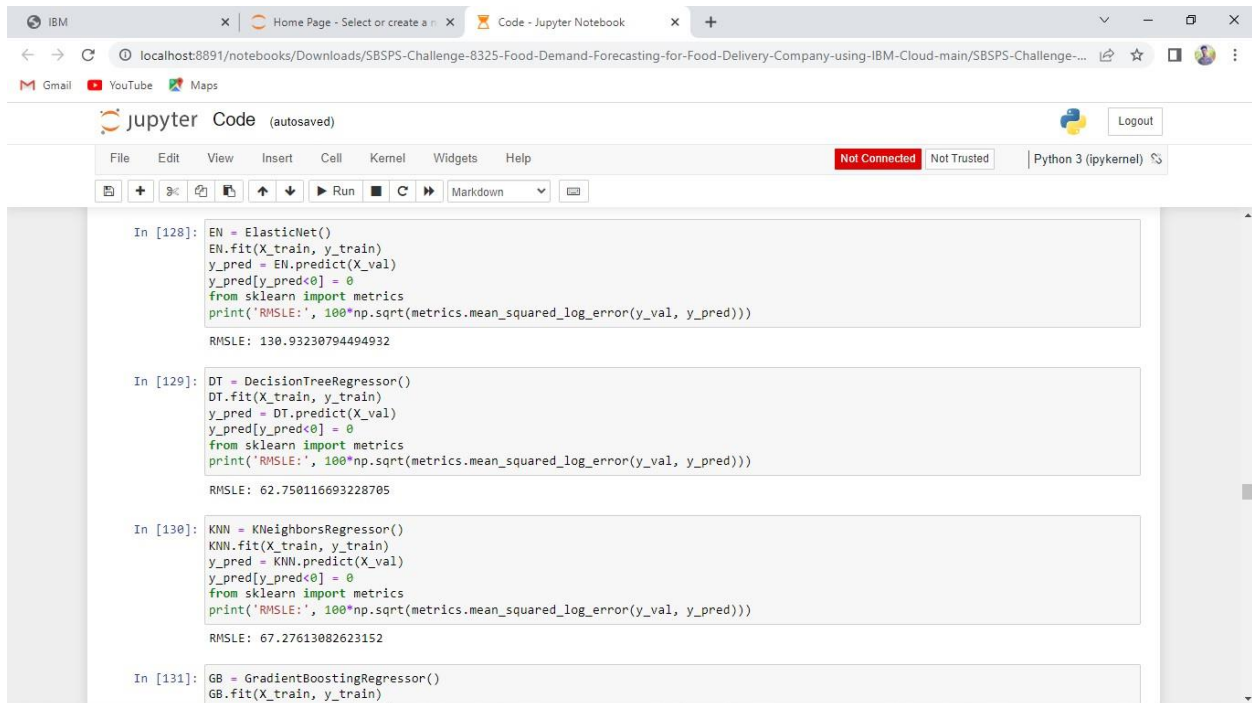
For testing the model we use the below method,

```
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
```



The screenshot shows a Jupyter Notebook interface with a browser window at the top. The notebook has a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running, and saving. The status bar at the bottom indicates 'Not Connected', 'Not Trusted', and 'Python 3 (ipykernel)'. The main content area contains four code cells, each testing a different regression model.

```
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
```

Team Member 3

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
```


IBM | Home Page - Select or create a notebook | Code - Jupyter Notebook

localhost8891/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)

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)
```

IBM | Home Page - Select or create a notebook | Code - Jupyter Notebook

localhost8891/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)

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