

DEEPP (Data End-to-End Portfolio Project)



END-TO-END CUSTOMER JOURNEY : ANALYSIS KPI REVENUE AND FUNNEL METRIC FOR CONVERSION PERFORMANCE *Python&Power BI Tools*

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01 Executive Summary

Project Description

This project aims to increase the company's revenue by 10% within six months by integrating comprehensive analysis to monitor key revenue drivers and optimize underperforming website funnels. The focus is on identifying conversion bottlenecks and implementing data driven optimization strategies.

Objectives

Revenue Growth - Achieve a 10% increase in total company revenue within six months, **Funnel Optimization** - Identify and optimize underperforming website funnels to improve conversion rates, and **Data Driven Insights** - Leverage comprehensive analysis to support strategic, evidence based decision making.

Tools

The tools utilized for data analysis in this project are **Python** and **Power BI**. Python will be applied for advanced data processing, statistical modeling, and automation, while Power BI will be used to visualize insights, and present interactive dashboards for decision making.

Metrics

This analysis applies five key metrics : **Total Revenue**, **Average Order Value (AOV)**, **Profit Margin**, **Conversion Rate**, and **Refund Rate**. These metrics reflect revenue performance, transaction efficiency, and the quality of sales funnels and campaigns.

Analysis Result

- **Performance Metrics** → Business performance exceeds 2026 industry standards, with margin and conversion as key strengths.
- **Traffic Acquisition** → Traffic shows stable growth, positively correlated with purchases.
- **Conversion & Revenue** → *Brand campaign* leads with the highest conversion, while *Non campaign* and *Nonbrand* remain solid.
- **Pageview Behaviour** → High drop off (1.05M → 30K orders), yet revenue stays strong (1.94M) due to high AOV (~\$59.99).
- **Refund Analysis** → *The Original Mr. Fuzzy* maintains low refund rates, serving as a quality benchmark and product campaign mismatch requires evaluation.

Recommendations

- **Retention & Loyalty** : Focus on loyalty programs to maintain high AOV and margin, reduce churn, and strengthen customer relationships.
- **Revenue Scaling** : Increase budget for digital ads, build strategic partnerships, and expand affiliate programs to reach wider markets.
- **Traffic Optimization** : Analyze January 2015 campaign success and replicate key elements (channels, messaging, timing, segments).
- **CRM Engagement** : Develop CRM systems to sustain post campaign traffic through email, push notifications, and loyalty initiatives.
- **Conversion Efficiency** : Reallocate budget toward high ROI branding campaigns and reduce spend on low performing campaigns.
- **Funnel Synchronization** : Ensure incoming traffic converts into optimal revenue by improving conversion and budget efficiency



02 Project Background

Company Overview



01

Maven Fuzzy Factory is an online retailer specializing in the sale of teddy bears. The company focuses on optimizing user experience, sales conversion, and operational efficiency.

Data Information



02

The dataset is designed for in-depth analysis of Maven Fuzzy Factory's e-commerce operations. [Format data CSV and Multi table with relational structure, by 6 tables with field count 35 columns and 1.595.524 rows.](#)

Data Source



03

This dataset is [provided by Maven Analytics](#), licensed under the Public Domain and simulates realistic e-commerce operations. [Link](#)



03 Project Goals



PROBLEM STATEMENT

How can company integrated into a comprehensive analysis to overcome the challenges of monitoring key revenue and identifying website funnels that need optimization, with the goal of increasing total revenue by 10% within the next 6 months ?



