

Experiment No. 3

Student Name: SANSKAR AGRAWAL	UID: 20BCS5914
Branch: BE-CSE	Section/Group: 806-B
Semester: 5 th	Subject: Machine Learning Lab

Aim: In this experiment we are doing Linear Regression Implementation on Diabetes Dataset

Software/Hardware Requirements: Windows 7 & above version

Tools to be used:

- Anaconda Navigator

Implementation:

```

Experiment-3

[2] import numpy as np
    from sklearn import linear_model
    from sklearn.metrics import mean_squared_error

[3] db_x=np.array([[1], [2], [3]])
    db_x_train=db_x
    db_x_test=db_x

[4] db_y_train=np.array([4, 3, 5])
    db_y_test=np.array([4, 3, 5])

[5] model=linear_model.LinearRegression()
    model.fit(db_x_train,db_y_train)
    db_y_predicted=model.predict(db_x_test)

print("MSEis:",mean_squared_error(db_y_test,db_y_predicted))
print("Weight:",model.coef_)
print("intercept:",model.intercept_)

MSEis: 0.5
Weight: [0.5]
intercept: 3.0

```

+ Code + Text

```
import matplotlib.pyplot as plt
import numpy as np
from sklearn import datasets, linear_model
from sklearn.metrics import mean_squared_error
db=datasets.load_diabetes()
#print(db.target)
db_x=db.data[:,np.newaxis,2]
#db_x=db.data
#print(db_x)
db_x_train=db_x[:-50]
db_x_test=db_x[-50:]
db_y_train=db.target[:-50]
db_y_test=db.target[-50:]
model=linear_model.LinearRegression()
model.fit(db_x_train,db_y_train)
db_y_predicted=model.predict(db_x_test)
print("MSEis:",mean_squared_error(db_y_test,db_y_predicted))
print("Weight:",model.coef_)
print("Intercept:",model.intercept_)
plt.scatter(db_x_test,db_y_test)
plt.plot(db_x_test,db_y_predicted)
plt.show()
```

MSEis: 3471.923196056966
Weight: [945.4992184]
Intercept: 152.33489819153206

