High Level Definition (HLD)

BMSS (Big Mart Store Sales)

Revision Number: 1.0

Last date of revision: 8/08/2022

Document Version Control

Date Issued	Version	Description	Author
8/08/2022	1	Initial HLD — V1.0	Bhavya Shah

Contents

Abstract

Nowadays, shopping malls and Big Marts keep track of individual item sales data in order to forecast future client demand and adjust inventory management. In a data warehouse, these data stores hold a significant amount of consumer information and particular item details. By mining the data store from the data warehouse, more anomalies and common patterns can be discovered.

1 Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document 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 HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like: o Security
  - o Reliability
  - o Maintainability
  - o Portability
  - o Reusability
  - o Application compatibility
  - o Resource utilization
  - o Serviceability

1.2 Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

1.3 Definitions

Term	*Description*
BMSS	Big Mart Store Sales
	to predict the sales of the different stores of Big Mart

+

2 General Description

2.1 Product Perspective

The Big Mart Store Sales system is a Machine Learning model which will help us to predict the sales of the different stores of Big Mart.

Problem statement

- Nowadays, shopping malls and Big Marts keep track of individual item sales data in order to forecast future client demand and adjust inventory management. In a data warehouse, these data stores hold a significant amount of consumer information and particular item details. By mining the data store from the data warehouse, more anomalies and common patterns can be discovered.

PROPOSED SOLUTION

Through This we will get to know which product people consume more and keep the inventory as the demand.

2.2 Tools used

Python programming language and frameworks such as NumPy, Pandas, Scikit-learn, Evidently , Flask, VS Code, Matplotlib Gunicorn and Github are used to build the whole model.

2.3 Constraints

The Big Mart Store Sales system must be user friendly, as automated as possible and users should not be required to know any of the workings.

2.4 Assumptions

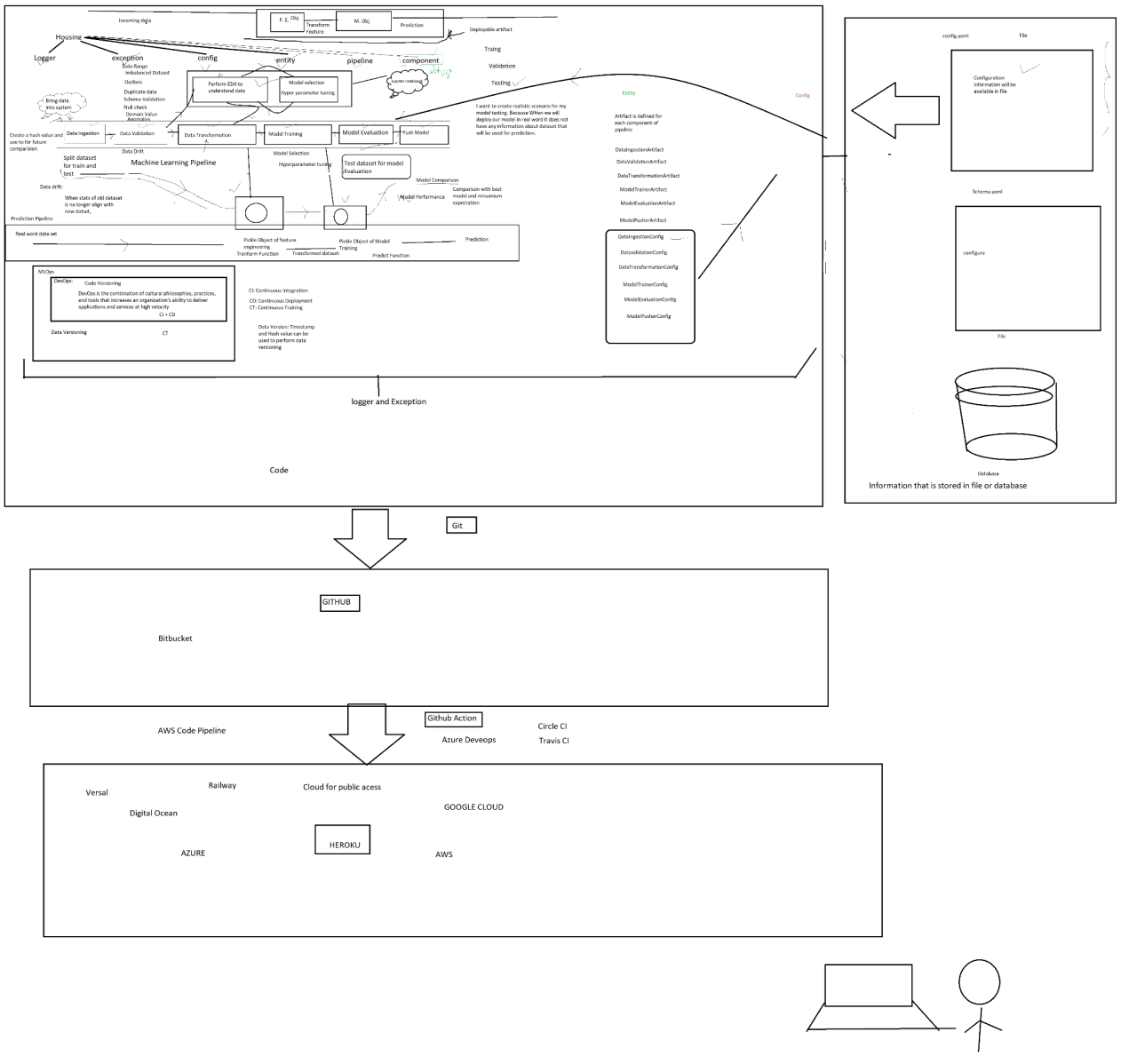
The main objective of the project is to predict the sales of the different stores of Big Mart according to the provided dataset.

3 Design Details

3.1 Process Flow

For identifying the different types of anomalies, we will use a machine learning base model. Below is the process flow diagram as shown below.

3.1.1 Deployment Process



3.2 Event log

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 required
2. The System should be able to log each and every system flow.
3. Developer can choose logging method. You can choose database logging/ File logging as well.
4. System should not hang even after using so many loggings. Logging just because we can easily debug issues so logging is mandatory to do.

3.3 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.

4 Performance

Big Mart Store Sales is used to detect the keep track of individual item sales data in in order to forecast future client demand and adjust inventory management.

4.1 Reusability

The code written and the components used should have the ability to be reused with no problems.

4.2 Application Compatibility

The different components for this project will be using Python as an interface between them. Each component will have its own task to perform, and it is the job of the Python to ensure proper transfer of information.

4.3 Resource Utilization

When any task is performed, it will likely use all the processing power available until that function is finished.

4.4 Deployment

4.5 KPIs (Key Performance Indicators)

1. Key indicators displaying a summary of the anomaly detection store sales
2. We can train the dataset.
3. Create the artifact files.
4. Store all the logs.

5 Conclusion

Big Marts keep track of individual item sales data in order to forecast future client demand and adjust inventory management and be able to predict the sales of the different stores of Big Mart according to the provided dataset.

6 References

1. Google.com