

## Linear Regression

Implement linear regression using python(sklearn, pandas, NumPy,...)

Perform regression analysis on the attached dataset.

Upload the notebook in your GIT repository and paste the link to the notebook as submission

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score
df = pd.read_csv("Ecom.csv")
df.shape
df
```

```
x=df.drop(['Avatar','Email','Address', 'Yearly Amount Spent'],axis=1)
```

```
y= df['Yearly Amount Spent']
```

```
classifier = LinearRegression()
classifier.fit(x,y)
y_pred = classifier.predict(x)
rmse = mean_squared_error(y, y_pred)
r2 = r2_score(y, y_pred)
```

```
print('Slope:' ,classifier.coef_)
print('Intercept:', classifier.intercept_)
print('Root mean squared error: ', rmse)
print('R2 score: ', r2)
```

```
Slope: [25.73427108 38.70915381  0.43673884 61.57732375]
Intercept: -1051.594255300625
Root mean squared error: 98.47102522148995
R2 score: 0.9843155370226726
```