

# **Infocepts Data Science Based Project**

**Institute: Ramdeobaba University(RBU)**

**Formerly: Shri Ramdeobaba College of Engineering and Management**

**Team Members: Deepshika Singh (A-01)**

**Aaryan Babuta (A-02)**

**Muskan Asudani (A-06)**

**Aditya Shukla (A-42)**

**Project Guide: Dr. Parag Jawarkar (Dean T&P, RCOEM)**

**Co- Guide: Pratham Gangwal (Infocepts)**

# Contents:

Objective and Methodology  
of the Project

Warehouse and Retail Sales  
Analysis

Approach for Task

Expected Outcomes

## Project Overview

- A collaborative data science initiative under the mentorship of an industry expert from InfoCepts.
- The project consists of a sequence of real-world tasks designed to develop applied data science skills.
- Focus areas include data analysis, visualization, insights generation, and business recommendations.

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## Objective and Methodology of the Project

- Apply data science tools and techniques to solve business problems.
- Gain exposure to industry-grade problem statements and datasets.
- Deliver actionable insights to improve business decision-making.
- Task-based Approach: Sequential tasks based on real-world data.
- Tools Used: Python, SQL, Pandas, Seaborn/Matplotlib, Jupyter Notebooks.
- Deliverables: Code, visualizations, reports, and presentation for each task.

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# Warehouse and Retail Sales Analysis

**Goal:** Analyze historical retail and warehouse sales data.

**Subtasks:**

- Data Cleaning & Preparation
- Exploratory Data Analysis
- Business Insights & Visualizations
- Recommendations for improvement



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## Approach for Task

**Data Cleaning:** Handle nulls, remove duplicates, format columns.

**EDA:**

- Yearly Sales Trends
- Top Suppliers & Best-Selling Items
- Item Type Contribution

**Business Analysis:**

- Monthly averages
- Seasonal patterns

**Recommendations:**

- Based on high-performing segments and trends

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## Expected Outcomes

- Improved analytical thinking and coding skills.
- Hands-on experience with industry data.
- Practical understanding of end-to-end data science workflows.
- Ready to contribute to real-world business analytics scenarios.

The background is an abstract geometric pattern composed of numerous overlapping triangles. The color palette transitions from warm yellows and oranges on the left to cool blues and greys on the right, with a soft gradient in the center. A dark, semi-transparent horizontal bar is positioned across the middle of the image.

**Thank You**

# Warehouse and Retail Sales Analysis

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**Co- Guide: Pratham Gangwal (Data Scientist, Infocepts)**



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## Task Introduction

- Task involves analysing multichannel sales data.
- It focuses on implementation and analytical procedure.
- Covers data wrangling, visualization, and interpretation.
- Goal: extract trends, patterns, and actionable insights.

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Task Introduction

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## Objective and Methodology

- Carry out end-to-end data preparation and analysis.
- Discover seasonal and categorical sales trends.
- Identify top-performing suppliers and products.
- Support business decisions with evidence-based insights.
- **Data Cleaning:** Removed null values, handled duplicates.
- **Exploratory Analysis:** Summarized and visualized sales.
- **Business Metrics:** Aggregated by supplier, item, and type.
- **Insights:** Identified high-impact trends and contributors.

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## Tools & Implementation

- Python (Jupyter Notebook) used for end-to-end workflow.
- Used pandas for data wrangling and seaborn/matplotlib for plots.
- SQL queries used optionally for structured analysis.
- Created visual summaries: bar charts, line graphs, heatmaps.

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## Approach for Task

- Grouped data by year, supplier, item type for aggregation.
- Analysed average monthly sales to detect seasonality.
- Merged insights from multiple dimensions (item, time, channel).
- Applied step-by-step logic for transparency and traceability.



