**Logistic Regression:**

* **Deals with categorical variables (discrete variables)**
* Used for classification
* **Sigmoid function:**

Y = 1 / (1 + e^-x)

* + e is Euler’s constant whose value is 2.718

**Sigmoid function will convert the independent variable into expression of probability that ranges between 0 and 1 with respect to the dependent variable.**

It will give an S shape graph and there is a cut off line. Some points are above cut off line and some are bellow. Both of them are belong to different classes.

The points at cut off line are un-classifiable. (Rare case)

* Binary classification is the strength of logistic regression
* **Application of logistic regression:**
  + Fraud detection
  + Disease diagnosis
  + Emergency detection
  + ‘Spam’ ‘No spam’
* **Important points when using logistic regression:**
  + Data should be free of missing values
  + 30-50 data points for each output variable(class)

So, in case of binary logistic regression, 60-100 data points are considered.