1) fibonacci number/series - are a series of integer that follow the rule that each number is the sum of the two numbers that come before it

2) Greedy method - also known as greedy algorithm is a technique for solving optimization problems by making best choice at each step.
O(nlogn) or O(n)

3) Huffman encoding - is a data compression algorithm that reduces the size of data without losing any information
O(nlogn)

4) Knapsack Problem - is a problem that involves packing a set of items into a container with a limited capacity

Knapsack Problem - is a problem that involves packing a set of items, with given values and sizes (such as weights or volumes) into container with a maximum capacity.

5) Knapsack problem using greedy Method-
O(nlogn) is an algo that selects items for a knapsack based on their value-to-weight ratio

6) Dynamic programming - is a problem solving technique that breaks down complex problems into smaller,

7) Knapsack problem using dynamic programming 0/1 -
O(nw) works on the principle of using a table to store the answers to solved subproblems.

8) n-Queen problem - is a classic chess puzzle that involves placing N queens on an N×N chessboard so that no two queens can attack each other

9) backtracking - an algo technique that O(n!) involves trying out possible ~~solutions~~ choices to arrive at a solution.

10) outliers - is a single data point that goes far outside the average value of a group of statistics.

11) Data preprocessing - is the process of cleaning, organizing & transforming raw data into a suitable format for analysis

12) linear regression - that computes linear relationship betw dependent variable & one or more independent variable

13) Random forest regression - is a ML algo that uses multiple decision trees to predict continuous target variables

14) Matplotlib - is data visualization library in python used for creating high-quality charts & plots

15) Mean square error (MSE) - is a metric that measures the average squared difference betw the predicted & actual values in a dataset

16) Binary classification - is a ML algo that categorics data into one of two groups, or classes, based on a set of attributes

17) K- nearest neighbours (KNN) -

super ML

is a ML technique that uses proximity to make classification or predictions about grouping of an individual data point.

18) Support vector Machine ~~SM~~ (SVM) -

is a ML algo that classifies data by finding a hyperplane that seperates data into classes.

- used for both classification & regression tasks

19) train-test split ⇒ is a ML technique that involves dividing a dataset into two subsets i.e training set & a testing set.

20) Training set :- used to train the machine learning model

21) Testing set - used to evaluate the model's performance and generalization capabilities.

22) feature scaling - is a method used to normalize the range of independent variables or features of data.
Also known as data normalization

23) neural network classifier - is a model that uses a network of neurons to convert an i/p into an o/p

24) Artificial neural network - (ANN)

It is a type of machine learning algo that uses a network of interconnected nodes to process data & learn from mistakes. similar to human brain

25) Normalization - is a data preparation technique that scales numeric columns in a dataset to a common range.

26) standardization - is a data preprocessing technique that rescales data values to have a mean of 0 and a standard deviation of 1.
This procss Also known as z-score scaling

27) confusion matrix - is a visualization tool that compares a machine learning model's predicted value to the actual values for a dataset

| actual \ predicted | (1) positive | (0) negative |
|---|---|---|
| (1) positive | TP | FN |
| (0) negative | FP | TN |

28) ROC curve -
ROC - stands for Receiver operating characteristics
ROC curves are graphs showing classifiers performance by plotting the true positive rate & false positive rate

29) ~~K-nearest ne~~

K - fold cross validation -

we split the dataset into K-number of subsets (known as folds) then we perform training on the all the subsets but leave one (K-1) subset for the evaluation of trained model.

30) K-mean clustering / hiraochial clustering

is a machine learning algo that groups unlabelled data points into clusters based on how similar they are to each other.