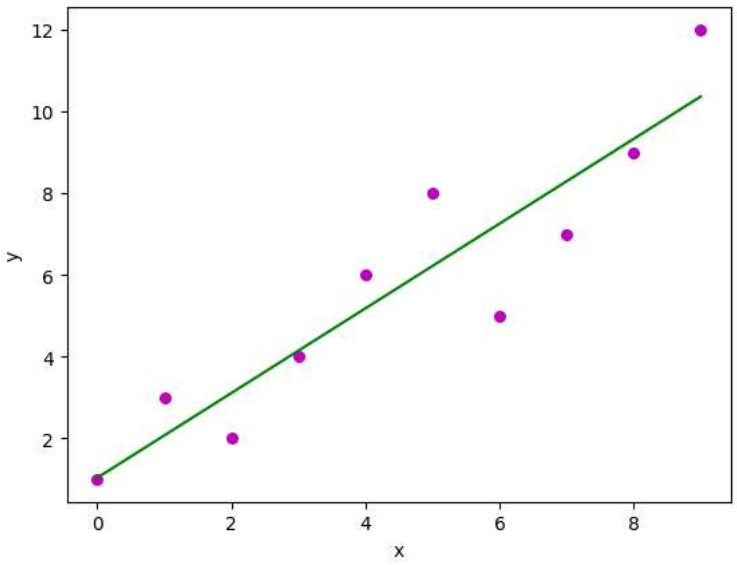
```
import numpy as np
import matplotlib.pyplot as plt

x= np.array([0,1,2,3,4,5,6,7,8,9])
y= np.array([1,3,2,4,6,8,5,7,9,12])

n=np.size(x)

m_x=np.mean(x)
m_y=np.mean(y)

ss_xy=np.sum(y*x)-n*m_y*m_x
ss_xx=np.sum(x*x)-n*m_x*m_x

b1=ss_xy/ss_xx
b0=m_y-b1*m_x

print(b1)
print(b0)
```

```
1.0363636363636364
1.0363636363636362
```

```
plt.scatter(x,y,color="m",marker="o",s=30)
y_pred=b0+b1*x
plt.plot(x,y_pred,color="g")
plt.xlabel('x')
plt.ylabel('y')
plt.show()
```




```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

dataset = pd.read_csv('Salary_Data.csv')
dataset.head()
```

	YearsExperience	Salary
0	1.1	39343.0
1	1.3	46205.0
2	1.5	37731.0
3	2.0	43525.0
4	2.2	39891.0

```
X = dataset.iloc[:,:-1].values
y = dataset.iloc[:,1].values
```

```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X,y,test_size=1/3,random_state=0)
```

```
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(X_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

```
y_pred = regressor.predict(X_test)
y_pred
```

```
array([ 40835.10590871, 123079.39940819,  65134.55626083,  63265.36777221,
       115602.64545369, 108125.8914992 , 116537.23969801,  64199.96201652,
        76349.68719258, 100649.1375447 ])
```

```
y_test
```

```
array([ 37731., 122391.,  57081.,  63218., 116969., 109431., 112635.,
        55794.,  83088., 101302.])
```

```
plt.scatter(X_train, y_train, color='red')

plt.plot(X_train, regressor.predict(X_train), color='green')

plt.title("Salary vs Experience")

plt.xlabel("Experience (years)")
plt.ylabel("Salaries (per month)")
plt.show()
```