# Contents:

Task Introduction

Objective and Methodology

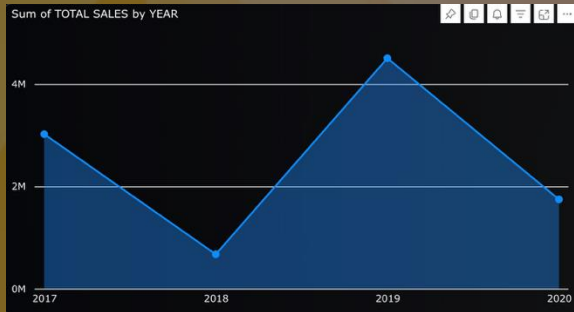
Tools & Implementation

Approach for Task

## Outcomes

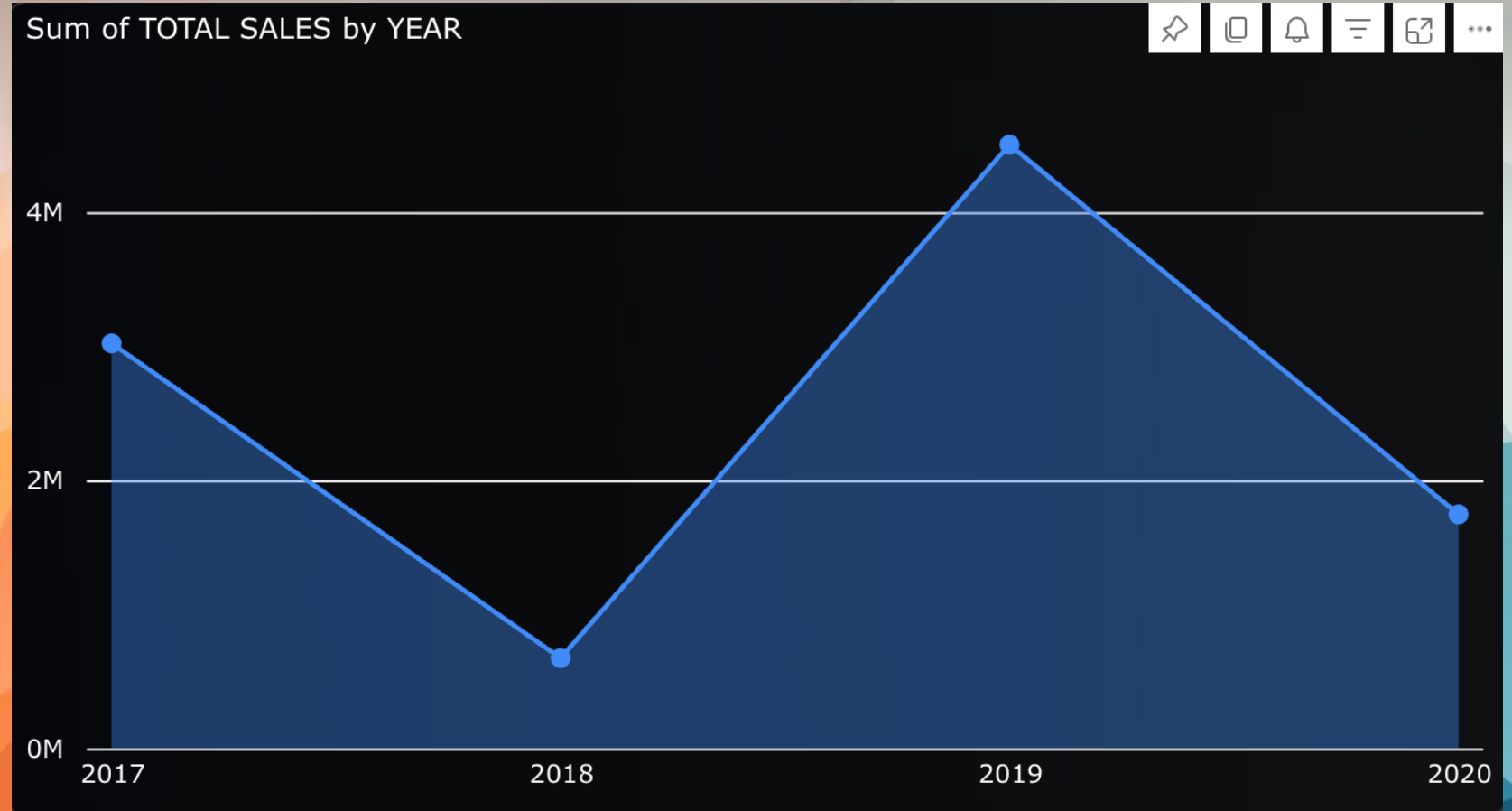
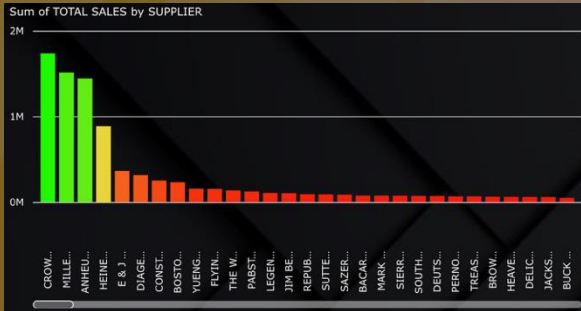
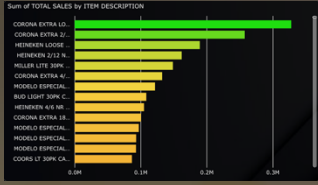
- Top 5 suppliers contributed the most to total sales.
- Top 10 items identified by cumulative retail + warehouse sales.
- Seasonal patterns found with sales spikes in specific months.
- Item type “X” showed dominant contribution to total revenue.

