
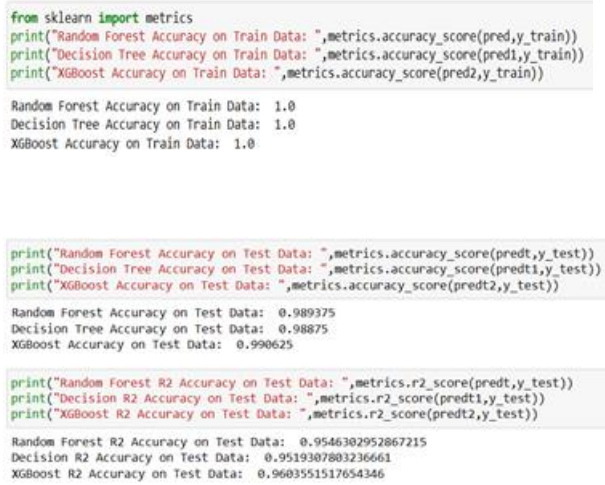


## PHASE – V:

### Model Performance Testing:

Date	20 November 2023
Team ID	Team-591849
Project Name	Project – Understanding Audience
Maximum Marks	10 Marks

S.No.	Parameter	Values	Screenshot
1.	Model Summary	RandomForestClassifier() DecisionTreeClassifier() XGBClassifier()	 <pre> [26] from sklearn.ensemble import RandomForestClassifier       from sklearn import tree       import xgboost  [27] rand_model = RandomForestClassifier()       tree_model = tree.DecisionTreeClassifier()       xgb_model = xgboost.XGBClassifier()  [28] rand_model.fit(x_train,y_train)       tree_model.fit(x_train,y_train)       xgb_model.fit(x_train,y_train) </pre>
2.	Accuracy	<b>Training Accuracy –</b> Random Forest = 1.0 Decision Tree = 1.0 XGBoost = 1.0  <b>Validation Accuracy –</b> Random Forest R2 Accuracy = 0.9546 Decision R2 Accuracy = 0.9519 XGBoost R2 Accuracy = 0.9603  Random Forest Accuracy: 0.9893 Decision Tree Accuracy: 0.9887 XGBoost Accuracy: 0.9906	 <pre> from sklearn import metrics print("Random Forest Accuracy on Train Data: ",metrics.accuracy_score(pred,y_train)) print("Decision Tree Accuracy on Train Data: ",metrics.accuracy_score(pred1,y_train)) print("XGBoost Accuracy on Train Data: ",metrics.accuracy_score(pred2,y_train))  Random Forest Accuracy on Train Data: 1.0 Decision Tree Accuracy on Train Data: 1.0 XGBoost Accuracy on Train Data: 1.0  print("Random Forest Accuracy on Test Data: ",metrics.accuracy_score(predt,y_test)) print("Decision Tree Accuracy on Test Data: ",metrics.accuracy_score(predt1,y_test)) print("XGBoost Accuracy on Test Data: ",metrics.accuracy_score(predt2,y_test))  Random Forest Accuracy on Test Data: 0.989375 Decision Tree Accuracy on Test Data: 0.98875 XGBoost Accuracy on Test Data: 0.990625  print("Random Forest R2 Accuracy on Test Data: ",metrics.r2_score(predt,y_test)) print("Decision R2 Accuracy on Test Data: ",metrics.r2_score(predt1,y_test)) print("XGBoost R2 Accuracy on Test Data: ",metrics.r2_score(predt2,y_test))  Random Forest R2 Accuracy on Test Data: 0.9546302952867215 Decision R2 Accuracy on Test Data: 0.9519307803236661 XGBoost R2 Accuracy on Test Data: 0.9603551517654346 </pre>

