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In [ ]: Linear-Regression

In [ ]: Importing All the Required Libraries

In [4]: import pandas as pd
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt

In [ ]: Reading CSV File

In [6]: df= pd.read_csv('Height-Weight Data.csv')
df

Out[6]:
```

	Height	Weight
0	73.847017	241.893563
1	68.781904	162.310473
2	74.110105	212.740856
3	71.730978	220.042470
4	69.881796	206.349801
...
3496	69.296830	185.649086
3497	70.542201	210.198845
3498	73.912549	202.429960
3499	67.396021	144.277671
3500	72.738970	187.222909

3501 rows × 2 columns

```
In [ ]: Checking Header File

In [9]: df.head()

Out[9]:
```

	Height	Weight
0	73.847017	241.893563
1	68.781904	162.310473
2	74.110105	212.740856
3	71.730978	220.042470
4	69.881796	206.349801

```
In [ ]: Check Header Tail Function

In [10]: df.tail()

Out[10]:
```

	Height	Weight
3496	69.296830	185.649086
3497	70.542201	210.198845
3498	73.912549	202.429960
3499	67.396021	144.277671
3500	72.738970	187.222909

```
In [ ]: Checking header Serial two

In [11]: df.head(2)

Out[11]:
```

	Height	Weight
0	73.847017	241.893563
1	68.781904	162.310473

```
In [ ]: Checking Height

In [13]: df.Height

Out[13]:
```

0	73.847017
1	68.781904
2	74.110105
3	71.730978
4	69.881796
...	...
3496	69.296830
3497	70.542201
3498	73.912549
3499	67.396021
3500	72.738970

Name: Height, Length: 3501, dtype: float64

```
In [ ]: Checking Weight

In [14]: df.Weight

Out[14]:
```

0	241.893563
1	162.310473
2	212.740856
3	220.042470
4	206.349801
...	...
3496	185.649086
3497	210.198845
3498	202.429960
3499	144.277671
3500	187.222909

Name: Weight, Length: 3501, dtype: float64

```
In [ ]: Checking Height Mean
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In [20]: df.Height.mean()
```

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Out[20]: 69.02441087268797
```

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In [ ]: Checking Weight Mean
```

```
In [21]: df.Weight.mean()
```

```
Out[21]: 186.89125797946284
```

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In [ ]: All File Describing
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In [23]: df.describe()
```

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Out[23]:
```

	Height	Weight
count	3501.000000	3501.000000
mean	69.024411	186.891258
std	2.858583	19.903132
min	59.380650	65.780000
25%	67.193523	173.896237
50%	69.044211	187.308370
75%	70.976491	200.356448
max	78.998742	269.989698

```
In [ ]: Checking Null Value of data
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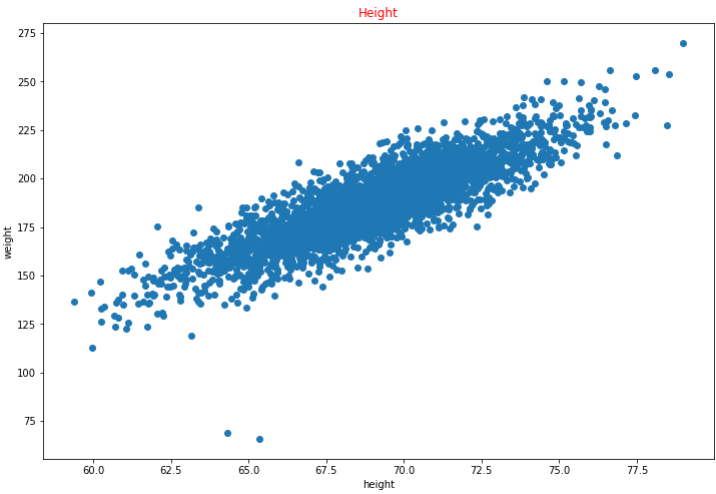
```
In [24]: df.isnull().sum()
```

```
Out[24]: Height    0
Weight    0
dtype: int64
```

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In [ ]: Plot The Data
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```
In [39]: plt.figure(figsize=(12,8))
plt.scatter(df.Height,df.Weight)
plt.xlabel('height')
plt.ylabel('weight')
plt.title('Height',color='red')
```

```
Out[39]: Text(0.5, 1.0, 'Height')
```



```
In [44]: x=df[['Height']]
y=df[['Weight']]
```

```
In [ ]: Defing X Header
```

```
In [47]: x.head()
```

```
Out[47]:
```

	Height
0	73.847017
1	68.781904
2	74.110105
3	71.730978
4	69.881796

```
In [ ]: Defing Y Header
```

```
In [48]: y.head()
```

```
Out[48]:
```

	Weight
0	241.893563
1	162.310473
2	212.740856
3	220.042470
4	206.349801

```
In [ ]: Train and Test data

In [49]: from sklearn.model_selection import train_test_split as tts

In [ ]: xtrain,xtest,ytrain,ytest=tts(x,y,test_size=.30)

In [ ]: X Train Model

In [53]: xtrain.head()

Out[53]:      Height
1960  66.320967
3326  72.075523
3027  68.362858
1126  70.323493
430   76.027082

In [ ]: Y Train Model

In [54]: ytrain.head()

Out[54]:      Weight
1960  167.214626
3326  202.849637
3027  189.203924
1126  186.065532
430   232.313471

In [ ]: Data into Array

In [59]: x=np.array(df.Height).reshape(-1, 1)
y=np.array(df.Weight).reshape(-1, 1)
x

Out[59]: array([[73.84701702],
 [68.78190405],
 [74.11010539],
 ...,
 [73.91254915],
 [67.39602078],
 [72.73897   ]])

In [ ]:

In [71]: df['Weightit'] = (x)
df.head()

Out[71]:      Height      Weight      Weightit
0  73.847017  241.893563  73.847017
1  68.781904  162.310473  68.781904
2  74.110105  212.740856  74.110105
3  71.730978  220.042470  71.730978
4  69.881796  206.349801  69.881796

In [ ]: Predict Value

In [ ]: Value of Height

In [76]: x= input("Enter the value of Height : ")
print("Your predicted value is : ",y)

Enter the value of Height : 71.730978
Your predicted value is :  [[241.8935632]
 [162.3104725]
 [212.7408556]
 ...
 [202.4299596]
 [144.2776711]
 [187.2229089]]

In [ ]: Value of Weight

In [77]: x= input("Enter the value of Weight : ")
print("Your predicted value is : ",y)

Enter the value of Weight :      220.042470
Your predicted value is :  [[241.8935632]
 [162.3104725]
 [212.7408556]
 ...
 [202.4299596]
 [144.2776711]
 [187.2229089]]

In [ ]:
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