High Level Design

“Amazon Data Sales Analysis”

Revision No.: 1

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Abstract

The High-Level Design (HLD) document serves as a roadmap for the development and implementation of [Project Name], outlining the architectural framework, design considerations, and key features of the system. This document aims to provide stakeholders, developers, and other project team members with a clear understanding of the project scope, requirements, and technical approach. The HLD encompasses various aspects, including the product perspective, problem statement, tools used, functional architecture, optimization strategies, and deployment considerations. By articulating these elements, the HLD lays the foundation for the successful execution of Amazon Sales Data Analysis, ensuring alignment with project goals and stakeholder expectations.

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Chapter 1 Introduction

The detailed introduction chapter of the High-Level Design (HLD) document provides comprehensive insights into the project's background, objectives, and scope. Here's a breakdown of the sections within the introduction:

1.1 Why this High-Level Design Document?

This section elucidates the rationale behind the creation of the HLD document. It underscores the significance of having a well-defined high-level design to guide the development process effectively. It may discuss the need for clear documentation to ensure alignment among stakeholders, facilitate communication, and serve as a reference point throughout the project lifecycle.

1.2 Scope:

In this segment, the scope of the project is delineated. It specifies the boundaries of the project, outlining what functionalities and features are included within its purview. The scope statement helps to manage stakeholders' expectations by defining what will be delivered as part of the project and what will not. It may also touch upon any constraints or limitations that may impact the project scope.

The introduction chapter serves as the foundation for the HLD document, providing stakeholders with a comprehensive understanding of the project's objectives, rationale, and boundaries. It sets the stage for the subsequent sections that delve deeper into the design and implementation aspects of the project.

Chapter 2 General Description

This chapter provides an overarching view of the project, focusing on its context, objectives, and the tools utilized in its development.

2.1 Product Perspective & Problem Statement:

This section elucidates the context within which the project operates, outlining its relevance and significance. It discusses the product's perspective, including its role within the broader ecosystem or industry. Additionally, it presents the problem statement, highlighting the specific challenges or needs that the project seeks to address. By providing this context, stakeholders gain a clear understanding of the project's purpose and its potential impact.

2.2 Tools Used:

Here, the tools, technologies, and frameworks employed in the project are detailed. This includes software platforms, programming languages, development environments, and any other relevant tools utilized throughout the project lifecycle. By listing and describing these tools, stakeholders gain insight into the technical environment of the project and the resources required for its development.

The General Description chapter offers a high-level overview of the project, setting the stage for the subsequent sections that delve into specific design details and implementation strategies. It gives stakeholders essential context and insights into the project's objectives, challenges, and technical requirements

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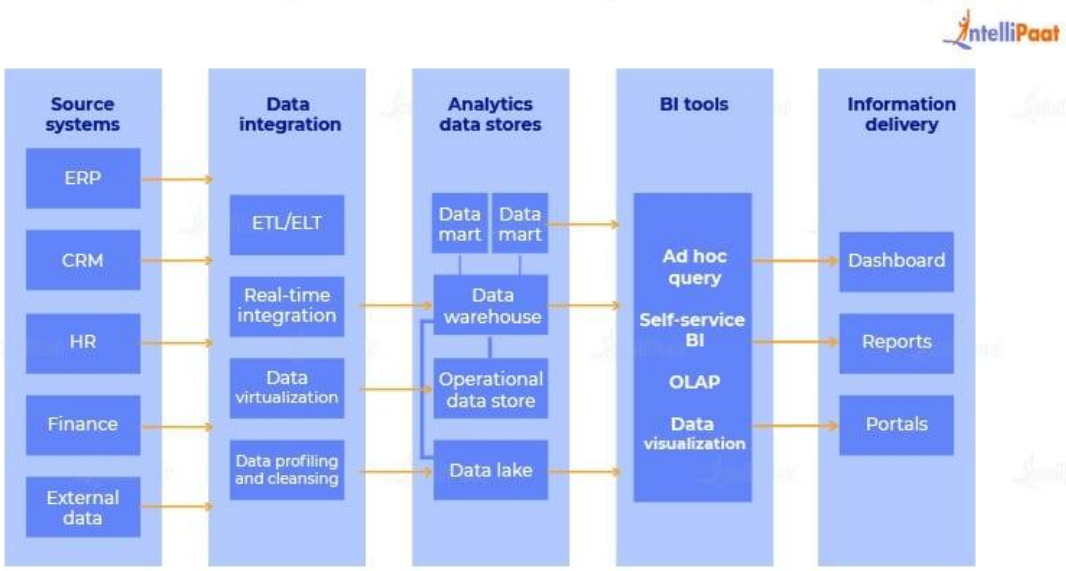
Chapter 3 Design Detail

