High Level Design (HLD)

Amazon Sales Analysis

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Document Version Control

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Abstract

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce cost and to increase profits. Sales management today is the most important function in a commercial and business enterprise. So we are performing the sales analysis for amazon food sales.

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 before 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:

  -Security
  -Reliability
  -Maintainability
  -Portability
  -Reusability
  -Application compatibility
  -Resource utilization
  -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.

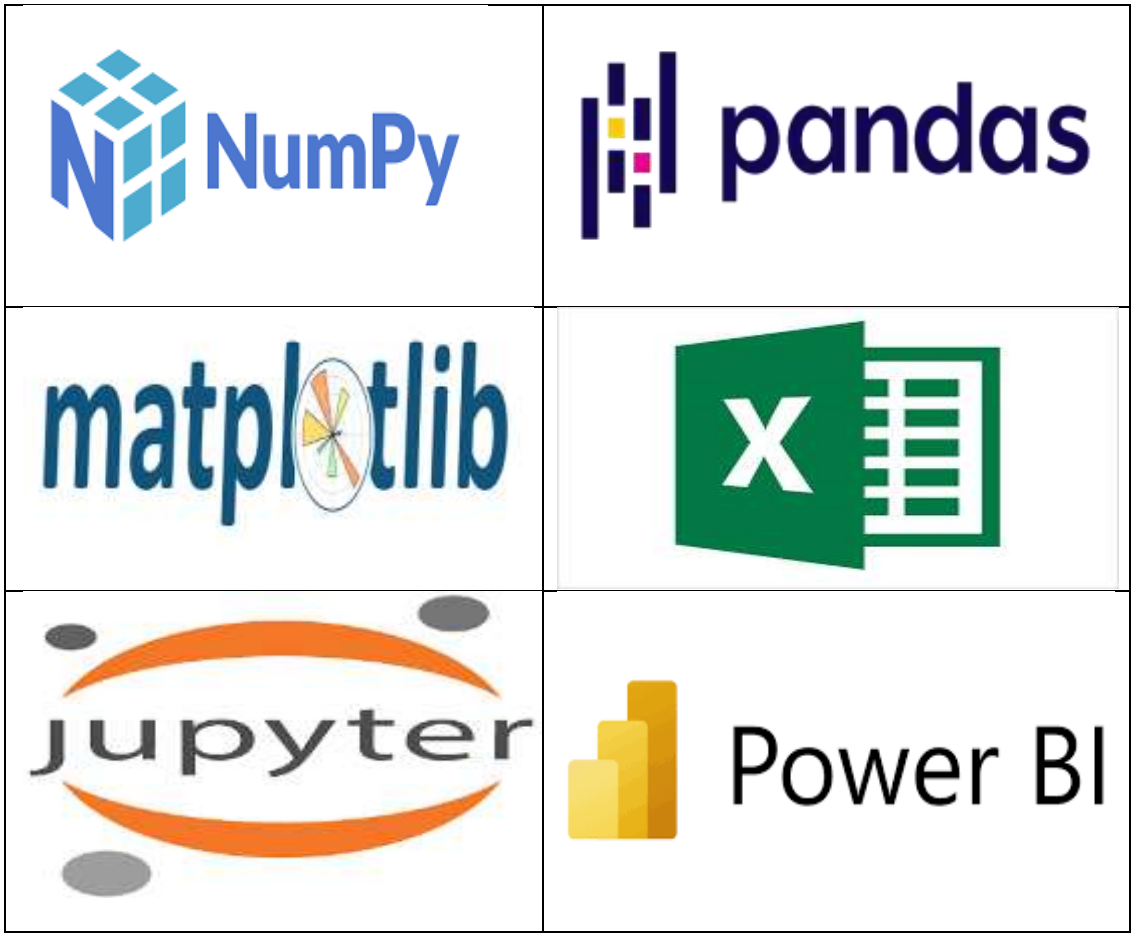
2 General Description

2.1 Product Perspective & Problem Statement

The goal of this project is to analyse the sales and find the meaning insights .Its ultimate goal is to determine whether we are seeing the positive trend or not

2.2 Tools used

Business Intelligence tools and libraries works such as NumPy, Pandas, Matplotlib, MS-Excel, Power Bi, Jupyter Notebook and Python Programming Language are used to build the whole framework.



