

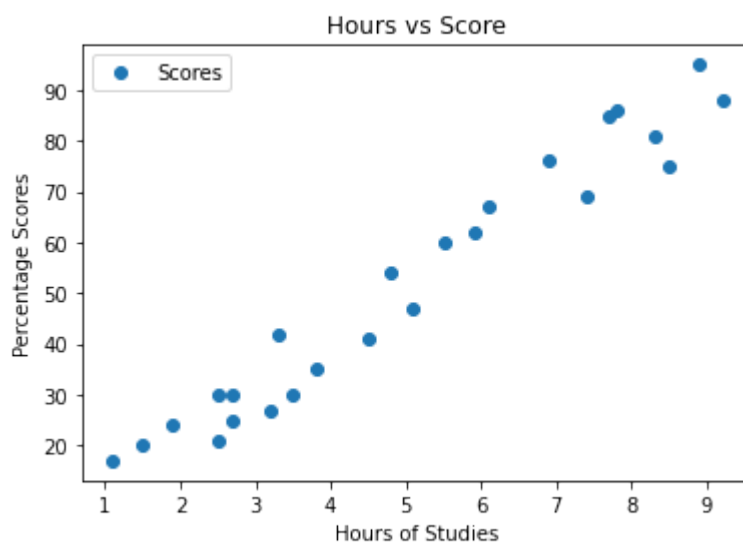
```
In [2]: 1 import pandas as pd
        2 data = pd.read_csv("Study.csv")
        3 df=data.head()
```

```
In [3]: 1 df
```

Out[3]:

	Hours	Scores
0	2.5	21
1	5.1	47
2	3.2	27
3	8.5	75
4	3.5	30

```
In [4]: 1 import matplotlib.pyplot as plt
        2 data.plot(x='Hours', y='Scores', style= 'o')
        3 plt.title('Hours vs Score')
        4 plt.xlabel('Hours of Studies')
        5 plt.ylabel('Percentage Scores')
        6 plt.show()
```



In [6]:

```
1 x=data.iloc[:, -1].values
2 print(x)
3 y=data.iloc[:, -1].values
4 print(y)
```

```
[2.5]
[5.1]
[3.2]
[8.5]
[3.5]
[1.5]
[9.2]
[5.5]
[8.3]
[2.7]
[7.7]
[5.9]
[4.5]
[3.3]
[1.1]
[8.9]
[2.5]
[1.9]
[6.1]
[7.4]
[2.7]
[4.8]
[3.8]
[6.9]
[7.8]]
[21 47 27 75 30 20 88 60 81 25 85 62 41 42 17 95 30 24 67 69 30 54 35 76
86]
```

```
In [7]: 1 from sklearn.model_selection import train_test_split
        2 xtrain,xtest,ytrain,ytest=train_test_split(x,y,test_size=0.2,random_sta
        3 xtrain,xtest,ytrain,ytest
```

```
Out[7]: (array([[3.8],
                [1.9],
                [7.8],
                [6.9],
                [1.1],
                [5.1],
                [7.7],
                [3.3],
                [8.3],
                [9.2],
                [6.1],
                [3.5],
                [2.7],
                [5.5],
                [2.7],
                [8.5],
                [2.5],
                [4.8],
                [8.9],
                [4.5]]),
        array([[1.5],
                [3.2],
                [7.4],
                [2.5],
                [5.9]]),
        array([35, 24, 86, 76, 17, 47, 85, 42, 81, 88, 67, 30, 25, 60, 30, 75, 2
1,
                54, 95, 41], dtype=int64),
        array([20, 27, 69, 30, 62], dtype=int64))
```

```
In [8]: 1 xtrain.shape
```

```
Out[8]: (20, 1)
```

```
In [9]: 1 ytrain.shape
```

```
Out[9]: (20,)
```

```
In [10]: 1 xtest.shape
```

```
Out[10]: (5, 1)
```

```
In [11]: 1 ytest.shape
```

```
Out[11]: (5,)
```

```
In [12]: 1 data.shape
```

```
Out[12]: (25, 2)
```

```
In [21]: 1 from sklearn.linear_model import LinearRegression
2 regressor=LinearRegression()
3 regressor.fit(xtrain,ytrain)
```

Out[21]: LinearRegression()

```
In [22]: 1 regressor.coef_
```

Out[22]: array([9.91065648])

```
In [23]: 1 regressor.intercept_
```

Out[23]: 2.018160041434683

```
In [13]: 1 from sklearn.linear_model import LinearRegression
2 lr=LinearRegression()
3 lr.fit(xtrain,ytrain)
```

Out[13]: LinearRegression()

```
In [23]: 1 prediction=lr.predict(xtest)
```

```
In [24]: 1 prediction
```

Out[24]: array([16.88414476, 33.73226078, 75.357018 , 26.79480124, 60.49103328])

```
In [19]: 1 xtest
```

Out[19]: array([[1.5],
[3.2],
[7.4],
[2.5],
[5.9]])

```
In [25]: 1 ytest
```

Out[25]: array([20, 27, 69, 30, 62], dtype=int64)

```
1 lr.intercept_
```

```
In [21]: 1 lr.coef_
```

Out[21]: array([9.91065648])

```
In [27]: 1 from sklearn.metrics import mean_absolute_error,r2_score
2 mean_absolute_error(ytest,prediction)
```

Out[27]: 4.183859899002975

```
In [ ]: 1
```

