EX.NO :11

DATE :

IMPLEMENTING ARTIFICIAL NEURAL NETWORKS FOR AN APPLICATION USING PYTHON - REGRESSION

AIM :

To implement artificial neural networks for an application in Regression using Python.

SOURCE CODE :

```
from sklearn.neural_network import MLPRegressor
from sklearn.model_selection import train_test_split
from sklearn.datasets import make_regression
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline


X, y = make_regression(n_samples=1000, noise=0.05, n_features=100)

X.shape, y.shape // ((1000, 100), (1000,))

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, shuffle=True, rando
m_state=42)

clf = MLPRegressor(max_iter=1000)
clf.fit(X_train, y_train)
print(f"R2 Score for Training Data = {clf.score(X_train, y_train)}")

print(f"R2 Score for Test Data = {clf.score(X_test, y_test)}")
```

OUTPUT :

R2 Score for Test Data = 0.9686558466621529

RESULT: Thus the program to implement artificial neural networks for an application in Regression using Python is successfully executed.