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Q13 – Explain the term regularization.

Ans: Regularization is the most important concept of machine learning .it is the superb technique to prevent the model from overfitting by adding extra information to it. Sometimes models perform well with test data. It proves that model is not able to predict the output , and hence that model is get overfitted . this problem can be deal with the help of regularization method

- It maintains accuracy as well as generalization of the model.
- It works by adding a penalty or complexity to the complex model
- Generally it has two types 1. Ridge, 2. Lasso.

Q14 – which particular algorithms are used for regularization?

Ans: there are main regularization

1. Ridge regression (L2 norm) – when we add the sum of weight's square to a loss function and thus create the new loss function.
2. Lasso(L1 Norm)- Lasso function considers absolute weights, optimization algorithms penalize higher weight values.

3. Dropout – it is a regularization technique used in neural network.

Q15- Explain the team error present in linear regression equation?

Ans: **Linear regression** is the supervised Machine Learning model in which the model finds the best fit linear line between the independent model and dependent model

An error term is a residual variable produced by a statistical or mathematical model, which is created when the model does not fully represent the actual relationship between the independent variables and the dependent variables. As a result of this incomplete relationship, the error term is the amount at which the equation may differ during empirical analysis. linear regression model tracking a stock's price over time, the error term is the difference between the expected price at a particular time and the price that was actually observed . In instances where the price is exactly what was anticipated at a particular time, the price will fall on the trend line and the error term will be zero.

Multiple choice questions:-

Q1 Ans:- Least square error (option A)

Q2 Ans:- Line regression is sensitive to outliers (option A)

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Q3 Ans:- Negative(option B)

Q4 Ans:- Regression (option A)

Q5 Ans:- Low bias and high variance (option C)

Q6 Ans:- Predictive model (option B)

Q7 Ans:- Regularization (option B)

Q8 Ans:- SMOTE (option D)

Q9 Ans:- Sensitivity and sepcify (option C)

Q10 Ans:- False (option B)

Q11 Ans:- Construction bag of words from a email (option A)

Q12 Ans :- Correct options are

A) We don’t have to choose the learning rate

B) It becomes slow when number of features is very large.

C) We need to iterate.