# Additional Implementation



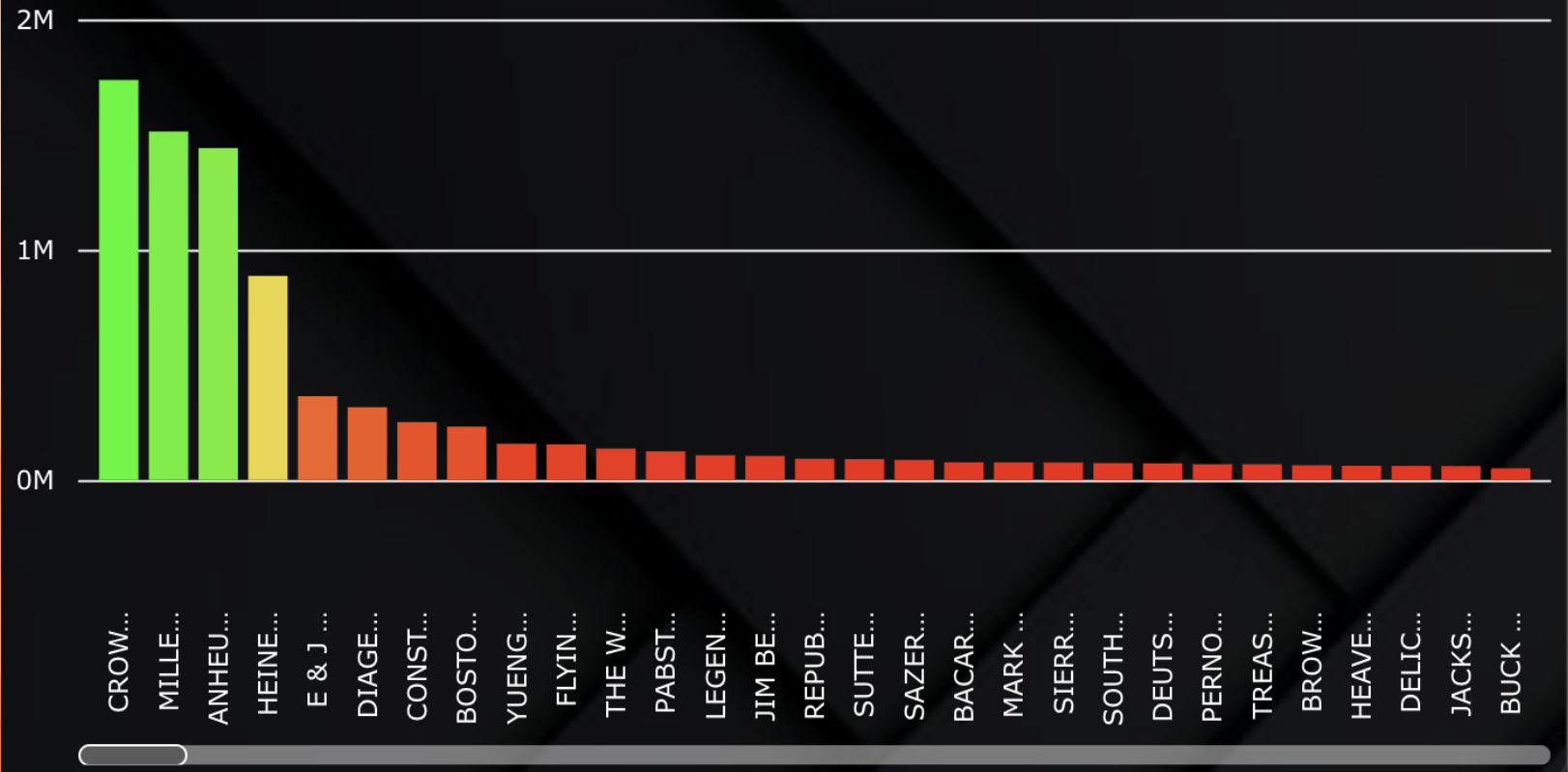
Following Visuals Are Created Using Power Bi

