2.Below table contains the bank details of customer – need to predict the how we can offer loan to customer based on the cybill score, Age, insurance, debit card , cards.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Cutomer id | Cards | Debit card | Insurance | Age | Cybill Score | Loan offer |
| 5 | 0 | 1 | 0 | 50 | 34.94 | 0 |
| 3 | 1 | 0 | 0 | 18 | 0.891 | 1 |
| 66 | 0 | 1 | 0 | 5 | 0.33 | 1 |
| 70 | 0 | 1 | 1 | 31 | 0.037 | 0 |
| 96 | 0 | 1 | 0 | 30 | 0.038 | 1 |

**Attributes in the dataset**

Customer Id, Cards, Debit Card,Insurance, Age, Cybil score, Loan Offer

**Solutions:**

* Our aim from the project is to make use of pandas, matplotlib, & seaborn libraries from python to extract insights from the data & scikit-learn libraries for machine learning.
* With the given dataset we can predict loan offer by building the model of Logistic Regression.
* So here I used Logistic Regression Model, Random Forest ,Decision Tree.
* Finally I predicted the suitable model for the above dataset( refer attached loan prediction ipynb )

## What is Logistic Regression?

Logistic regression is used for binary classification where we use sigmoid function, that takes input as independent variables and produces a probability value between 0 and 1.

For example, we have two classes Class 0 and Class 1 if the value of the logistic function for an input is greater than 0.5 (threshold value) then it belongs to Class 1 it belongs to Class 0. It’s referred to as regression because it is the extension of linear regression but is mainly used for classification problems.