**ASSIGNMENT – 05**

**TOPIC: MULTIPLE LINEAR REGRESSION**

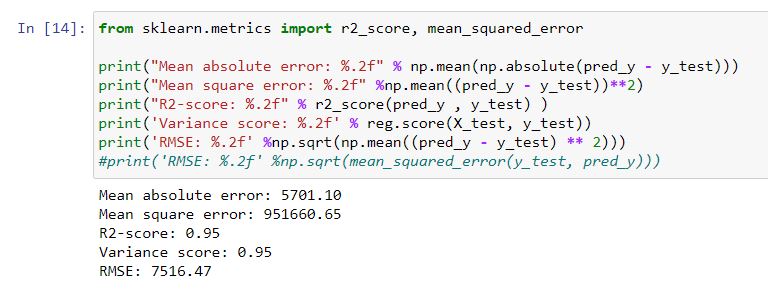
Q.1. Write notes about the assumptions of linear regression.

Q.2. Calculate MAE, MSE, RMSE, R-Square of multiple linear regression model.

**ASSUMPTIONS OF LINEAR REGRESSION:**

1. **Linearity**: The relationship between X and the mean of Y is linear.
2. **Lack of multicollinearity**: a state of very high inter-correlations or inter-associations among the independent variables.
3. **Homoscedasticity**: The variance of residual is the same for any value of X and if there is a specific pattern, the data is **Heteroscedastic.**
4. **Independence of error (Independence)**: Observations are independent of each other.
5. **Multivariate normality (normality)**: For any fixed value of X, Y is normally distributed.

**MAE, MSE, RMSE, R-Square of multiple linear regression:**

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