iNeuron

Low Level Design

Credit Card Default Prediction

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Document Version	0.1
Last Revised Date	15-June-2023

Document Control

Records:

Version	Date	Author	Comments
0.1	02 – June-2023	Govind D.	Introduction & Architecture defined
0.1	04-June-2023	Govind D.	Architecture & Architecture Description appended and updated

Reviews:

Version	Date	Reviewer	Comments
0.1	02 – June-2023		Document Content, Version Control and Unit Test Cases to be added

Approval Status:

Version	Reviewer Date	Reviewer By	Approved By	Comments

Document Control

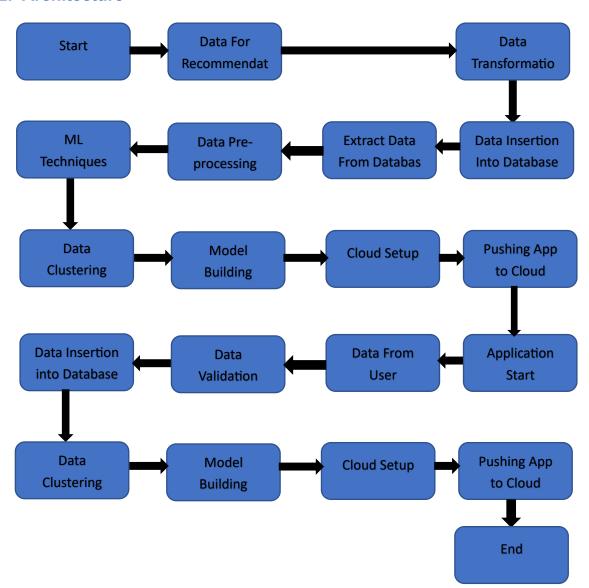# Contents

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1. Introduction

1.1 What is Low-Level design document?

The goal of LLD or a low-level design document (LLDD) is to give the internal logical design of the actual program code for Food Recommendation System. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-bystep refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

2. Architecture

Start	→	Data For Recommendat	→	Data Transformatio

ML Techniques	←	Data Pre-processing	←	Extract Data From Databas	←	Data Insertion Into Database

Data Clustering	→	Model Building	→	Cloud Setup	→	Pushing App to Cloud

Data Insertion into Database	←	Data Validation	←	Data From User	←	Application Start

Data Clustering	→	Model Building	→	Cloud Setup	→	Pushing App to Cloud

End

3. Architecture Description

3.1. Data Description

UCI dataset is the biggest publicly available dataset. The information each credit card is available in comma separated files (CSV). This dataset contains 30000 records with 25 features.

3.2. Data Transformation

In the Transformation Process, we will not require Transformation Process because we have already data which is in file CSV Format.

3.3. Data Insertion into Database

a. Database Creation and connection - Create a database with name passed. If the database is already created, open the connection to the database.

b. Table creation in the database.

c. Insertion of files in the table

3.4. Export Data from Database

Data Export from Database - The data in a stored database is exported as a CSV file to be used for Data Pre-processing and Model Training.

3.5. Data Pre-processing

Data Pre-processing steps we could use are Null value handling, Outliers, Exploratory Data Analysis. Handling columns with standard deviation zero or below a threshold, etc.

3.7. Model Building

After, we will find the best model. For each algorithm will be passed with the best parameters derived from Grid-Search. We will calculate the AUC scores for models and select the model with the best score.

3.8. Data from User

Here we will collect data from user such as user Limit_Bal, Sex, Education, Marriage, Age, etc.

3.9. Data Validation

Here Data Validation will be done, given by the user

3.10. User Data Inserting into Database

Collecting the data from the user and storing it into the database. The database can be either MySQL or Mongo DB.

3.11. Data Training

The model created during training will be loaded, and models for the user data will be predicted.

3.12. Model Call for Specific Record

Based on the cluster number, the respective model will be loaded and will be used to predict data.

3.13. Recipe Recommendation & Saving Output in Database

After calling model Output will be recommended, this output will be saved in Database and it will be used to show the same Output if other users provide the same data.

3.14. Deployment

We will be deploying the model to AWS.

This is a workflow diagram for the Credit Card Default Prediction.