Data Integration

Connect core table,
Clean and standardize
data



KPI Definition&Funnel

Breakdown KPI Revenue,
Analysis Funnel Metric

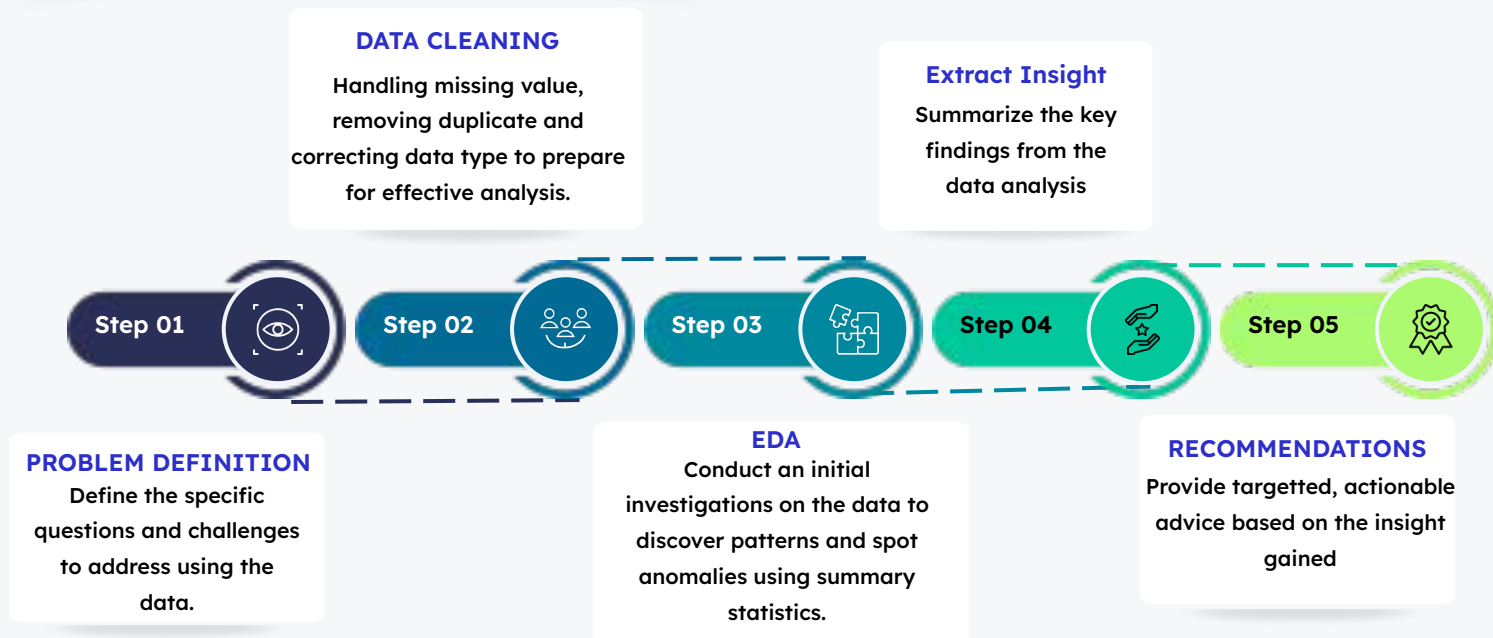


Dashboard Performance

Overview Key KPIs
and Funnel Metric



04 Research Metodology





05 Data Analysis

Performance Metrics

1.94M Total Revenue	59.99 AOV	62.74% Profit Margin	6.83% Conversion Rate	4.40% Refund Rate
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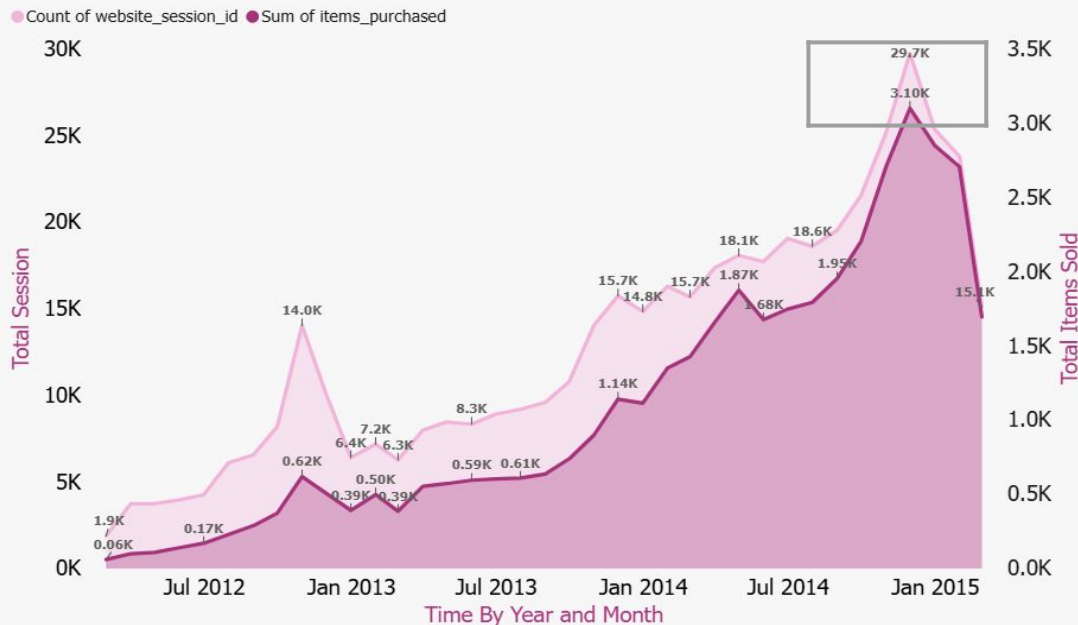
Metric	Score	Benchmark e-commerce*	Category
Total Revenue	1.94M	Highly dependent on business scale	⚠ Contextual ✅ Solid performance for mid size e-commerce
Average Order Value	59.99	45-60 USD	✅ Good
Profit Margin	62.74%	30-50% (average e-commerce)	✅ Excellent
Conversion Rate	6.83%	2-3% (average), >5% = elite level	✅ Excellent
Refund Rate	4.40%	<5% considered healthy	✅ Healthy