# Additional Implementation

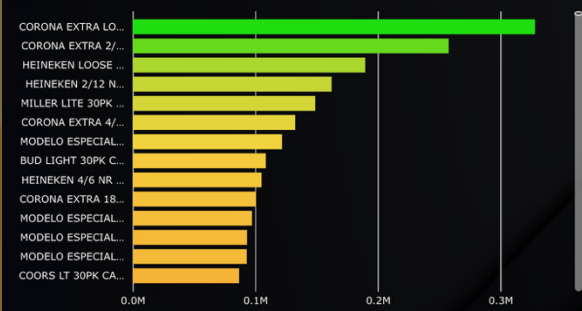


# Additional Implementation

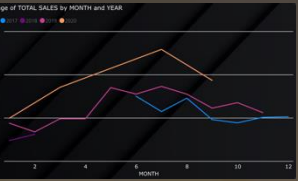
Sum of TOTAL SALES by SUPPLIER



Sum of TOTAL SALES by ITEM DESCRIPTION

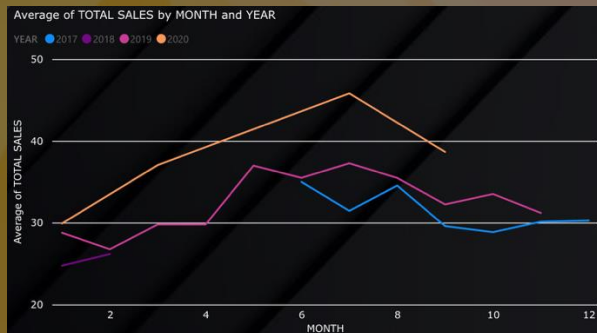
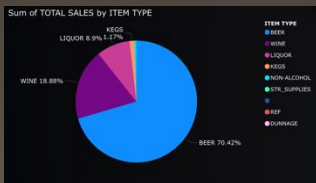


