Experiment No: 11 Implementing Artificial Neural Networks for an Application using Python Regression

Aim:

To implementing 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, random_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 for Regression is successfully executed and the output is verified.