Y=MX+C

August 25, 2022

1 Y=MX+C

[35]:
```
x = [1,2,3,4,5]
y = [3,4,2,4,5]
```

[22]:
```
import numpy as np
```

[23]:
```
x_mean = np.mean(x)
y_mean = np.mean(y)
```

[24]:
```
x_meanx = []
y_meany = []
```

[25]:
```
x_meanx2 = []
x_meanx_ymeany = []
```

[26]:
```
for i in range(len(x)):
    x_meanx.append(x[i]-x_mean)
    y_meany.append(y[i]-y_mean)
    x_meanx2.append(x_meanx[i]*x_meanx[i])
    x_meanx_ymeany.append(x_meanx[i]*y_meany[i])
```

[27]:
```
x_meanx = sum(x_meanx)
y_meany = sum(y_meany)
x_meanx2 = sum(x_meanx2)
x_meanx_ymeany = sum( x_meanx_ymeany)
```

[28]:
```
m = (x_meanx_ymeany)/x_meanx2
```

[29]:
```
print(m)
```

```
0.4
```

[30]:
```
#y = mx+c
#y-mx = c
c = np.mean(y) -(m*np.mean(x))
```

[31]:
```
print(c)
```

```
2.4
```

[32]:
```
print("y=",m,"x+",c)
```

```
y= 0.4 x+ 2.4
```

2 Linear regression

[33]:
```
from sklearn.linear_model import LinearRegression
```

[38]:
```
x = np.array(x)
y = np.array(y)
```

[39]:
```
x = x.reshape(-1,1)
y = y.reshape(-1,1)
```

[41]:
```
regressor = LinearRegression().fit(x,y)
```

[44]:
```
z = np.array([20]).reshape(-1,1)
```

[45]:
```
regressor.predict(z)
```

[45]:
```
array([[10.4]])
```

[ ]:
```

```