Sum of TOTAL SALES by YEAR

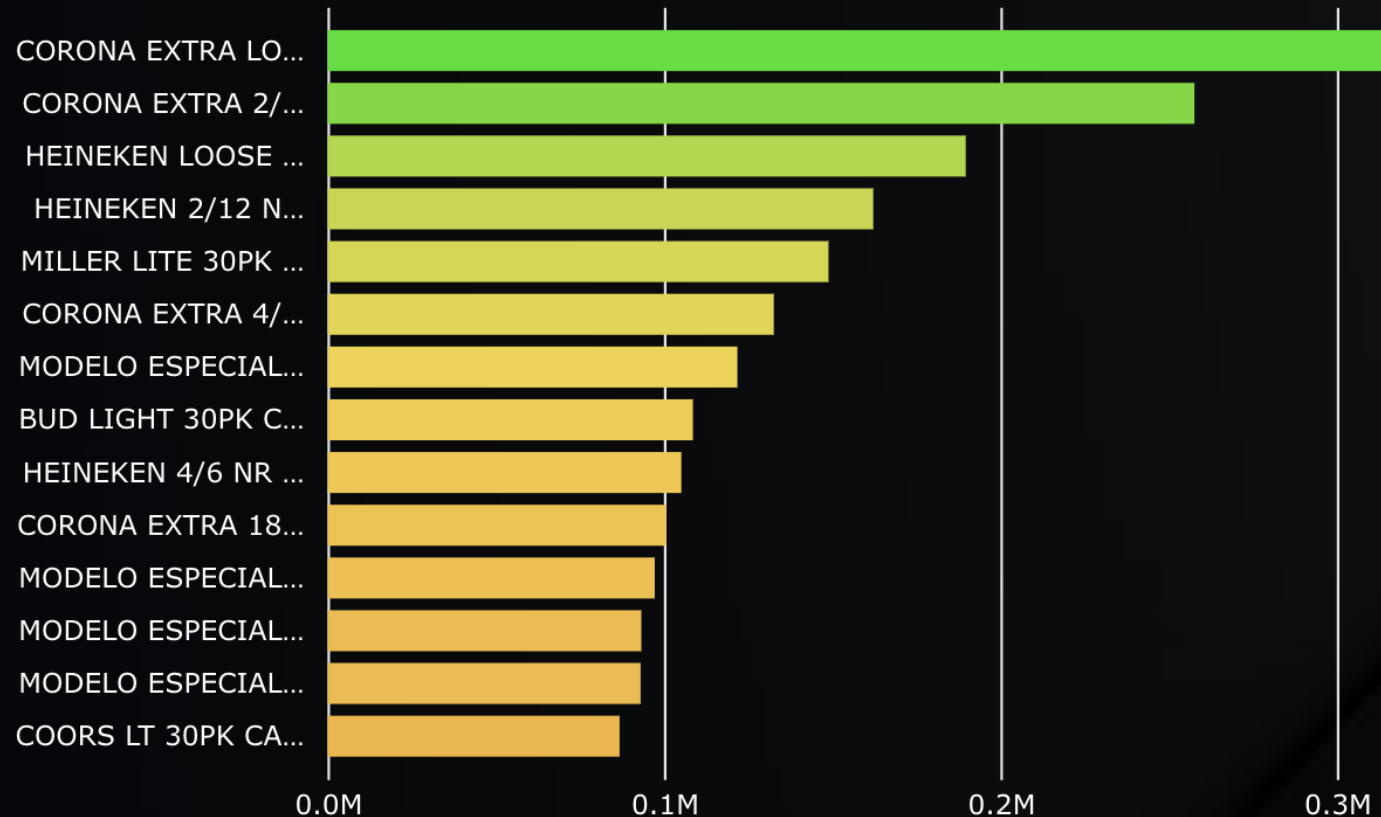




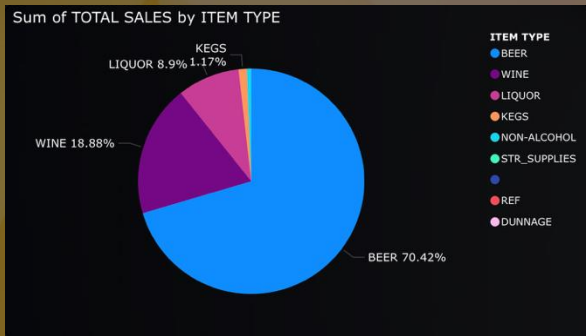
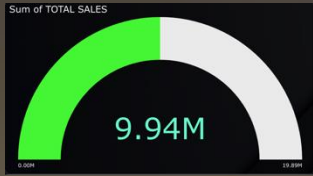
# Additional Implementation



