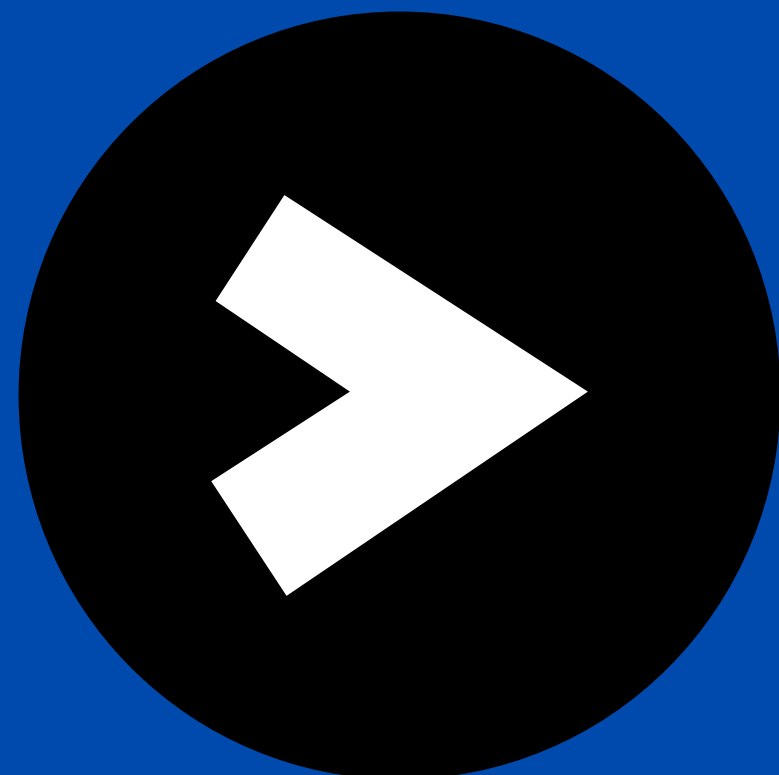
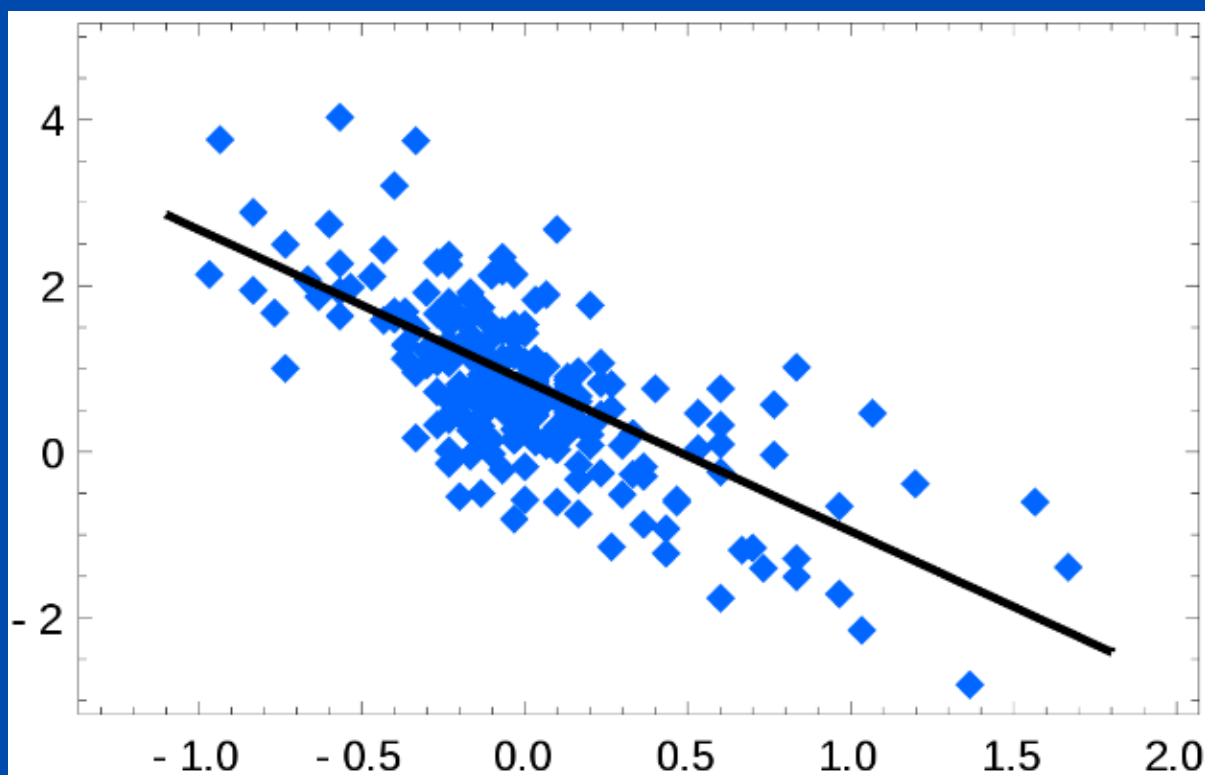


LINEAR REGRESSION

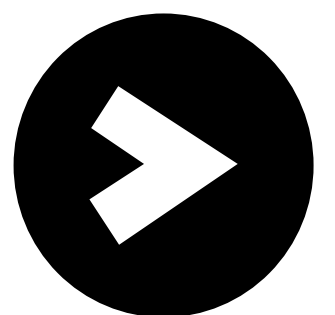
TOP 10 INTERVIEW QUESTIONS & ANSWERS



P R A S H A N T K U M A R

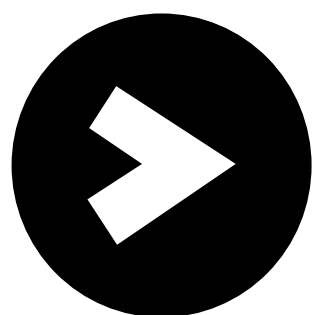
1. What is linear regression?

