

Low Level Design (LLD)

Food Sales Analysis

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1. Introduction

1.1 What is Low Level Design Document?

The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Food Sales Analysis dashboard. LLDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 What is Scope?

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The 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.

1.3 Project Introduction

E-Commerce industries has been one of the major growing sectors of the millennial.

Ranging across variety of products from electronics, accessories, fashion to food, e-commerce has become the most convenient platform for shopping all over the world.

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.

Analyzing the sales history of different products is crucial for the sector to understand the consumer interests and retain their presence and grow the business

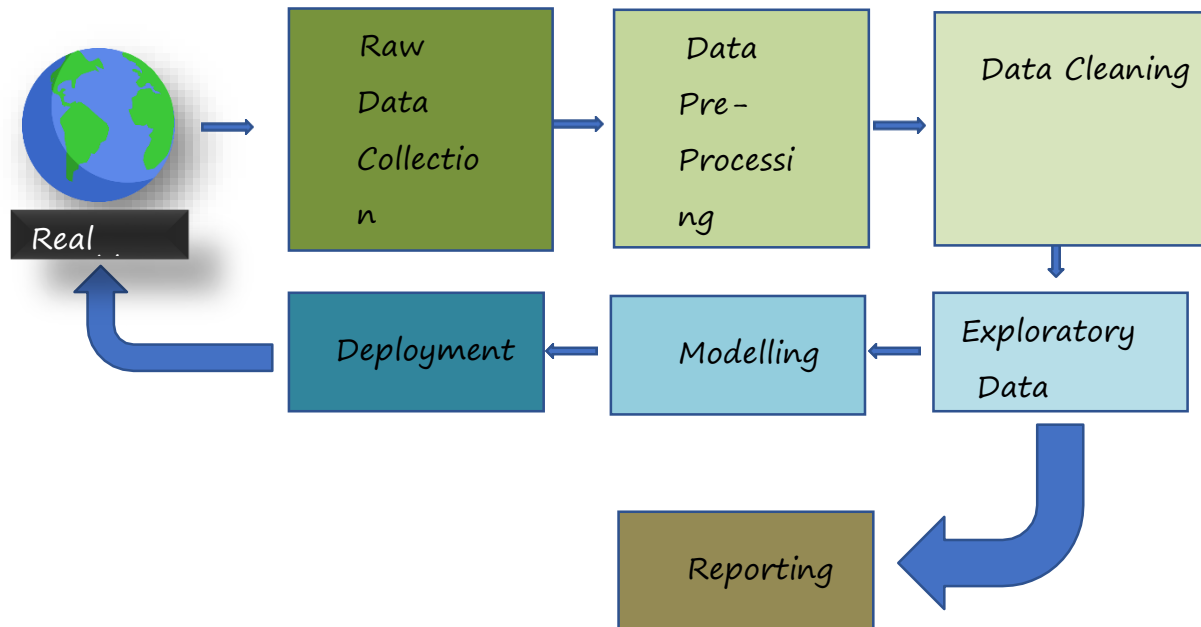
2. Problem Statement

The objective for this project is to design a sales dashboard to analyze the sales based on various product categories. The company wants to add user control for the product category, so users can select a category and can see the trend month-wise and product-wise accordingly. The Analytic team also wants to create a histogram to analyze number of shipping days.

3. Data set Information

- **CustKey:** Unique ID given to all the customers
- **Invoice Date:** Date on which the Invoice has been generated
- **Invoice number:** The unique number generated against each bill
- **Item Class:** The category number assigned to the items.
- **Item:** Names of all the products to be analyzed.
- **Line Number:**
- **Order Number :** Number generated against each item ordered
- **Promised Delivery Date:** Date on which the order is to be delivered
- **Sales Price:** Selling price of each item
- **Sales Cost amount:** Total Cost Price for the quantity of items sold.
- **Sales Quantity:** No of the particular item sold
- **Sales Amount :** Total sales amount generated= Sales Price * Sales Quantity
- **Sales amount based on List Price:** Total Sales amount on the basis of Manufacturer suggested Selling Price
- **Sales Margin Amount:** Profit made on each item = Sales Amount- Sales Cost Amount
- **Discount Amount:** Discount applied on the Selling price of items= Sales Amount based on List Price- Sales Amount
- **Sales Rep:** Unique ID for the sales representative who sold the items
- **U/M:** Unit of measure of the items sold

4. Architecture



4.1 Architecture Description

1. Raw Data Collection

The Data set was taken from iNeuron's Provided Project Description Document.

2. Data Pre-Processing

Before building any model, it is crucial to perform data pre-processing to feed the correct data to the model to learn and predict. Model performance depends on the quality of data fed to the model to train.

This Process includes-

- a) Handling Null/Missing Values
- b) Outliers Detection and Removal

3. Data Cleaning

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a data set.

- a) Remove duplicate or irrelevant observations
- b) Filter unwanted outliers
- c) Renaming required attributes

4. Exploratory Data Analysis (EDA)

Exploratory Data Analysis refers to the critical process of performing initial investigations on data to discover patterns, spot anomalies, test hypothesis and to check assumptions with the help of summary statistics and graphical representations.

5. Reporting

Reporting is a most important and underrated skill of a data analytic field. Because being a Data Analyst you should be good in easy and self-explanatory report because your model will be used by many stakeholders who are not from technical background.

- a) High Level Design Document (HLD)
- b) Low Level Design Document (LLD)
- c) Architecture
- d) Wireframe
- e) Detailed Project Report
- f) Power Point Presentation

6. Modelling

Data Modelling is the process of analyzing the data objects and their relationship to the other objects. It is used to analyze the data requirements that are required for the business processes. The data models are created for the data to be stored in a database. The Data Model's main focus is on what data is needed and how we have to organize data rather than what operations we have to perform.

7. Deployment

We created a Power BI Dashboard highlighting the Sales trend, Product Analysis and Customer behavior.

