1. What is Normalization & Standardization and how is it helpful?

Normalization and standardization are two techniques used to rescale data before applying machine learning algorithms. Both techniques are essential to ensure that all features contribute equally to the model, especially when the features have different scales.

**Definition:** Normalization, also known as min-max scaling, transforms the data into a range between 0 and 1 (or -1 and 1).

**Definition:** Standardization transforms the data to have a mean of 0 and a standard deviation of 1. It’s also known as z-score normalization.

2. What techniques can be used to address multicollinearity in multiple linear regression?

Multicollinearity occurs when two or more predictor variables in a multiple regression model are highly correlated. This can lead to unreliable and unstable estimates of regression coefficients, making it difficult to determine the effect of each predictor on the outcome variable.