

ASSIGNMENT-1

1. Given the following data of Temperature (°C) and Power Consumption (kWh):

Temperature (°C) (X)	Power Consumption (kWh) (Y)
10	300
12	310
14	320
16	330
18	345
20	360
22	370
24	390
26	420
28	450

- (a) Derive the regression equation, $Y=a+bX$, using the least squares method and calculate a (intercept) and b (slope). Also compute the value of $\sum X$, $\sum Y$, $\sum XY$
- (b) Using your predicted values (\hat{Y}), compute R^2 .
2. (a) Use Python (statsmodels) to fit model and compare.
(b) Interpret results (positive/negative slope, accuracy).
3. Using Python, perform **Linear Regression** on the dataset attached in excel format.