

▼ lab-6

Regression: Regression analysis is a statistical method to model the relationship between a dependent (target) and independent (predictor) variables with one or more independent variables. More specifically, Regression analysis helps us to understand how the value of the dependent variable is changing corresponding to an independent variable when other independent variables are held fixed.

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

np.random.seed(42)
x = np.random.rand(50)
y = np.random.rand(50)

df = pd.DataFrame({'x': x, 'y': y})

reg = LinearRegression()
reg.fit(df[['x']], df[['y']])

y_pred = reg.predict(df[['x']])

plt.scatter(x, y)
plt.plot(x, y_pred, color='red')
plt.show()
```

