

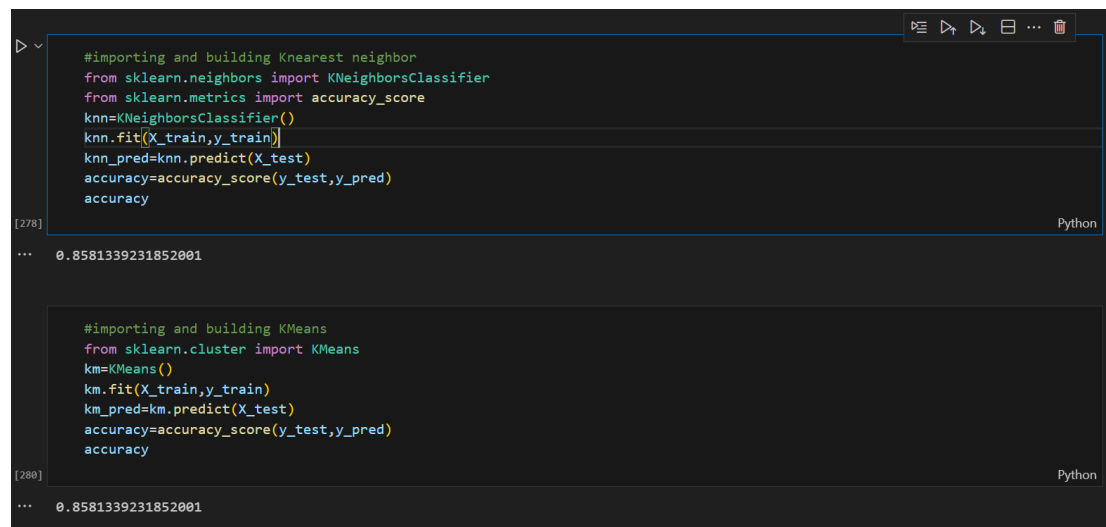
## Model Development Phase Template

Date	03 july 2024
Team ID	739747
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:



```
[278] Python
#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

... 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

[280] 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])