- Naïve Bayes: It is an algorism used in the classification process and depends on the application of Bayes' Theorem, where it depends on complete independence between class.
- The goal of Naive Bayes is to determine a good and peaceful classification.
- The model is trained to calculate the conditional probabilities of each class based on the features.
- Predicting, calculated conditional probabilities are used to determine the most probable class for the new data.

- ==Data exploration and preprocessing steps:==

  1. Determine the percentage of missing values in cabin column.

  2. drop the cabin column because it has large number of missing values, and it will affect the classification results.

  3. fill missing values in embarked column.
  4. fill missing values in age column with median.
  5. Removal of unimportant columns like Passenger id, name, and ticket columns because all these columns will not affect the features and the classification results after that.
  6. encode Pclass',"Embarked", "Sex" columns because they are main features, and we need to deal with them as a 0 or 1 nor categorical data.

- ==Feature selection rationale:==
  - All columns will be except the survived column because the exact classification of the new data is determined.

- labels will be the survivor column that will determine if the passenger is a survivor or not relying on the new features.

- Model training process and parameter tuning:

    o The function takes X train and Y train.

- Evaluation results:

    o The Accuracy is = 0.7877094972067039

- challenges:

    o The challenges were in the presence of some important features that consist of categories and not numbers to help the classification process as well as the presence of data that has no importance in the classification process and the process of training the model and the presence of .