Labs-

1. Simple linear regression

In this lab we have performed linear regression where we have ploted a graph between one independent variable and one dependent variable and a straight line came as an output.

Linear regression calculates the estimators of the regression coefficients

2. Multiple linear regression

Over here same as linear regression we have performed regression over two or more independent variables. case of more than two independent variables is similar, but more general.

3. Polynomial regression

In this lab we have performed polynomial regression. Which is the generalized case of linear regression. It is addition of linear terms.

4. Non – linear regression

5. Knn

Use K Nearest neighbors to classify data
In this Lab you will load a customer dataset, fit the data, and use K-Nearest Neighbors to predict a data point. it is important to consider the value of k. It considers the 'K' Nearest Neighbors (data points) when it predicts
the classification of the test point.

6. Decision tree

In this lab we have learned about the classification algorithm to build a model from the historical data of patients, and their response to different
medications. Then we will use the trained decision tree to predict the class of an unknown patient, or to find a proper drug for a new patient.

7. Logistic regression

From this lab we have learned Logistic Regression, and then, created a model for a telecommunication company, to predict when its customers will leave for a competitor, so that they can take some action to retain the customers. Using scikit Logistic Regression to classify and Understand confusion matrix.

8. Support vector machines

In this lab we have performed SVM (Support Vector Machines) to build and train a model using human cell records, and classify cells to whether the samples are benign or malignant. SVM works by mapping data to a high-dimensional feature space so that data points can be categorized, even when the data are not otherwise linearly separable. A separator between the categories is found, then the data is transformed in such a way that the separator could be drawn as a hyperplane. And observed characteristics of new data that can be used to predict the group to which a new record should belong.

9. K-means

In this lab performed K-means which is vastly used for clustering in many data science applications, it is especially useful if you need to quickly discover insights from unlabeled data. also generated dataset k-means on random dataset using customer segmentation.

10. Hierarchical Clustering

In this lab Create dendograms to visualize the clustering. Performed bottom to top approach.

11. Dbscan clustering

In this lab performed Density-based clustering which locates regions of high density that are separated from one another by regions of low density. Density, in this context, is defined as the number of points within a specified radius. the main focus will on manipulating the data and properties of DBSCAN and observing the resulting clustering.

12. Collaborative Filtering

In this lab we have performed Recommendation systems based on information taken from the user. These systems have become ubiquitous and can be commonly seen in online stores, movies databases and job finders. In this notebook, we will explore recommendation systems based on Collaborative Filtering and implement
simple version of one using Python and the Pandas library.

13. Content Based Filtering

In this lab we have performed Recommendation systems based on information taken from the user. These systems have become ubiquitous, and can be commonly seen in online stores, movies databases and job finders. In this notebook, we will explore Content-based recommendation systems and implement a simple version of one using Python and the Pandas library.