*Benchmark e-commerce from Store Growers [link](#)



Traffic and Acquisition

Website Sessions and Purchase Activity Trend

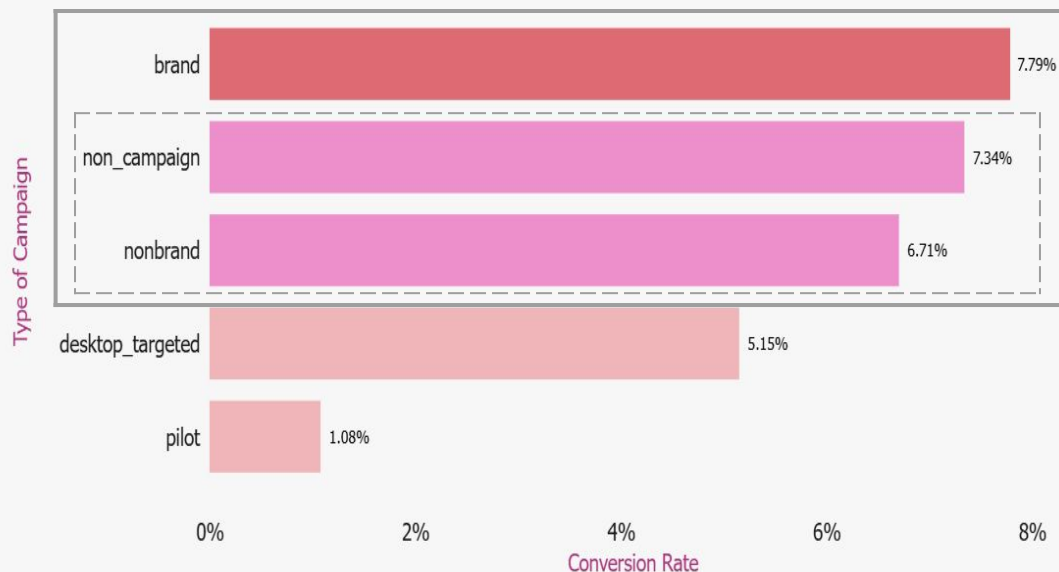


- **Stable Growth (2012-2015) and Traffic Purchase Correlation**
Website sessions and purchases increased steadily, reflecting effective acquisition strategies. Every rise in traffic directly translated into higher purchases, proving the conversion funnel works well.
- **Peak Activity (Jan 2015)**
A sharp spike occurred, likely driven by major campaigns or seasonal momentum.
- **Post Peak Decline**
After January 2015, both traffic and purchases dropped, highlighting the need for stronger retention efforts.



