LOW LEVEL DESIGN (LLD)

Product Backorder Prediction

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Contents

Abstract

Backorders are unavoidable, but by anticipating which things will be backordered planning can be streamlined at several levels, preventing unexpected strain on production, logistics, and transportation. ERP systems generate a lot of data (mainly structured) and also contain a lot of historical data; if this data can be properly utilized, a predictive model to forecast backorders and plan accordingly can be constructed. Based on past data from investors, supply chain, and sales, classify the products as going into backorder (Yes or No).

The Goal here is to build a solution that should be able to predict the backorder sales for a particular product according to the provided dataset.

1. Introduction

1.1. Why this Low-Level Design (LLD)?

The purpose of this Low-level design document (LLD) is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The LLD will:

1) **Present all the design aspects and define them in detail.**
2) **Describe the user interface being implemented.**
3) **Includes design features and architecture of the project.**
4) **List & describe the non-functional attributes like:**
    - **Reliability**
    - **Maintainability**
    - **Portability**
    - **Reusability**
    - **Application compatibility**
    - **Serviceability**

1.2. Scope

Low-level design (LLD) presents the structure of the system, such as the database architecture, application architecture (layers), application flow (navigation), and technology architecture. The Low-Level documentation uses non-technical to mildly-technical terms which should be understandable to the administrator of the system.

1.3. Constraints

The System must be user-friendly, as automated as possible, and the user should not be required to know any other work.

2. Technical Specifications

2.1 Logging

The system should log every event so that the user will know what process is running

Internally:

Initial Step-by-Step Description

1. **The system identifies at what step logging is required.**
2. **The system should be able to log each & every system flow.**
3. **Developers can choose a logging method. You can choose database logging or file logging as well.**
4. **System should not hang even after so many logins. Logging just because we can debug issues, so logging is mandatory.**

2.2 Database

System needs to store each and every record in the database, dataset as well as logging. And it has to send data to the user on request. Here we have used MongoDB as a Database.

3. Deployment

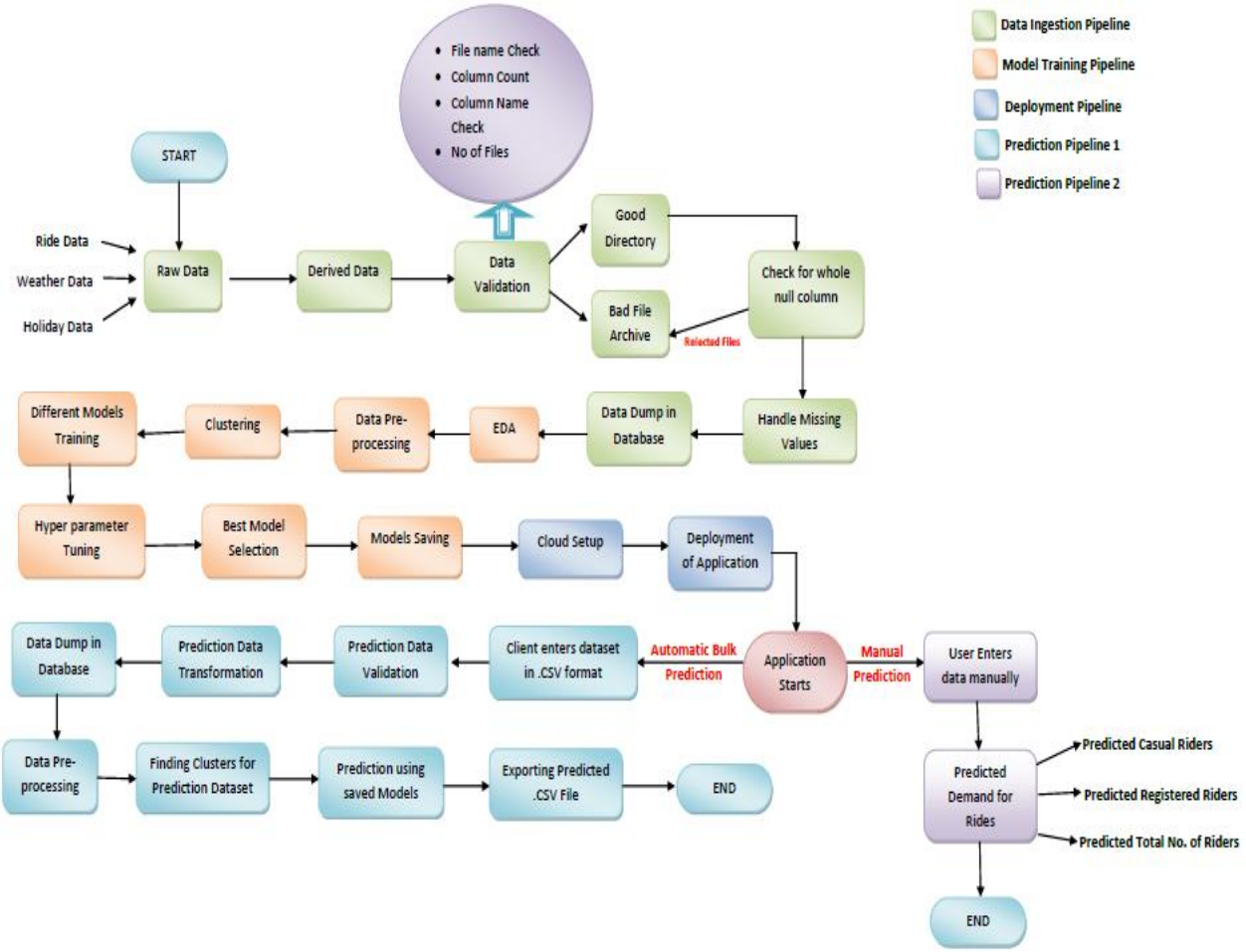
4. Technology Stack

Front End	HTML/CSS
Backend	Python/Flask
Database	MongoDB
Deployment	Heroku
Version Control	Github

5. Proposed Solution

Here the system has been created which predicts the backorder sales for a particular product according to the provided dataset.

6. Architecture



7. Error Handling

Should errors be encountered, an explanation will be displayed as to what went wrong? An error will be defined as anything that falls outside the normal and intended usage.

8. KPI'S (Key Performing Indicators)

Organization can predict which particular product is can go for backorder.

9. Conclusion

Backorders are unavoidable, but by anticipating which things will be backordered planning can be streamlined at several levels, preventing unexpected strain on production, logistics, and transportation. ERP systems generate a lot of data (mainly structured) and also contain a lot of historical data; if this data can be properly utilized, a predictive model to forecast backorders and plan accordingly can be constructed. Based on past data from investors, supply chain, and sales, classify the products as going into backorder (Yes or No).