Low Level Design

Thyroid Disease Prediction System

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Document Control

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0.1	11-04-2024	Shubham Rawat	Introduction & Architecture defined, Architecture & Architecture Description appended and updated, Unit Test Cases defined and appended

Reviews:

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Contents

1. Introduction

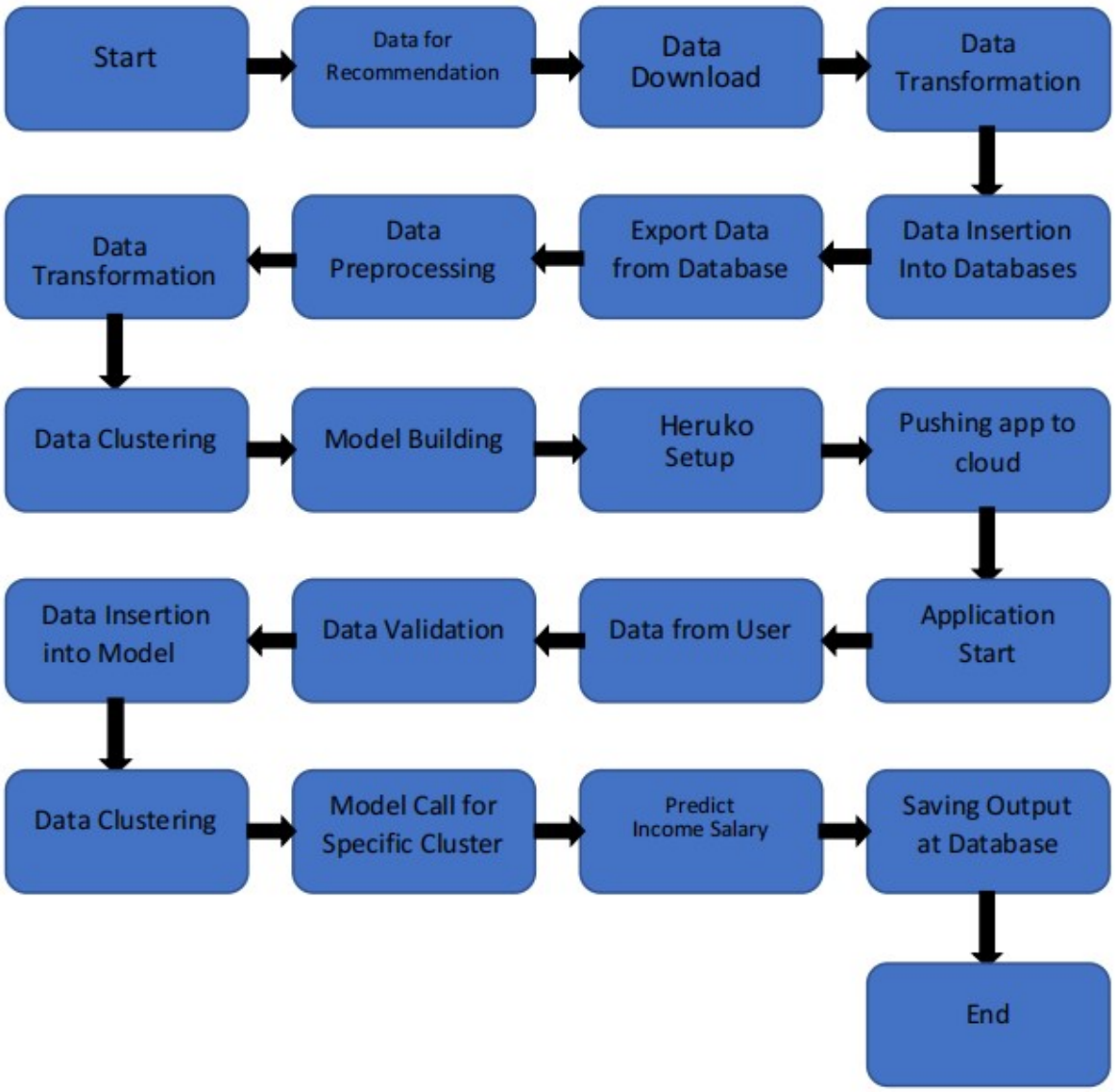
1.1. What is Low-Level design document?

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

Thyroid Disease Prediction help in predict the Thyroid with the accuracy of 98.2%. It reduces the chance of having thyroid by 60% as it predicts it, and people can start medications.

3.2. Data Ingestion

Data is store in Git Hub so we receive git-hub link.
Data is Downloaded into local system and Processed further

3.3. Data Transformation

In the Transformation Process, we will convert our original data set which is in JSON format to CSV Format. And will merge it with the Scrapped data set.

3.4. Data Preprocessing

Data Pre-processing steps we could use are Null value handling, filling those null value with suitable values, Data Encoding and Data Standard Scales after scaling the data then we save that Prepocessing model as a pickle for further use.

Data leakage is prevented by applying fit_transform and saving data into NP.nyz format.

3.5. Export Data from Database

Data Export from Database .

3.6. Model Building

Discover the cutting-edge of medical technology with our latest YouTube video, where we delve into the creation of a Thyroid Disease prediction model using the powerful XGBoost algorithm. Boasting an impressive 98.2% accuracy rate, this model represents a significant advancement in the field of healthcare analytics. The video will take you behind the scenes of the model's development process, including the seamless integration of a CI/CD pipeline to deploy a user-friendly website hosted on an AWS EC2 instance.

3.7. Data from User

The data points you've listed are commonly used in medical datasets related to thyroid function. Age and sex are basic demographic variables, while the others are specific to thyroid health conditions and treatments. For instance, 'on_thyroxine' indicates whether a patient is taking this hormone replacement therapy, and 'I131_treatment' refers to a

type of radiotherapy used for certain thyroid conditions. Collectively, these data can help healthcare professionals assess and manage thyroid-related health issues effectively.

3.8.Data Validation

Given data is validated on the bases of there name data type schema Column name and shape.
These Information is already decided with negotiation with Clients. According to agreement and conditions we Validate the data .

3.8. Recipe Recommendation & Saving Output in Database

After calling model Recipe/Output will be recommended, this output will be display

3.9. Deployment

We will be deploying the model to AWS in EC2 instance