

Exp no: 10

Implementing artificial neural networks for an application using python - classification

Aim

To implement artificial neural networks for an application in classification using python

Code:

```
sklearn.model_selection import train_test_split
from sklearn.datasets import make_circles import
from sklearn.neural_network import MLPClassification

from numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

%matplotlib inline
x_train, y_train = make_circles (n_samples=300,
                                noise=0.05)
x_test, y_test = make_circles (n_samples=300,
                                noise=0.05)
sns.scatterplot (x_train[:,0], x_train[:,1],
                hue=y_train)
```

```
plt.title("Train Data")
```

```
plt.show()
```

```
clf = MLPClassifier(max_iter=1000)
```

```
clf.fit(x_train, y_train)
```

```
y_pred = clf.predict(x_test)
```

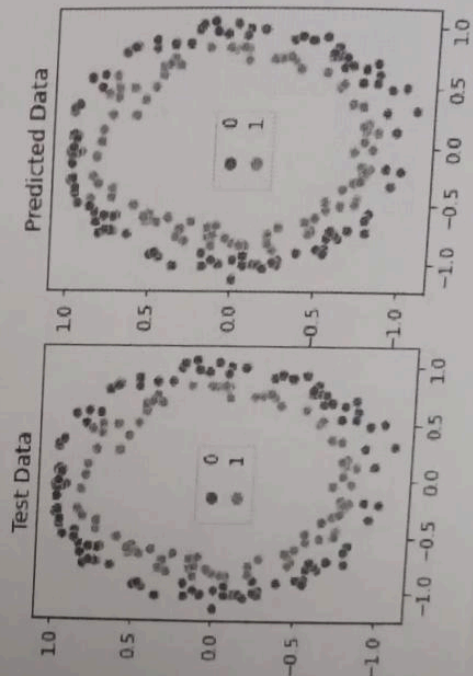
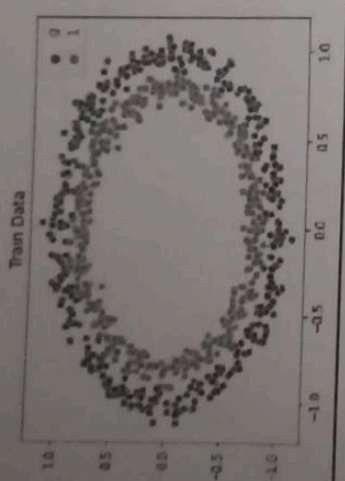
```
fig, ax = plt.subplots(1, 2)
```

```
sns.scatterplot(x_test[:, 0],
```

```
x_test[:, 1], true = y_pred, ax=ax[0])
```

```
plt.show()
```

O/p



Result

The program was successfully executed and the o/p is verified