3.1 Functional Architecture



3.2 Optimization

The data strategy outlined emphasizes several key principles to drive performance and optimize queries within a data visualization tool like Tableau:

1. Minimize Data Volume:

- - Reduce the number of fields and records to streamline data processing.
- - Optimize extracts by materializing calculations and removing unnecessary columns.
- - Limit the number of data points in views to enhance performance.

2. Guided Analytics:

- - Practice guided analytics by organizing related views and connecting them with action filters for seamless navigation.
- - Remove unneeded dimensions from detailed views to simplify queries.

3. Filter Optimization:

- - Limit the number and type of filters used to avoid complex queries.
- - Utilize include filters instead of exclude filters for faster performance.
- - Prefer continuous date filters and Boolean or numeric filters over strings for quicker processing.
- - Leverage parameters and action filters to reduce query load and enhance compatibility across data sources.

4. Calculation Optimization:

- - Perform calculations directly in the database whenever possible.
- - Reduce the number of nested calculations and the granularity of LOD or table calculations.
- - Prefer MIN or MAX over AVG calculations, as they require less processing.

5. Optimization Techniques for Tableau:

- - Create groups with calculations instead of using Tableau's group function.
- - Utilize Booleans or numeric calculations over string calculations for faster processing.

Chapter 4 KPIs

KPIs used for the BI report

1. **Executive Dashboard**:
    - **KPIs**:
        - **Revenue**: Tracking overall sales income.
        - **Profitability**: Assessing the profitability of different product segments.
        - **Order Categories**: Analyzing sales distribution across product categories.
2. **Product Analysis Dashboard for Staples**:
    - **KPIs**:
        - **Monthly Orders**: Monitoring order volume.
        - **Revenue**: Evaluating total sales.
        - **Profit Targets**: Comparing actual profit against targets.
3. **Customer Analysis Dashboard**:
    - **KPIs**:
        - **Total Customers**: Understanding customer base size.
        - **Revenue Per Customer**: Calculating average revenue generated per customer.
        - **Customer Behavior**: Analyzing purchase patterns and preferences.
4. **AI Dashboard with U.S. Map**:
    - **KPIs**:
        - **Geographical Distribution**: Visualizing data points across states.
        - **Interactive Filtering**: Allowing users to explore data by state.

These KPIs help stakeholders gain insights into various aspects of business performance, enabling data-driven decision-making.

Chapter 5 Deployment

The section on "Deployment" in the document likely covers the process of implementing and rolling out the project or solution to its intended users or environment. It may include details such as:

- 1. Deployment Plan: Outlines the steps and timeline for deploying the project, including any pre-deployment preparations, testing phases, and the actual deployment process.
- 2. Infrastructure Requirements: Identifying the hardware, software, and other resources needed to support the deployed solution.
- 3. Deployment Procedures: Describing the procedures and protocols for installing, configuring, and deploying the project components or software.
- 4. User Training: Addressing how users will be trained to use the deployed solution effectively, including any training materials or sessions provided.
- 5. Support and Maintenance: Outlining plans for ongoing support, maintenance, and monitoring of the deployed solution to ensure its continued operation and performance.

Overall, the "Deployment" section serves to ensure a smooth and successful transition from development to production, maximizing the value and impact of the project for its stakeholders.