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| Business Template  **craft beer bar sALES** |
| **Logo / Image** |

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# Business Description

## Business background

Beer is one of the most popular beverages in the world, and the craft beer industry has grown significantly in recent years. Craft beer bars, in particular, offer unique and high-quality beer options that appeal to a diverse customer base. The craft beer industry is highly competitive, with many bars vying for customer attention. Understanding customer preferences, sales trends, and inventory dynamics is key to success. This can be achieved by systematically collecting and analyzing sales and inventory data, allowing you to make informed decisions to improve profitability and customer satisfaction.

## Problems because of poor data management

Poor data management can hinder the success of a craft beer bar by causing:  
Inefficient Inventory Management: Over-ordering or under-ordering stock due to lack of sales trend visibility.  
Missed Sales Opportunities: Failing to identify best-selling products or products that are losing popularity.  
Inability to Understand Customer Preferences: Lack of insight into which products, sizes, or categories are preferred by customers.  
Reduced Profit Margins: Inaccurate pricing strategies due to insufficient understanding of profit margins, discounts, and markup percentages.  
Without a proper data management strategy, it becomes challenging to anticipate demand, optimize product offerings, and make data-driven decisions to remain competitive in the market.

## Benefits from implementing a Data Warehouse

Implementing a data warehouse for a craft beer bar can solve the problems above and provide several advantages, such as:  
Comprehensive Sales Insights: Identify the best-selling beers, categories, and brands.  
Profitability Analysis: Track profit margins and determine the effectiveness of discounts and pricing strategies.  
Inventory Optimization: Understand sales trends to maintain optimal stock levels and avoid overstocking or shortages.  
Customer Behavior Analysis: Identify patterns in customer preferences to target promotions effectively.  
Vendor Performance Tracking: Monitor supplier pricing and performance to make better purchasing decisions.

Specific questions a DWH can answer include:  
Which beer categories contribute the most to revenue and profit?  
What is the impact of discounts on sales and profit?  
Are there seasonal trends in beer sales?  
Which suppliers consistently provide the most profitable products?

## DATASETS DESCRIPTION

**First Dataset – Sales Transactions**

This dataset contains detailed sales data from the bar's point-of-sale system:

**Date and Time Information**: date\_and\_time\_of\_unloading – The timestamp of each sale.

**Product Details**: product\_code – Unique identifier for the beer sold.

**Sales Metrics**:  
id – A unique identifier for each transaction or customer.  
first\_name – The first name of the customer.  
last\_name – The last name of the customer.  
email – The email address of the customer.  
city – The city where the customer resides.  
street – The street address of the customer.  
country – The country of the customer.  
Date\_and\_time\_of\_unloading – The timestamp of the unloading related to the purchase.  
Product\_code – A unique code assigned to the purchased product.  
Amount – The number of units purchased by the customer.  
Sale\_amount – The total revenue generated from the purchase.

Discount\_amount – The monetary value of discounts applied to the product.  
Profit – The financial gain calculated as revenue minus costs.  
Percentage\_markup – The percentage increase from the product's cost to its sale price.  
Discount\_percentage – The percentage discount applied to the product.  
warehouse – The storage location where the product is kept after unloading.

**Product Details**:  
- product\_code – Unique identifier for the product  
- name – Name of the beer (e.g., IPA, Lager)  
- size – Volume of the product (e.g., 500ml)  
- abv – Alcohol by volume percentage

**Supplier Information**:  
- vendor\_code – Unique identifier for the supplier  
- country\_of\_origin – Country where the beer is manufactured

**Price Information**:  
- retail\_price – Price at which the product is sold to customers  
- base\_unit – Standard unit of measurement (e.g., bottle, can)

Together, these datasets provide a detailed view of product performance, supplier contributions, and sales trends.

## GRAIN / DIM / FACT

Obraz zawierający diagram, tekst, Plan, Rysunek techniczny

Opis wygenerowany automatycznie

**Business Process:** Capturing and analyzing sales transactions.

**Grain:** One row per individual sale transaction.

**Dimensions:** Customer, Product, Time, and Location.

**Facts:** Sale amount, discount amount, profit, and quantity sold.

<warehouse>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| Warehouse\_id | PK | Serial |
| Location\_id | FK | Int |

(1, 10); (2, 12)

<time>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| Date\_and\_time\_of\_unloading | FK | Timestamp |
| year |  | Int |
| month |  | int |
| day |  | int |
| Hour |  | Timestamp |

(20.07.2020 18:00:00, 2020, 7, 20, 18:00:00); (20.09.2021 18:00:00, 2021, 9, 20, 18:00:00);

<customer>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | FK | serial |
| First\_name |  | Varchar(30) |
| Last\_name |  | Varchar(30) |
| email |  | Varchar(30) |
| Location\_ID | FK | int |

(1, ‘Jack’, ‘Sparrow’, ‘captain@gmail.com’,12); (‘Will’,’Turner’’captain\_2@gmail.com’,34);

<location>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | PK | serial |
| City\_id | Fk | int |
| Street\_id | FK | Int |
| House\_number |  | Int |
| Apartment\_number |  | int |

(1, 2, 1, 1,3); (2,643,3213,2,NULL);

<city>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | PK | serial |
| city\_name |  | Varchar(30) |
| Postal\_code |  | Varchar(7) |
| Country\_id | FK | int |

(1, ‘Warsaw’, ’02-495’, ‘captain@gmail.com’,1); (2,’Krakow’,’43-121’,1);

<country>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | PK | serial |
| Country\_name |  | Varchar(30) |

(1, ‘Poland’); (2,’Germany’);

<street>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | PK | serial |
| street\_name |  | Varchar(30) |

(1, ‘Market Street’); (2,’First street’);

<vendor>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| code | PK | serial |
| Vendor\_name |  | Varchar(30) |
| TaxIdentification\_number |  | Varchar(30) |

(1, ‘FunkyFluid’,’1212-342-34234’); (2,’Tatra’,’324234-3422342-2342’);

<beer>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| code | PK | serial |
| Vendor\_code |  | int |
| name |  | Varchar(40) |
| Retail\_price | FK | int |
| Base\_unit |  | Varchar(10) |
| Country\_of\_Origin\_id | FK | int |
| size |  | float |
| ABV |  | float |

(1, 1, ’IPA’, 280,’Pieces’,1,0.33,5.2); (2, 4, ’DIPA’, 310,’Pieces’,3,0.33,9.2);

<sales>

|  |  |  |
| --- | --- | --- |
| Column name | Description | Data Type |
| id | PK | serial |
| date\_and\_time\_of\_unloading |  | timestamp |
| customer\_id | FK | int |
| Product\_code | FK | int |
| Amount |  | float |
| Sale\_amount |  | int |
| Discount\_amount |  | float |
| Profit |  | float |
| Percentage\_markup |  |  |
| Discount\_percentage |  |  |
| warehouse\_id | FK | int |

(1, 01.01.2020 23:00:00, 10, 43,0.25,160,81.25,103.17, 11.11, 3);   
(4, 01.01.2021 23:00:00, 15, 41,1,1379.91,20.81,175.19, 85.88, 2);

# Business Layer 3NF

# Business Layer Dimensional Model

# Logical Scheme

# Data Flow

# Fact Table Partitioning Strategy