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Loan Prediction System

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ABSTRACT

In the banking sector, people are applying for bank loans but the bank has its limited assets which it has to grant to limited people only. Finding out to whom the loan can be granted which will be a safer option for the bank is a typical process. In today's life, the banking industry still wants a more scrutinized predictive modeling framework. In this paper we are proposing personal loan prediction with some key attribute and machine learning algorithm.

Keywords: Machine Learning, Supervised Learning, Logistic Regression Algorithm

1. INTRODUCTION

Loan prediction is a system which provides an interface for loan approval to the applicant's loan application. An applicant provides the system about their personal information. According to their personal information; bank gives his status of availability of loan. As the data are increasing daily due to digitization in the banking sector, people wants to apply for loans through the internet. A bank's profit or loss depends to a large extent on loans i.e. whether the customers are paying back the loans or defaulting.

In this paper, the main aim is to minimize the risk present in approving loan to applicant. This system will be really helpful to both the bank and the applicant. In this system, we are working on the logistic regression algorithm in supervised learning in machine learning.

Supervised learning is one of the types of machine learning. The name "supervised" denotes that a supervisor or a teacher. Supervised learning algorithms are working using the labelled training data. The aim of a supervised learning algorithm is to find a mapping function to map the input with the output.

Logistic regression is one of the most popular machine learning algorithms. It used for predicting the categorical dependent variable using a given set of independent variables. Logistic regression predicts the output of a categorical variable. Therefore the outcome must be a categorical or district value. It can be either Yes or No, 0 or 1, True or False, etc. But instead of giving the exact value as 0 and 1, it gives the probabilistic values which lie between 0 and 1.

1.1 METHODOLOGY

In this paper we are mainly predicted the personal loan based on their personal information. The methodology having the different phases like: data collection, feature selection, data visualization, splitting data into training data and testing data, accuracy.

Step-1: Firstly, we have to gather the data from Kaggle, which is one of the most providers of data sources for the purpose of learning. When the data collected from Kaggle, there had two types of data sets of details, one is which was used for the preparation and the supplementary test.

Step-2: Any predictor variables are considered from dataset and one target variable in the training dataset. Using pandas data frame, the records were read and added to the data frame. After that, the data was visualized using seaborn. Unitization analysis and

mathematics analysis are being implemented. Unitization analysis is the simple form of analyzing information where analysis of every variable done separately. Mathematics analysis is used for analyzing data with two variables.

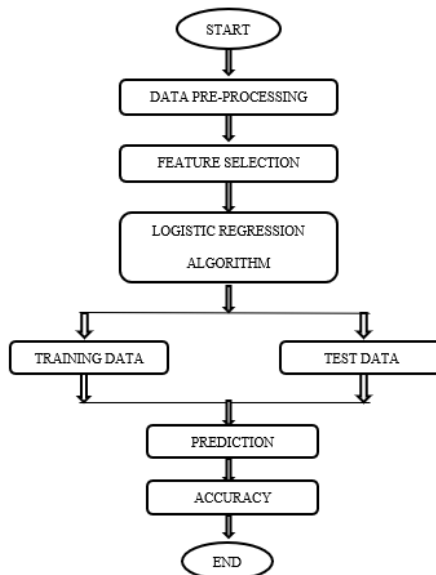


FIG: Architecture Diagram

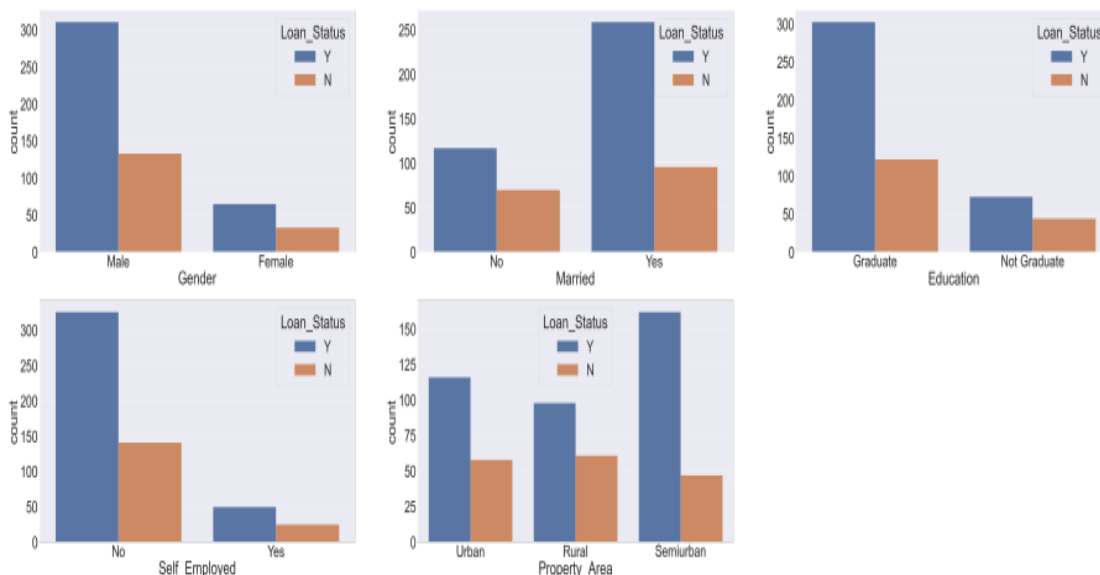


FIG: Loan Data Visualization

2. CONCLUSION

Loan prediction using machine learning process helps us to predict the loan based on applicants personal information. There are many algorithms to predict the loan. Some of the algorithms are Decision Tree, KNN, Random Forest, XGBoost. But even though we have many algorithms correct prediction is necessary to detect the loan so that necessary precautions can be taken by the individual and incorrect prediction might leads to consequences for the individual.

In order to predict correctly the particular algorithm needs to be accurate and hence we can have a better performance on predicting the result. Logistic regression is one of the algorithms with good accuracy of 78% and can be a good algorithm that would be able to predict loan more effectively than other algorithms.

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