• Jupyter Notebook is used as IDE.

• Python is the Programming Language used.

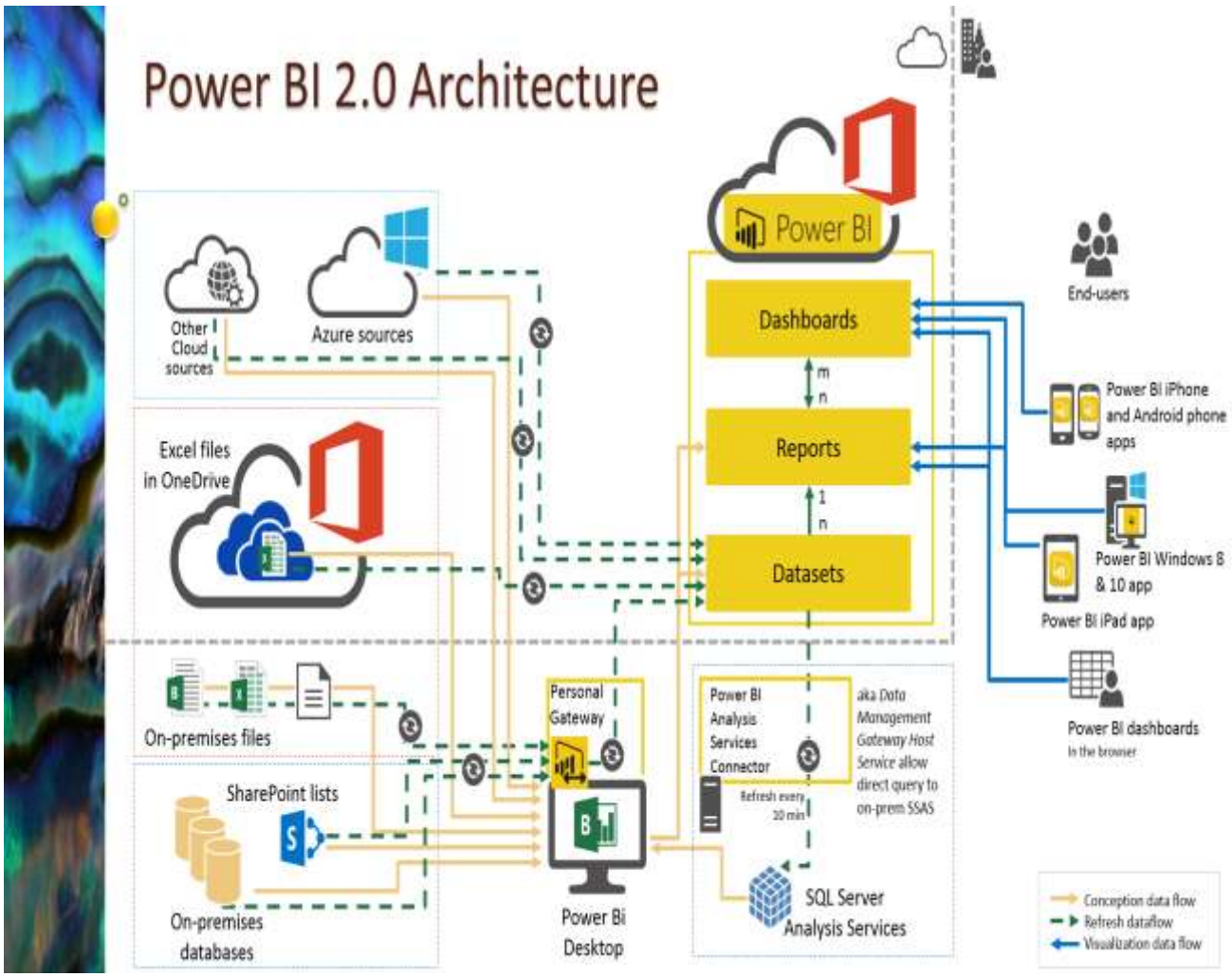
• EDA is done using Numpy & Pandas.

