Low Level Design

Consignment Shipping Pricing Prediction

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Document Control

Change Record:

Version	Date	Author	Comments
0.1	06-Sept-2023	Ashwini Kakde	Introduction & Architecture defined
0.2	06-Sept-2023	Ashwini Kakde	Architecture & Architecture Description appended and updated
0.3	06-Sept-2023	Ashwini Kakde	Unit Test Cases defined and appended

Contents

1. Introduction

1.1. What is Low-Level design document?

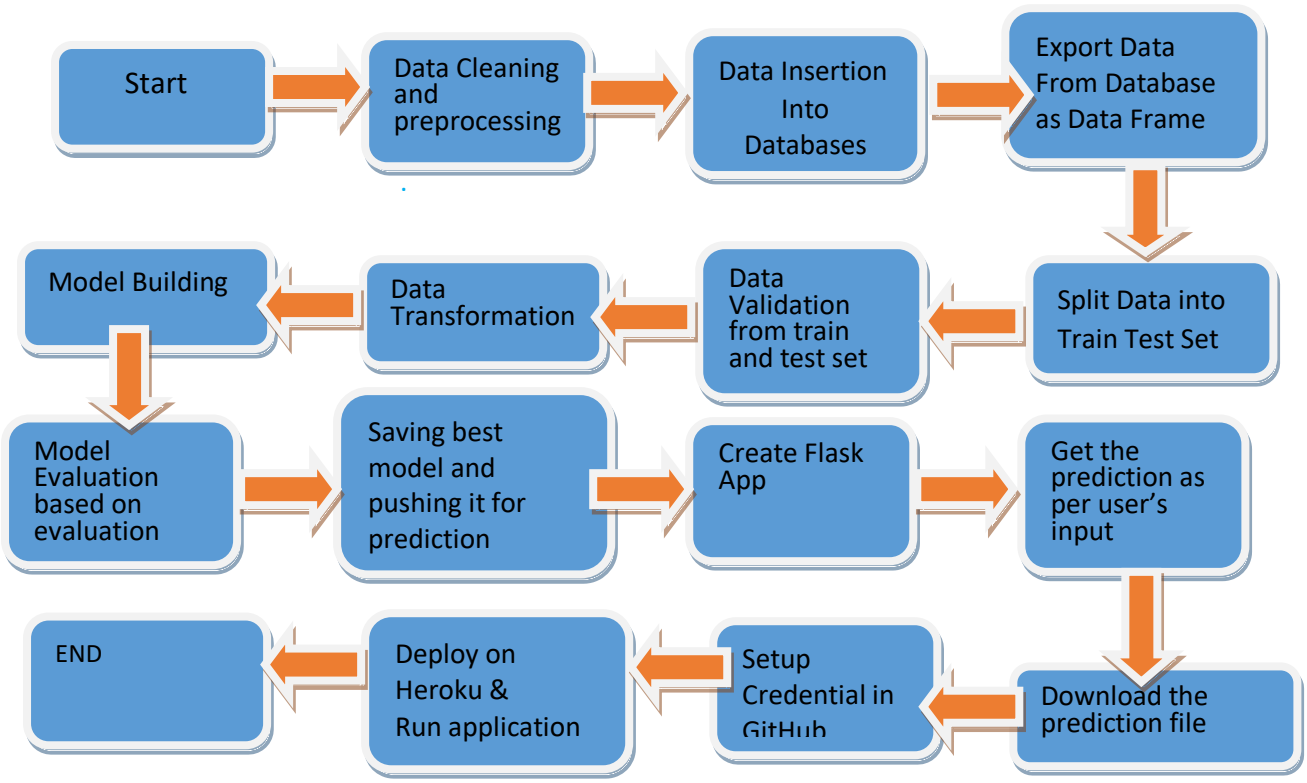
The goal of LLD or a low-level design document (LLDD) is to give the internal logical design of the actual program code for Food Recommendation System. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can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

1.2. Scope

Low-level design (LLD) is a component-level design process that follows a step-by-

Step 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



3. Architecture Description

3.1. Data Description

The market for logistics analytics is expected to develop at a CAGR of 17.3 percent from 2019 to 2024, more than doubling in size. This data demonstrates how logistics organizations are understanding the advantages of being able to predict what will happen in the future with a decent degree of certainty. Logistics leaders may use this data to address supply chain difficulties, cut costs, and enhance service levels all at the same time

3.2. Data Preprocessing

In this process our CSV file contain some columns which are not in proper naming conventions and not in proper datatypes .they have to be processed first before loading into database.

3.3. Data Insertion into Database

For this purpose I have used mongo dB as database which will load csv into mongo dB

3.4. Export Data from Database

Data Export from Database - The data in a stored database is exported as a data frame 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, Checking any duplicates records dropping and irrelevant features

3.6. Model Building

After data validation and transforming categorical features into proper format and scaling numerical features model is trained and checking which model is performing best.For this approach I used XGBRegressor since it is a regression model giving best r2 and adjusted r2 score.

3.7. Data Validation

Here Data Validation will be done,

3.8. 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.

3.9. Shipping Price Prediction & Saving Output

Here shipping price Is predicted as per model and output is saved as prediction CSV

3.10. Deployment

We will be deploying the model to Heroku.