Sum of TOTAL SALES by ITEM DESCRIPTION

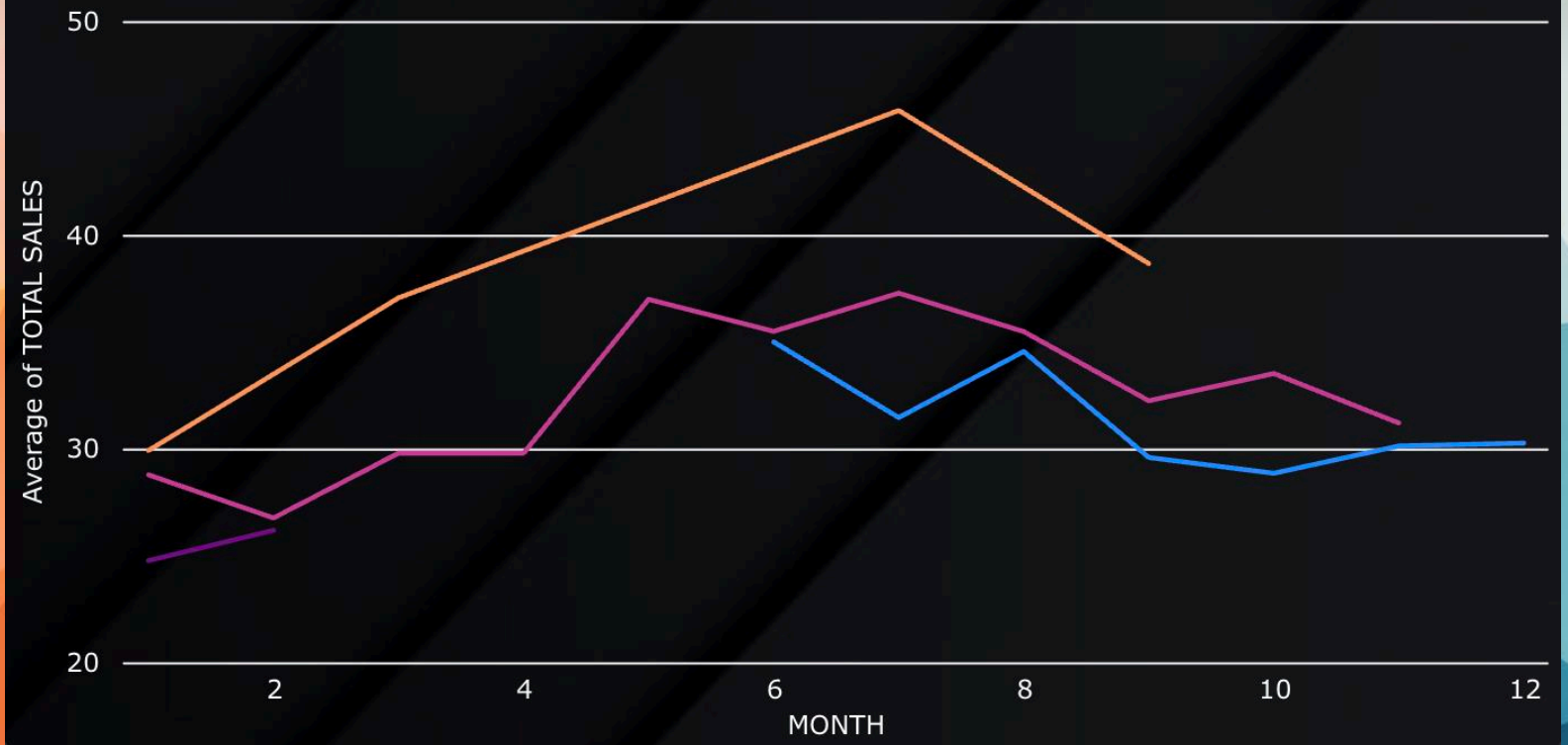


# Additional Implementation

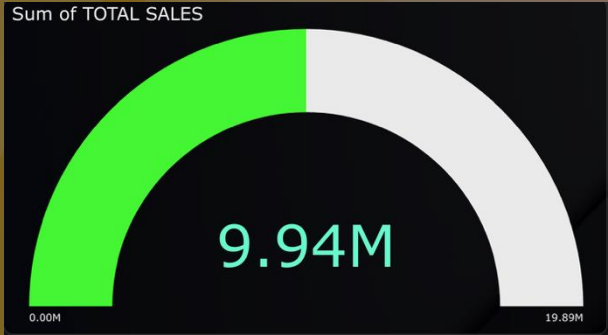


Average of TOTAL SALES by MONTH and YEAR

YEAR ● 2017 ● 2018 ● 2019 ● 2020

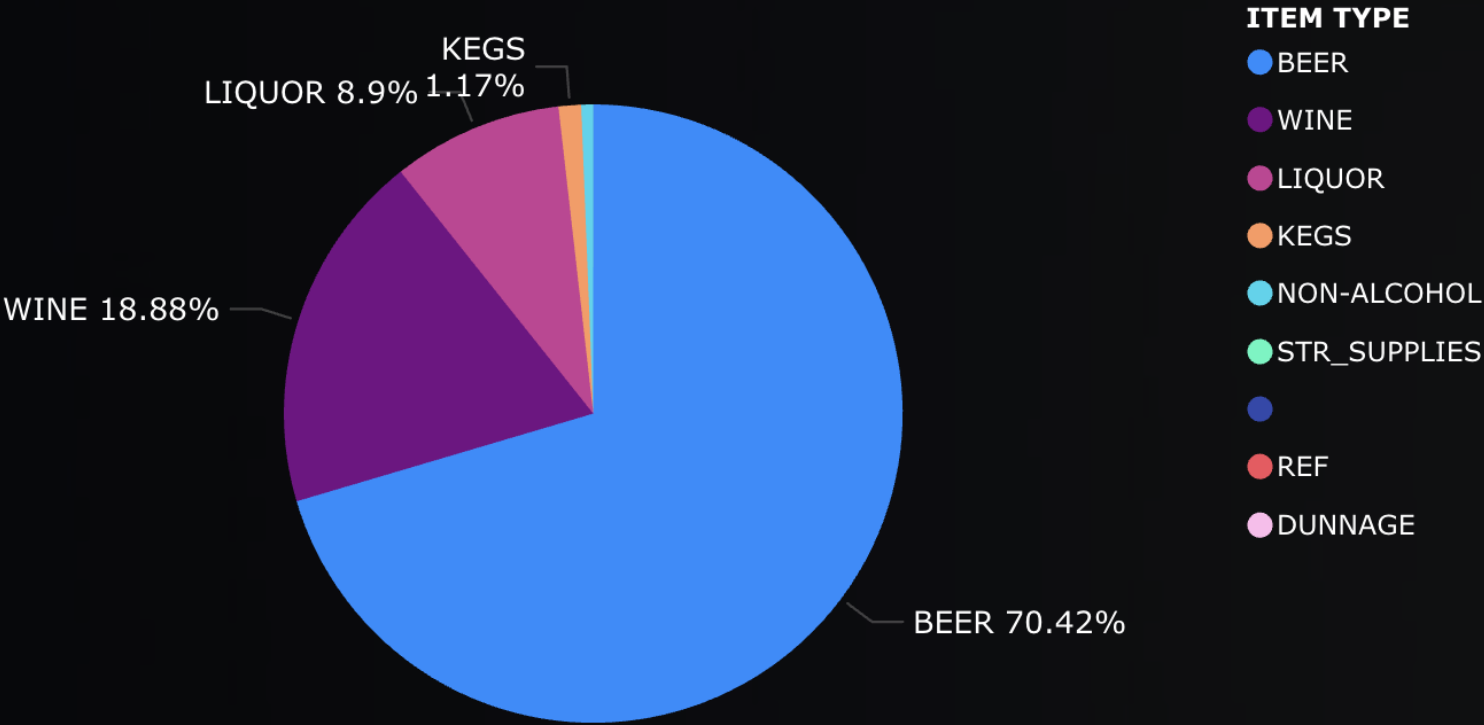


BEER	6,527,236.53	574,233.53	7,101,470.06
	Sum of MONTHLY SALES		Sum of TOTAL SALES
WINE	1,346,994.93	746,498.93	2,093,493.86
	Sum of MONTHLY SALES		Sum of TOTAL SALES
LIQUOR	14,409.27	862,491.43	876,900.70
	Sum of MONTHLY SALES		Sum of TOTAL SALES
KEGS	0.00	0.00	0.00
	Sum of MONTHLY SALES		Sum of TOTAL SALES
NON-ALCOHOL	26,146.59	116,431.00	142,577.59
	Sum of MONTHLY SALES		Sum of TOTAL SALES
STR_SUPPLIES	14,894.31	40,233.90	55,128.21
	Sum of MONTHLY SALES		Sum of TOTAL SALES
REF	0.00	0.00	0.00
	Sum of MONTHLY SALES		Sum of TOTAL SALES
DUNNAGE	0.00	0.00	0.00
	Sum of MONTHLY SALES		Sum of TOTAL SALES



