Model Development Phase Template

Date	July 5,2024
Team ID	739892
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:

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

```python
[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)
```

```python
[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
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```