

| Business Template  **BIG STORE SALE DATA** |
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# Business Description

## Business background

In today’s world, businesses rely on data to make important decisions. Whether it's a retailer, manufacturer, or service provider, companies use data to understand their customers, products, and operations. This helps them stay competitive and grow.

For example, a big store might sell products both online and in physical stores. They collect a lot of information—sales data, customer details, stock levels, and supplier information. If this data isn’t managed well, it becomes difficult to understand what’s going on. That’s why many companies use tools like data warehouses to bring all their data together in one place for easier analysis.

## Problems because of poor data management

When businesses don’t manage their data properly, they face a lot of problems:

* Disorganized Data:

Data is stored in different places (e.g., separate systems for online and offline sales), making it hard to see the full picture.

* Bad Decisions:

If data is incomplete or incorrect, reports and decisions based on it will also be wrong. For example, it might be hard to figure out which products sell best or which customers to focus on.

* Wasted Time and Money:

When data isn’t organized, employees spend too much time trying to find and combine information manually. This costs the company money and slows down decision-making.

* Missed Opportunities:

Without quick and accurate data, businesses can’t react to trends or customer needs in time. They may lose customers to competitors.

* Stock Problems:

Poor inventory management can lead to overstocking (wasting money) or stockouts (angry customers), both of which hurt the business.

In short, bad data management leads to mistakes, wasted resources, and lost business opportunities.

## Benefits from implementing a Data Warehouse

A data warehouse solves many of these problems by organizing all the data in one place. Here’s how it helps:

* Everything in One Place:

A data warehouse combines data from different sources, like online and offline sales, so businesses can access everything in one system.

* Better Decisions:

Clean and well-organized data makes it easier to see trends, such as which products sell the most or which customers spend the most.

* Time and Cost Savings:

With automated data collection and reporting, employees can focus on solving problems instead of wasting time on manual tasks.

* Accurate Reports to track KPI:

A data warehouse ensures that data is consistent and correct, so businesses can trust their reports and analysis.

* Spot Trends and Plan Ahead:

Businesses can analyze patterns, like seasonal sales or customer behavior, and use this information to plan for the future.

* Stay Ahead of Competitors:

With quick access to insights, businesses can adapt faster, improve customer service, and make smarter choices to beat their competition.

In summary, a data warehouse helps businesses get the most out of their data. It saves time, reduces mistakes, and **gives companies the tools to make better decisions and grow faster**.

## DATASETS DESCRIPTION

The online database primarily captures data related to e-commerce transactions, focusing on customer and product interactions within an online store environment.

**Transactions Information**

transaction\_id: Unique identifier for each transaction.

transaction\_date: Date and time of the transaction.

store\_id: Identifier for the online store.

store: Name of the online store.

store\_location: Generalized location associated with the online store

**Products Information**

product\_id: Unique identifier for each product.

product\_name: Name of the product.

category: Category to which the product belongs.

quantity\_sold: Number of units sold in the transaction.

unit\_price: Price per unit at the time of sale.

reorder\_point: Minimum stock level before reordering.

reorder\_quantity: Quantity to reorder when stock is low.

**Customer Information**

customer\_id: Unique identifier for each customer.

customer\_loyalty\_level: Loyalty program level for the customer

**Promotions**

promotion\_applied: Whether a promotion was applied to the transaction.

**Suppliers**

supplier\_id: Unique identifier for the supplier providing the product.

Offline Database

transaction\_id: Unique identifier for each transaction.

transaction\_date: Date and time of the transaction.

store\_id: Identifier for the store where the transaction occurred.

store\_location: Physical location of the store.

**Products Information**

product\_id: Unique identifier for each product.

product\_name: Name of the product.

category: Category to which the product belongs.

quantity\_sold: Number of units sold in the transaction.

unit\_price: Price per unit at the time of sale.

**Customer Information**

customer\_id: Unique identifier for each customer.

customer\_age: Age of the customer.

customer\_gender: Gender of the customer.

customer\_income: Income level of the customer.

customer\_loyalty\_level: Loyalty program level for the customer

**Suppliers**

supplier\_id: Unique identifier for the supplier providing the product.

supplier\_lead\_time: Time taken by the supplier to deliver products.

**Additional Features**

promotion\_applied: Whether a promotion was applied to the transaction.

promotion\_type: Type of promotion used (e.g., Discount, Free Item).

weather\_conditions: Weather conditions on the transaction date.

holiday\_indicator: Whether the transaction date was a holiday.

weekday: Day of the week for the transaction date.

The online database focuses on capturing data from e-commerce transactions, while the offline database deals with sales data from physical stores. These two databases are designed to manage different types of operations but share some similarities and key differences.

The online database contains data relevant to digital transactions, such as customer activity, product sales, and promotions used in online stores. It often has fewer details about customers and operational factors like inventory or weather but is focused on tracking customer loyalty, product categories, and sales performance in a digital environment.

In contrast, the offline database provides more comprehensive information about in-store transactions, including customer demographics (e.g., age, gender, income), inventory levels, supplier performance, and external factors such as weather or holidays. This allows businesses to analyze the impact of these factors on sales and plan inventory or promotions accordingly.

## GRAIN / DIM / FACT

# Business Layer 3NF

# Business Layer Dimensional Model

# Logical Scheme

# Data Flow

# Fact Table Partitioning Strategy