OUTPUT

The probability that it is Friday & that a student is absent is : 0.03

No. of Fridays in a week : 0.2

The probability that a student is absent when the date is Friday is 15.0%

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1) The probability that it is Friday and that a student is absent is 3%. Now apply Bayes' rule in Python to calculate the probability that a student is absent when the date is Friday wrt the whole week.

```
anb = float(input('The probability that it is Friday & that a student is absent is : '))

b = float(input('No. of Fridays in a week'))

ab = (anb/b) * 100

print(f'The probability that a student is absent when the date is Friday is {ab}%')
```

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OUTPUT

	NAME	ROLL NO.	SECTION	MARKS
0	BRISTIDEV BURMAN	46	CSE1	98
1	DEBANJAN PAN	50	CSE1	90
2	MAFUJA KHATUN	212	CSE1	95
3	BIKI BANERJEE	44	CSE1	97
4	KOUSHANI CHOUDHURY	214	CSE1	93

Enter name of the student: BRISTIDEV BURMAN

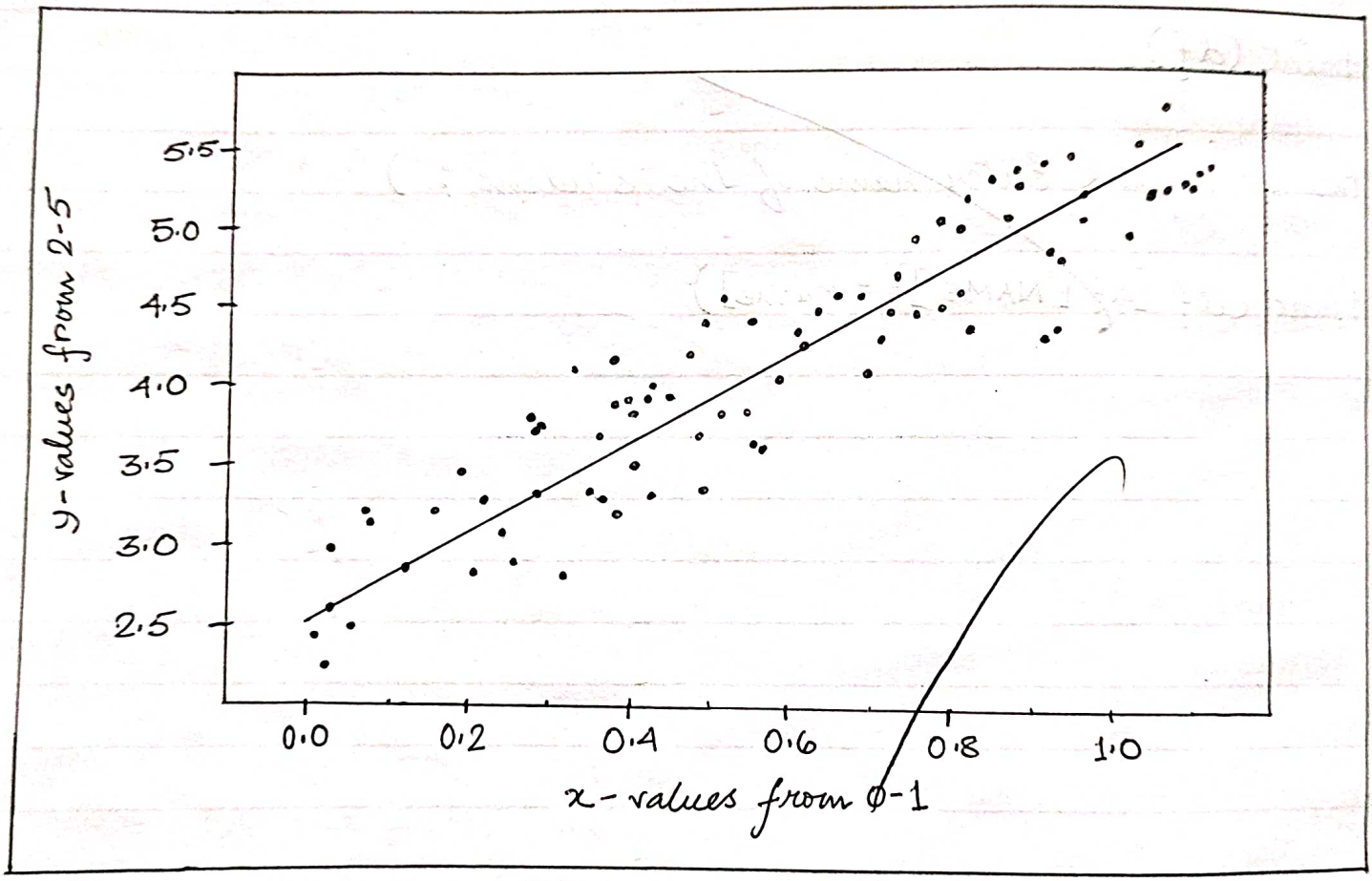
	NAME	ROLL NO.	SECTION	MARKS
0	BRISTIDEV BURMAN	46	CSE1	98

2) Extract the data from database using Python.

```
import pandas as pd
import numpy as np

df = pd.read_csv ('Book1.csv')

print (df)

name = input ("Enter name of the student :")

print (df [df['NAME'] == name])
```

OUTPUT

Slope: [[2.93655106]]
Intercept: [2.55808002]
Root Mean Squared: 0.0076233245828750 07
R2 score: 0.9038655568672764



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3) Implement linear regression using Python

```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score

np.random.seed(0)
x = np.random.rand(100,1) # Generate Random Dataset
y = 2+3*x + np.random.rand(100,1)
regression_model = LinearRegression()
regression_model.fit(x,y)
y_predicted = regression_model.predict(x)
rmse = mean_squared_error(y, y_predicted)