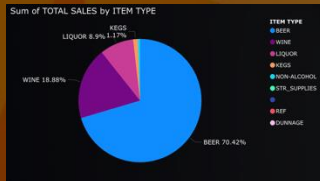
# Additional Implementation

Sum of TOTAL SALES by ITEM TYPE

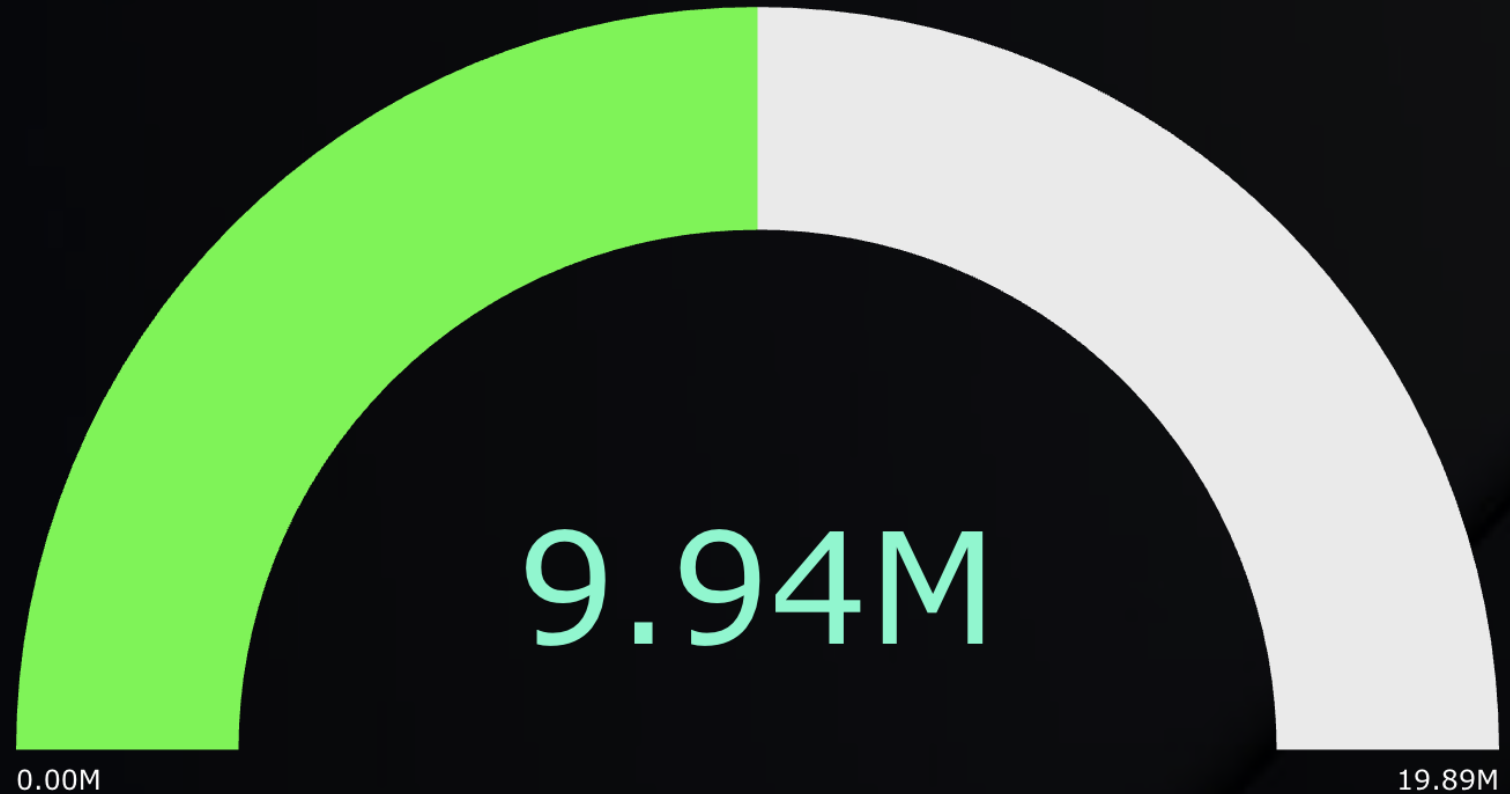


# Additional Implementation

BEER	6,527,236.51	574,220.53	7,101,457.04
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
WINE	1,156,984.91	746,498.59	1,903,483.50
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
LIQUOR	94,906.27	802,691.43	897,597.70
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
KEGS	118,431.00	0.00	118,431.00
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
NON-ALCOHOL	26,149.59	34,084.31	60,233.90
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
STR_SUPPLIES	0.00	2,740.88	2,740.88
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
REF	-20,499.00	663.63	-19,835.37
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES
DUNNAGE	-121,454.00	0.00	-121,454.00
Sum of WAREHOUSE SALES		Sum of RETAIL SALES	Sum of TOTAL SALES



Sum of TOTAL SALES





# Additional Implementation

## BEER

6,527,236.51

Sum of WAREHOUSE SALES

574,220.53

Sum of RETAIL SALES

7,101,457.04

Sum of TOTAL SALES

## WINE

1,156,984.91

Sum of WAREHOUSE SALES

746,498.59

Sum of RETAIL SALES

1,903,483.50

Sum of TOTAL SALES

## LIQUOR

94,906.27

Sum of WAREHOUSE SALES

802,691.43

Sum of RETAIL SALES

897,597.70

Sum of TOTAL SALES

## KEGS

118,431.00

Sum of WAREHOUSE SALES

0.00

Sum of RETAIL SALES

118,431.00

Sum of TOTAL SALES

## NON-ALCOHOL

26,149.59

Sum of WAREHOUSE SALES

34,084.31

Sum of RETAIL SALES

60,233.90

Sum of TOTAL SALES

## STR\_SUPPLIES

0.00

Sum of WAREHOUSE SALES

2,740.88

Sum of RETAIL SALES

2,740.88

Sum of TOTAL SALES

1.00

Sum of WAREHOUSE SALES

0.00

Sum of RETAIL SALES

1.00

Sum of TOTAL SALES

## REF

-20,499.00

Sum of WAREHOUSE SALES

663.63

Sum of RETAIL SALES

-19,835.37

Sum of TOTAL SALES

## DUNNAGE

-121,454.00

Sum of WAREHOUSE SALES

0.00

Sum of RETAIL SALES

-121,454.00

Sum of TOTAL SALES



The background is an abstract geometric pattern composed of numerous overlapping triangles. The color gradient transitions from a bright yellow on the left side, through orange and red in the center, to a deep blue on the right side. The triangles vary in size and orientation, creating a complex, crystalline texture.

**Thank You**