Conversion and Revenue

Effectiveness of Campaigns on Conversion Rate

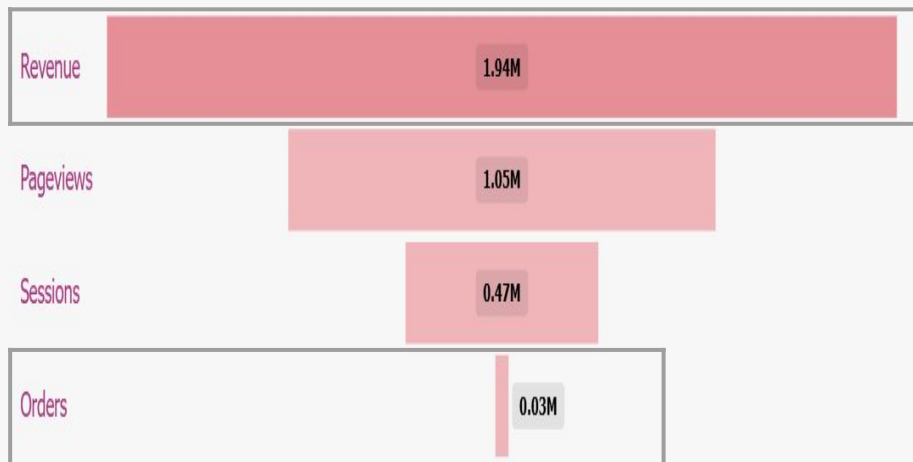


- Brand campaign most effective → Highest conversion, strong impact of branding.
- Non-campaign & nonbrand solid → Organic traffic still drives conversions.
- Desktop and Pilot campaign targeting weaker → Strategy needs refinement and Requires optimization also testing.
- Large conversion gaps → Smart budget allocation is crucial.



Pageview Behaviour

Funnel Performance by Stage



1. Sharp Decline Across Funnel Stages

Insight : From 1.05M pageviews, only 30K orders were generated. That's about 2.86% of sessions leading to purchases.

Meaning : A significant potential is lost mid-funnel. Drop-off points need to be identified, whether on product pages, checkout, or payment steps.

2. Low Pageviews to Sessions Ratio

Insight : 1.05M pageviews resulted in only 0.47M sessions.

Meaning : Many visitors don't continue into active sessions. Possible causes include high bounce rate, slow loading speed, or irrelevant content.

3. Low Orders to Sessions Ratio

Insight : Only 30K orders from 470K sessions (~6.38%).

Meaning : Conversion rate from sessions to purchases can be improved. UX optimization, trust signals, and more compelling offers are needed.

4. High Revenue Despite Low Orders

Insight : Revenue reached 1.94M from just 30K orders → AOV around \$59.99

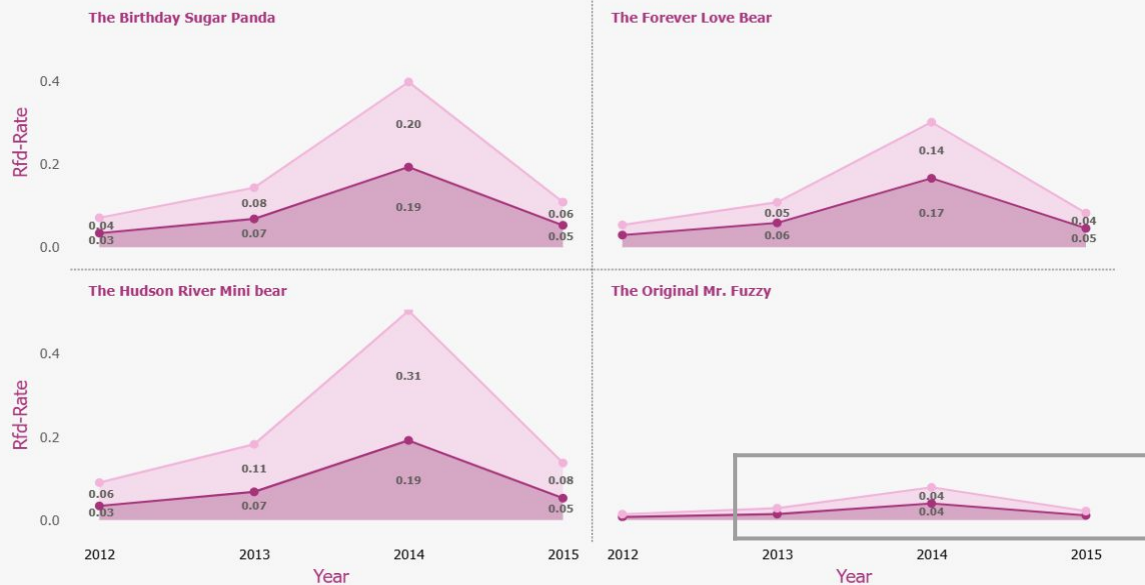
Meaning : Average transaction value is strong, showing effective pricing and bundling strategies, but need reducing early funnel attrition and drop off to improve conversion rates and maximize revenue potential.



