

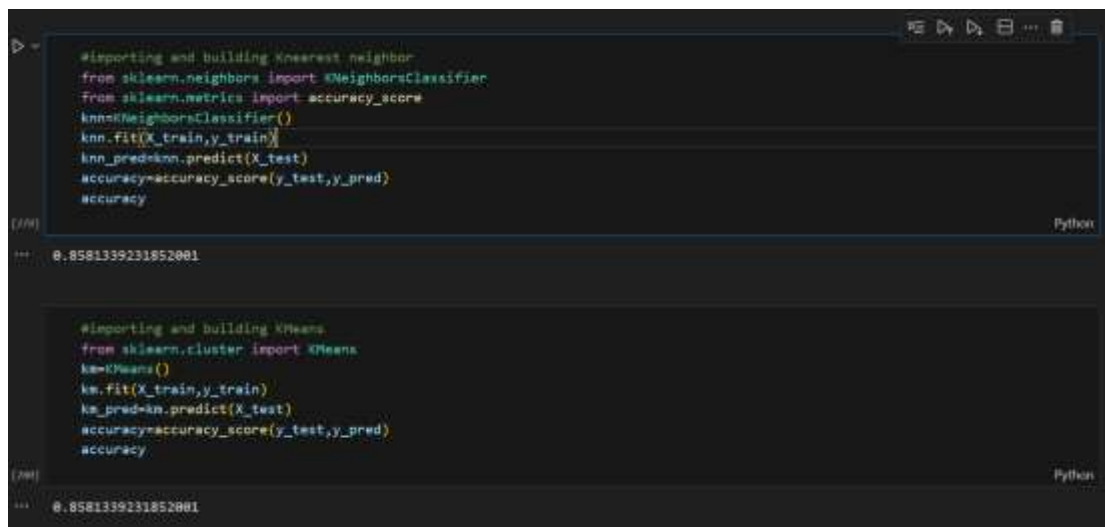
Model Development Phase Template

| | |
|---------------|----------------------------------------------------------|
| Date | 03 july 2024 |
| Team ID | 740669 |
| Project Title | Customer Shopping Segmentation by 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 model training, accuracy presented through respective screenshots.

Initial Model Training Code:



```

#Importing and building Knearest neighbor
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score
knn=KNeighborsClassifier()
knn.fit(X_train,y_train)
knn_pred=knn.predict(X_test)
accuracy=accuracy_score(y_test,y_pred)
accuracy

(1/1) Python
0.8581339231852001

#Importing and building KMeans
from sklearn.cluster import KMeans
km=KMeans()
km.fit(X_train,y_train)
km_pred=km.predict(X_test)
accuracy=accuracy_score(y_test,y_pred)
accuracy

(2/2) Python
0.8581339231852001

```

```

# Making predictions
y_pred = model.predict(X_test)

# Evaluating the model
print(classification_report(y_test, y_pred))

```

| | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 0 | 0.68 | 0.69 | 0.68 | 1022 |
| 1 | 0.96 | 1.00 | 0.98 | 6885 |
| 2 | 0.75 | 0.85 | 0.80 | 3059 |
| 3 | 0.93 | 0.99 | 0.96 | 2919 |
| 4 | 0.82 | 0.85 | 0.83 | 1941 |
| 5 | 0.69 | 0.55 | 0.61 | 1008 |
| 6 | 0.93 | 0.61 | 0.73 | 991 |
| 7 | 0.72 | 0.58 | 0.65 | 2067 |
| accuracy | | | 0.86 | 19892 |
| macro avg | 0.81 | 0.76 | 0.78 | 19892 |
| weighted avg | 0.86 | 0.86 | 0.85 | 19892 |

```

#import and building decision tree:
from sklearn.tree import DecisionTreeClassifier
dt=DecisionTreeClassifier()
dt.fit(X_train,y_train)
y_pred=dt.predict(X_test)
accuracy=accuracy_score(y_test,y_pred)
accuracy

```

1.0

```

df['shopping_mall'].unique()

```

array([4, 2, 6, 7, 3, 5, 1, 0, 8, 9])

