Project Development Phase
Model Performance Test

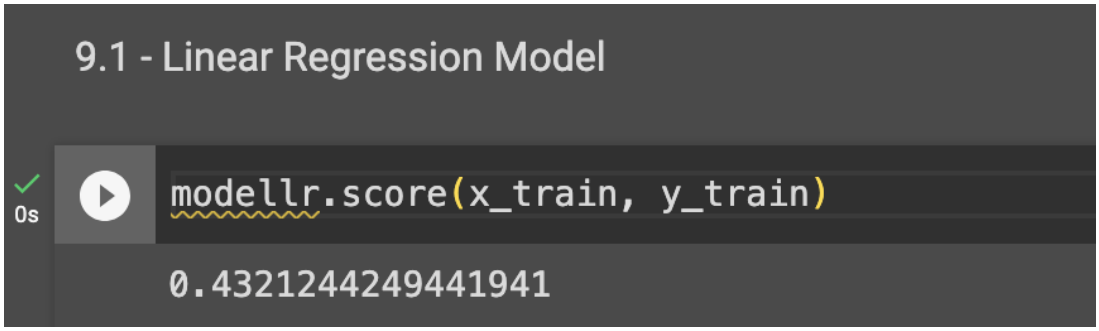
Date	18 November 2023
Team ID	592203
Project Name	Project - AI-Driven Optimization Of 5G Resource Allocation For Network Efficiency
Maximum Marks	10 Marks

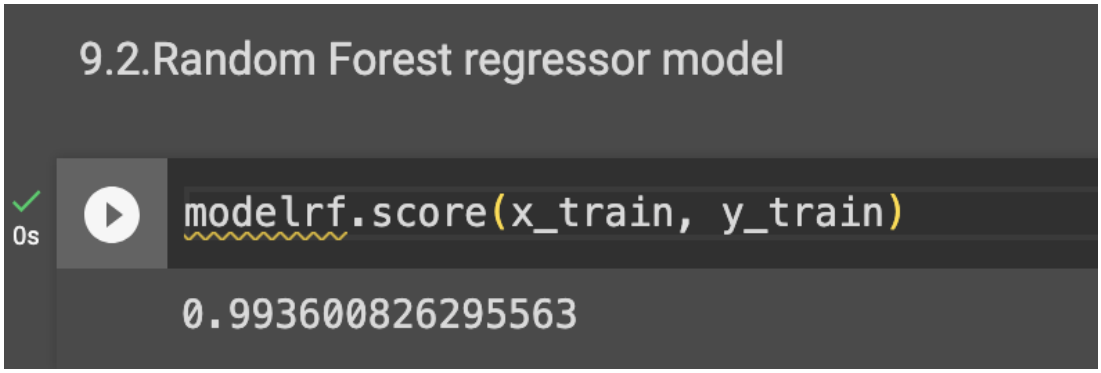
Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1.	Model Summary	We tested with 4 Machine Learning Models for the Optimized Allocation of 5G Resource and the results show that KNN and Random Forest show the highest accuracy for our project.	S.no Model Accuracy 1 Linear Regression 32.8 2 random Forest 88.4 3 Decision Tree 87.5 4 KNN 89.7
2.	Accuracy	Training Accuracy and Validation Accuracy	Given below

Training Accuracies:





9.3 - decision tree regressor

```
[62] modeldt.score(x_train, y_train)
```

0s

```
0.99950821550664495
```

9.4 - KNN

```
[69] modelknn.score(x_train, y_train)
```

0s

```
0.9514563106796117
```

Validation Accuracies:

9.1 - Linear Regression Model

```
[44] from sklearn.metrics import r2_score, mean_squared_error
     r2 = r2_score(y_test, y_pred)
     r2
```

0s

```
0.3281002378741138
```

9.2.Random Forest regressor model

```
from sklearn.ensemble import RandomForestRegressor
#Accuracy score
from sklearn.metrics import accuracy_score,confusion_matrix,classification_report,roc_auc_score,roc_curve,r2_score

modelrf = RandomForestRegressor()

modelrf.fit(x_train, y_train)

ypr = modelrf.predict(x_test)

ypr

accc= r2_score (y_test,ypr)
accc
```

```
0.8862137451869048
```

9.3 - decision tree regressor

```
from sklearn.tree import DecisionTreeRegressor

dt= DecisionTreeRegressor(random_state = 65)

modeldt = dt.fit(x_train, y_train)

ypre = dt.predict(x_test)

ac= r2_score (y_test,ypre)

ac
```

```
0.8749792737522799
```

9.4 - KNN

```
score = modelknn.score(x_test, y_test)
score
```

```
0.8974358974358975
```