Refund Product Per Campaign Year

Product Level Refund Analysis Across Campaigns

Refund Rate per Product Refund Rate by Campaign

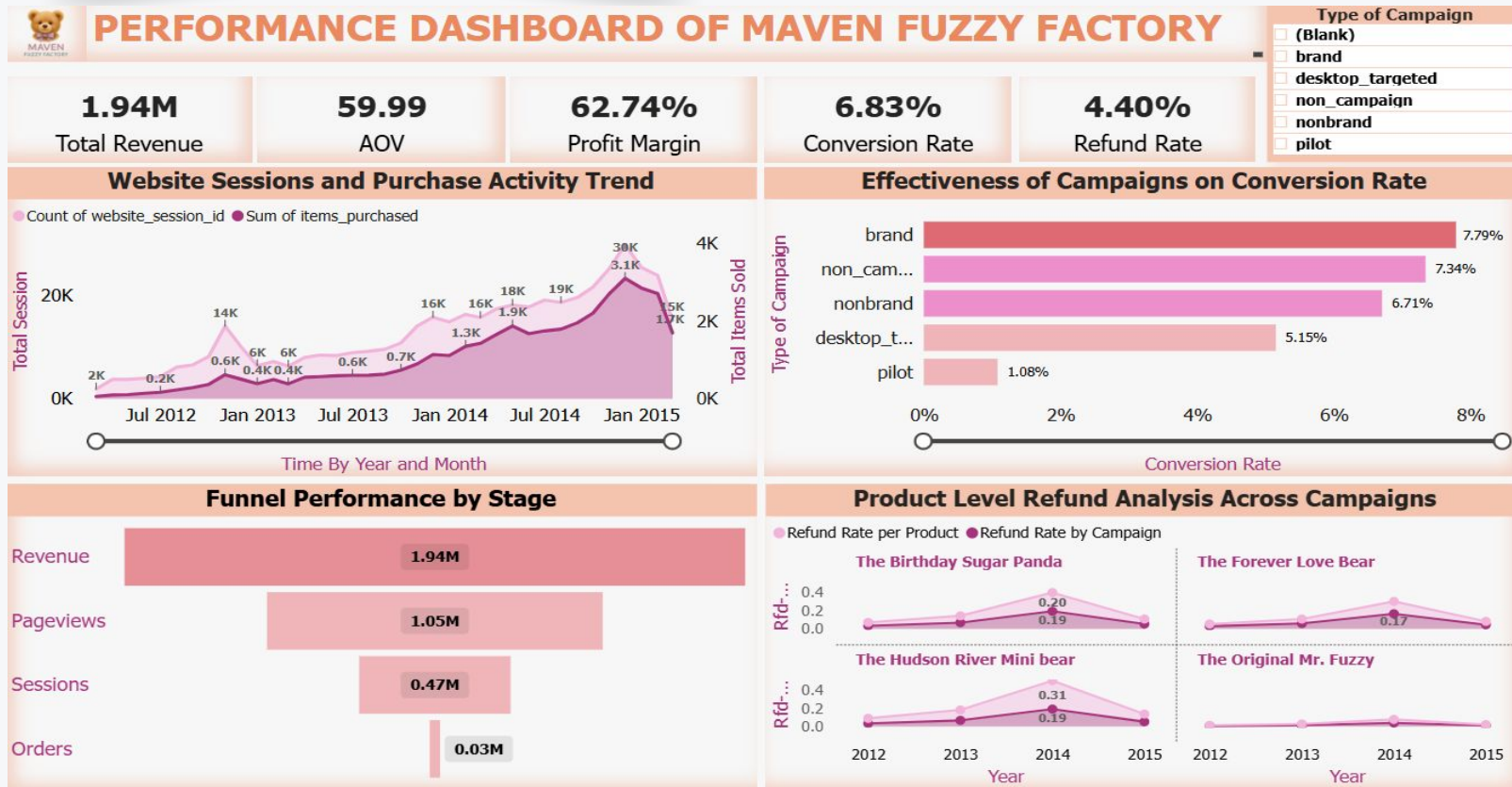


- **Refund Spike in 2014**
All products experienced an increase in refunds, indicating a systemic issue.
- **The Original Mr. Fuzzy Stable**
Refund rate remained consistently low, serving as a quality benchmark.
- **Product vs Campaign Gap**
Some campaigns did not align with the promoted products. Positioning and campaign strategies need evaluation.