Linear regression is a statistical modeling technique used to analyze the relationship between a dependent variable and one or more independent variables.



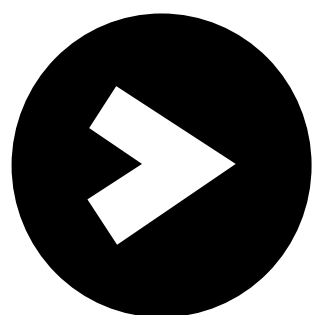
2. What are the assumptions of linear regression?

The key assumptions of linear regression are linearity, independence, homoscedasticity (constant variance), normality, and no multicollinearity.



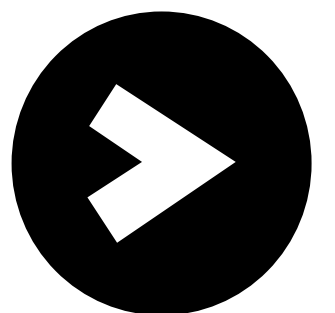
3. How do you interpret the coefficient of a linear regression model?

The coefficient represents the change in the dependent variable for a one-unit change in the corresponding independent variable, holding all other variables constant.



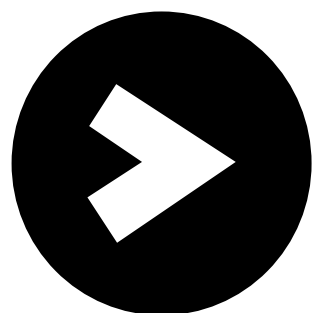
4. What is the difference between simple linear regression and multiple linear regression?

Simple linear regression involves predicting a dependent variable using only one independent variable, while multiple linear regression involves predicting the dependent variable using two or more independent variables.



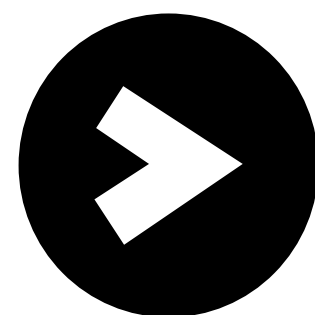
5. What is the purpose of the residual plot in linear regression?

The residual plot helps us assess the goodness of fit of the linear regression model by examining the distribution and patterns of the residuals. It helps to identify potential issues such as heteroscedasticity or non-linearity.



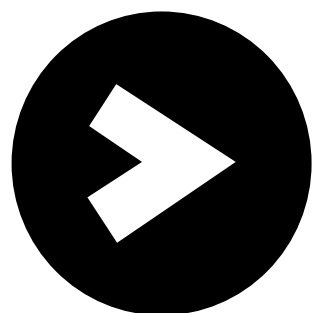
6. How do you handle multicollinearity in linear regression?

Multicollinearity occurs when independent variables are highly correlated. To handle it, one can remove one of the correlated variables, perform dimensionality reduction techniques like principal component analysis (PCA), or use regularization techniques like ridge regression or LASSO regression.



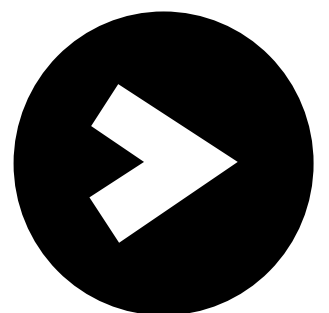
7. How do you evaluate the performance of a linear regression model?

Common evaluation metrics for linear regression include R-squared, adjusted R-squared, mean squared error (MSE), root mean squared error (RMSE), and mean absolute error (MAE).



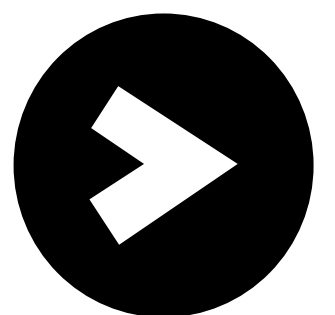
8. What is the difference between R-squared and adjusted R-squared?

R-squared measures the proportion of variance in the dependent variable explained by the independent variables, while adjusted R-squared adjusts for the number of predictors in the model.



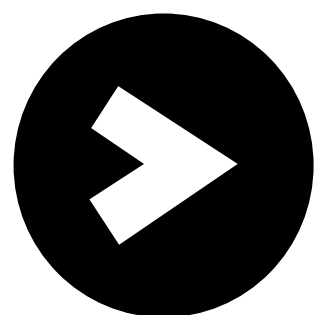
9. What are the assumptions of the error term in linear regression?

The assumptions of the error term include zero mean, constant variance, independence, and normal distribution.



10. What are some techniques to improve the performance of a linear regression model?

Techniques to improve model performance include feature engineering, addressing outliers and influential points, transforming variables, applying regularization techniques, and considering interactions between variables.



Thanks

Crack the Interview

By: Prashant Kumar