• Visualizations were done using Matplotlib.

• Power Bi is used for dashboard creation.

3 Design Details

3.1 Functional Architecture



How does Power Bi Work?

- The architecture of Power Bi is designed to connect different data sources securely.
- Data Server is the first layer in the architecture. It helps Power Bi to connect data in various heterogeneous environments.
- Data connector is the second layer. It helps to connect to various databases using its ODBC connector.
- Power Bi can connect the real time live data by connecting the database directly. It can also extract a local copy of data through its in-memory data store for faster processing.
- The application server is used for authentications and authorizations.
- Data Server is a centralized data management system used in the architecture.
- A gateway is used to distribute the processes into different components.
- The fourth layer of the architecture are the clients such as Power Bi Desktop, web and Mobile.

3.2 Optimization

1. Your data strategy drives performance

- Minimize the number of fields
- Minimize the number of records
- Optimize extracts to speed up future queries by materializing calculations, removing columns and the use of accelerated views

2. Reduce the marks (data points) in your view

- Practice guided analytics. There's no need to fit everything you plan to show in a single view. Compile related views and connect them with action filters to travel from overview to highly-granular views at the speed of thought.
- Remove unneeded dimensions from the detail shelf.
- Explore. Try displaying your data in different types of views.

3. Limit your filters by number and type

- Reduce the number of filters in use. Excessive filters on a view will create a more complex query, which takes longer to return results. Double-check your filters and remove any that aren't necessary.

- Use an include filter. Exclude filters load the entire domain of a dimension while including filters do not. An include filter runs much faster than an exclude filter, especially for dimensions with many members.

- Use a continuous date filter. Continuous date filters (relative and range-ofdate filters) can take advantage of the indexing properties in your database and are faster than discrete data filters.

- Use Boolean or numeric filters. Computers process integers and Booleans (t/f) much faster than strings.

Performance

Sales analysis determines the historic all the previous data and it should be as accurate as possible. So that it will not mislead to the future investor.

Security

Since the Sales analysis consists of years data and customer information , the information should be secured.

Reusability

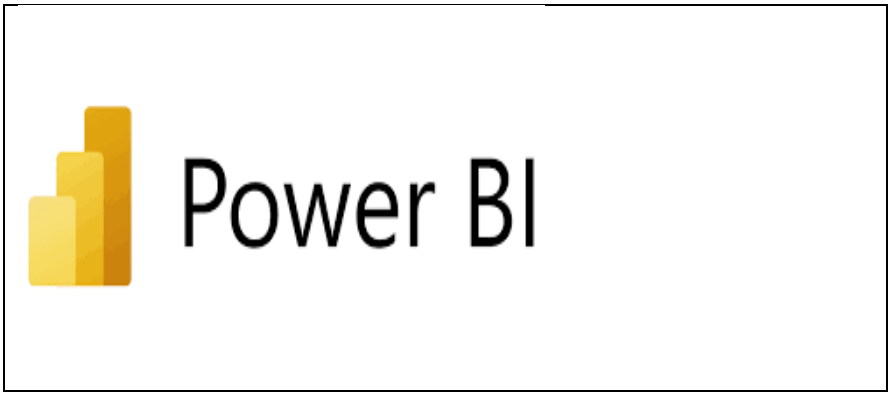
The code written and the components used should have the ability to be reused with no problems.

Resource utilization

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

4 KPI

Dashboards will be implemented to display and indicate certain KPIs and relevant indicators for the Investment.



As and when the system starts to capture the historical/periodic data for a Year, the dashboards will be included to display charts over time with progress on various indicators or factors

4.1 KPIs (Key Performance Indicators)

Key indicators displaying a summary of the Investment Analysis and its relationship with different metrics

1. Sector wise investment, Total no of sectors
2. Which sector has maximum or minimum investment
   Same as Year wise, Total no of Years.