r2 = r2_score(y, y_predicted)
print('Slope:', regression_model.coef_)
print('Intercept:', regression_model.intercept_)
print('Root Mean Squared:', rmse)
print('R2 score:', r2)
plt.scatter(x, y, s=10, c='black')
plt.xlabel('x-values from 0-1')
plt.ylabel('y-values from 2-5')
plt.plot(x, y_predicted, color='k')
plt.show()
```

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OUTPUT

	Unnamed:0	send	call	DC	items	MSCV	BA	MB2	TXO	C1	C2	C3
0	0	1	9098	9GGDD	121	JHK	1	2	3	9	6	2
1	1	2	9045	BCUSD	234	MAL	2	4	5	9	1	8
2	2	3	9044	BCDEE	345	DFC	21	42	53	95	41	87
3	3	4	9045	BSESD	567	IMN	25	49	15	99	12	80
4	4	5	9048	BCJSU	889	SBU	2779	4689	785	96	1	8676

```
[[1 9098 '9GGDD' 121 'JHK' 1 2 3]
 [2 9045 'BCUSD' 234 'MAL' 2 4 5]
 [3 9044 'BCDEE' 345 'DFC' 21 42 53]
 [4 9095 'BSESD' 567 'IMN' 25 49 15]
 [5 9048 'BCJSU' 889 'SBU' 2779 4689 785]]
```

```
[[ 9    6    2]
 [ 9    1    8]
 [95   41   87]
 [99   12   80]
 [96    1 8676]]
```

```
[[1  9098 '9GGDD' 121 'JHK']
 [2  9045 'BCUSD' 234 'MAL']
 [3  9044 'BCDEE' 345 'DFC']
 [4  9095 'BSESD' 567 'IMN']
 [5  9048 'BCJSU' 889 'SBU']]
```

```
[[1  9098 '9GGDD' 121 'JHK' 1 2 3]
 [2  9045 'BCUSD' 234 'MAL' 2 4 5]
 [3  9044 'BCDEE' 345 'DFC' 21 42 53]
 [4  9095 'BSESD' 567 'IMN' 25 49 15]
 [5  9048 'BCJSU' 889 'SBU' 2779 4689 785]]
```

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4) Extract data from .csv file using Python. (Consider the dataset consist of 8 input columns and 3 output columns).

```
import pandas as pd
dataset = pd.read_csv('MUL_label.csv', delimiter = ',')
print (dataset)
x = dataset [['send', 'call', 'DC', 'items', 'MSCV', 'BA', 'MB2', 'TXO']].values
y = dataset [['C1', 'C2', 'C3']].values
print (x)
print(y)
x1 = dataset [['send', 'call', 'DC', 'items', 'MSCV']].values
print (x1)
print (x[0:5])
```

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