

## \*Linear Regression\*

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

Simple linear regression is to find the relation between has one dependant variable and one independent variable,whereas multiple linear regression is to find the relation between has two or more independant variable and one .dependent variable.Both the cases it is to find best fitline which gives least error for our test dataset.

2.Explain the concept of the cost function in linear regression.

Cost function is the function to the error of our regressionand it is the summation of errors between the actual output and the predicted output.

3.How do you interpret the coefficients in a linear regression model?

The coefficients of a linear regression models are of a linear regression models are nothing but the slope of the line in the particular axis or feature..

4.What are the assumptions of linear regression?

Linearity,independent features.

## Logistic Regression:\*

1.How does logistic regression differ from linear regression?

Logistic regression is used for classification problem whereas the linear regression is used for regression problem.

2.Explain the sigmoid function and its role in logistic regression.

Sigmoid function is a function which is used to map values from minus infinity to plus infinity to 0 to 1. And it is  $1/(1+e^{-x})$ .

3.What are the key performance metrics used to evaluate a logistic regression model?

Accuracy,r2score,recall.

4.How do you handle multicollinearity in logistic regression?

## \*Naive Bayes:\*

1.What is the Naive Bayes algorithm based on?

Naive bayes theorem is based on conditional probability.

2.Explain the concept of conditional probability in the context of Naive Bayes.

Conditional probability is nothing but finding probability of an event based on th one happened before.

3.What are the advantages and disadvantages of Naive Bayes?

4.How does Naive Bayes handle missing values and categorical features?

By removing the missing values row .

\*Support Vector Machines (SVM):\*

1.What is the basic idea behind SVM?

It is based on creating hyperplane which divides the values gives more accuracy for classification problem and best hyperplane for regression problems.

2.Explain the concepts of margin and support vectors in SVM.

Each hyperplane has centerline and margins and the margins are ones which correctly divides the each values for classification.

3.What are the different kernel functions used in SVM, and when would you use each?

Kernels are used to make multi dimension for lower dimension features and one of it is linear kernel.

4.How does SVM handle outliers?

By removing them.