Model Development Phase Template

Date	July 5,2024
Team ID	739683
Project Title	Customer Segmentation using Machine learning
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshot

Initial model Training Code:

[131]:
```
y = data['kclus']
x = data.drop(columns=['kclus'],axis=1)
```

[134]:
```
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.2,random_state=0)
```

[138]:
```
from sklearn.ensemble import RandomForestClassifier
from sklearn import tree
import xgboost

rand_model = RandomForestClassifier()
tree_model = tree.DecisionTreeClassifier()
xgb_model = xgboost.XGBClassifier()

rand_model.fit(x_train,y_train)
tree_model.fit(x_train,y_train)
xgb_model.fit(x_train,y_train)
```

[141]:
```
pred = rand_model.predict(x_train)
pred1 = tree_model.predict(x_train)
pred2 = xgb_model.predict(x_train)

from sklearn import metrics

print(metrics.accuracy_score(pred,y_train))
print(metrics.accuracy_score(pred1,y_train))
print(metrics.accuracy_score(pred2,y_train))
```

```
1.0
1.0
1.0
```

[142]:
```
pred = rand_model.predict(x_test)
pred1 = tree_model.predict(x_test)
pred2 = xgb_model.predict(x_test)

print(metrics.accuracy_score(pred,y_test))
print(metrics.accuracy_score(pred1,y_test))
print(metrics.accuracy_score(pred2,y_test))
```

```
1.0
1.0
1.0
```