In [ ]:
```
#Social_Networks_Ads.csv
```

Importing the libraries

In [1]:
```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

Importing the dataset

In [2]:
```
data = pd.read_csv('C:/Users/Karthi/Desktop/Social_Network_Ads.csv')
data
```

Out[2]:

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	Male	19	19000	0
1	15810944	Male	35	20000	0
2	15668575	Female	26	43000	0
3	15603246	Female	27	57000	0
4	15804002	Male	19	76000	0
...	...	...	...	...	...
395	15691863	Female	46	41000	1
396	15706071	Male	51	23000	1
397	15654296	Female	50	20000	1
398	15755018	Male	36	33000	0
399	15594041	Female	49	36000	1

400 rows × 5 columns

In [3]:
```
X=data.iloc[:,[2,3]].values
y=data.iloc[:,[4]].values
```

In [ ]:
```

```

Splitting the dataset into the Training set and Test set

In [4]:
```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.25, random_state = 0)
```

Feature Scaling

In [5]:
```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
```

Fitting K-NN to the Training set

In [12]:
```
from sklearn.model_selection import cross_val_score
```

```python
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
knn = KNeighborsClassifier(n_neighbors=5) #it will initialise the model with @neighbours as k
knn.fit(X_train, y_train) # train the model
print("Train Accuracy : ", knn.score(X_train,y_train)) # test the model and it computes the accu
print("Val Accuracy : ", np.mean(cross_val_score(knn, X_train, y_train, cv=10)))
```

```
Train Accuracy :  0.91
Val Accuracy :  0.9066666666666666
```

```
C:\Users\Karthi\PycharmProjects\pythonProject\venv\lib\site-packages\sklearn\neighbors\_classifi
cation.py:207: DataConversionWarning: A column-vector y was passed when a 1d array was expected.
Please change the shape of y to (n_samples,), for example using ravel().
  return self._fit(X, y)
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  return self._fit(X, y)
```

Predicting the Test set results

In [15]:
```python
y_pred = knn.predict(X_test)
```

Making the Confusion Matrix

In [16]:
```python
from sklearn.metrics import confusion_matrix, accuracy_score
```

```
cm = confusion_matrix(y_test, y_pred)
ac = accuracy_score(y_test, y_pred)
```

In [ ]: