Machine Learning Assignment

- Q1. A
- Q2. A
- Q3. C
- Q4. B
- Q5. C
- Q6. B
- Q7. D
- Q8. D
- Q9 C
- Q10. B
- Q11. B
- Q12. A,B,D
- Q13. Regularization refers to techniques that are used to calibrate machine learning models in order to minimize the adjusted loss function and prevent overfitting or underfitting. Using Regularization, we can fit our machine learning model appropriately on a given test set and hence reduce the errors in it. There are two main types of regularization techniques: Ridge Regularization and Lasso Regularization.
- Q14. There are various regularization techniques, some of the most popular ones are — L1, L2, dropout, early stopping, and data augmentation.
  Ridge and Lasso can be used for any algorithms involving weight parameters, including neural nets. Dropout is primarily used in any kind of neural networks e.g. ANN, DNN, CNN or RNN to moderate the learning.
  Ridge Regression (L2 Regularization) : Ridge regression is also called L2 norm or regularization.When using this technique, we add the sum of weight's square to a loss function and thus create a new loss function which is denoted thus
  Lasso Regression (L1 Regularization) : This technique is different from ridge regression as it uses absolute weight values for normalization.In ridge regression, loss function along with the optimization algorithm brings parameters near to zero but not actually zero, while lasso eliminates less important features and sets respective weight values to zero. Thus, lasso also performs feature selection along with regularization.
  Dropout :Dropout is a regularization technique used in neural networks. It prevents complex co-adaptations from other neurons

- Q15 . The error term is the difference between the expected price at a particular time and the price that was actually observed. An error term is generally unobservable and a residual is observable and calculable, making it much easier to quantify and visualize. In effect, while an error term represents the way observed data differs from the actual population, a residual represents the way observed data differs from sample population data..