

Ex: No: 11

Regression

Date:

Program code:

Import python libraries.

% matplotlib inline

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

print (f" x shape: { x.shape }, y shape:
{ y.shape }")

x_train, x_test, y_train, y_test = train_test_
Split (x, y, test_size = 0.2, shuffle = True,
random_state = 42)

mlf = MLPRegressor (max_iter = 1000)

mlf.fit (x_train, y_train)

print (f" R2 score for Training Data = { mlf.
score (x_train, y_train) }")

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

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

```
plt.figure(figsize=(8,6))
```

```
plt.plot([y.min(), y.max()], [y.min(),  
y.max()], color='red', lw=2)
```

```
plt.title('True vs predicted values')
```

```
plt.xlabel('True values')
```

```
plt.ylabel('Predicted values')
```

```
plt.show()
```

output:

```
Shapes of X and y: (1000, 100) (1000,)
R2 Score for Training Data = 1.00
R2 Score for Test Data = 0.97
```

Result:

Thus the program is successfully executed & the output is verified.