06 Business Recommendations



Dashboard by POWER BI Tool





MAVEN
FUZZY FACTORY

Thank You for your attention



APPENDIX



ROOT CAUSE ANALYSIS MAVEN FUZZY FACTORY

Optimizing Key Revenue dan Funnel Metrics

(with the goal of increasing total revenue by 10% within the next 6 months)

Internal Factors

External Factors

Price

Product

Customer

Market Competition

Trend Behaviours

Product Variety

Brand Awareness

Pricing&Margin Product

Bundling&Cross Selling

Tracking Pageviews

Repeat Customer

Performance Metrics

Total Revenue
Average Order Value (AOV)
Profit Margin
Conversion Rate
Refund Rate

Traffic&Acquisition Analysis
Conversion&Revenue Analysis
Pageview Behaviour Analysis
Refund Product Per Campaign
Year Analysis



DARCI (Project Management Framework)

01



DECIDER

Chief Executive
Officer (CEO)

02



ACCOUNTABLE

Head of Data
Analytics

03



RESPONSIBLE

Data Analyst

04



CONSULTED

Product Team
Marketing
Team

05

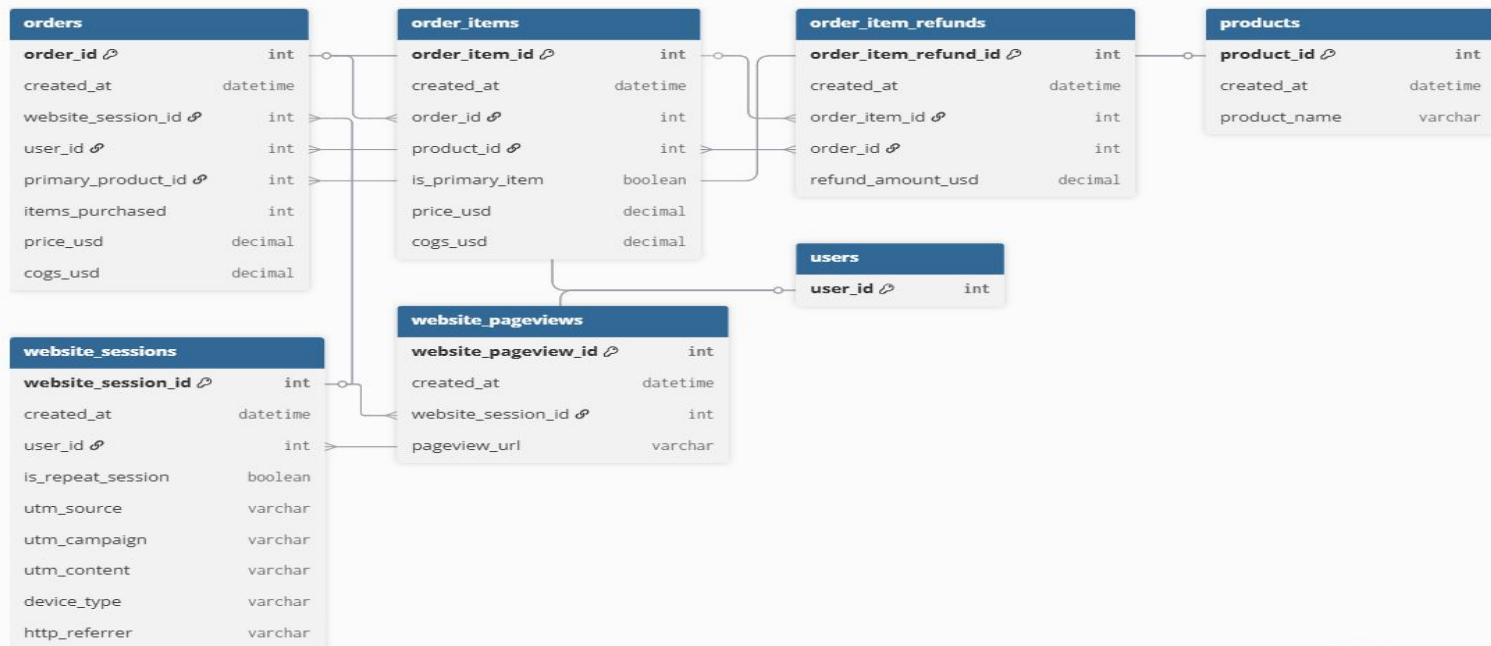


INFORMED

Business
Development Team,
Finance Team



ERD (Entity Relationship Diagram)





IMPORTANT LINK

Data Source

<https://mavenanalytics.io/data-playground/toy-store-e-commerce-database>

Data ERD (Entity Relationship Diagram)

<https://dbdiagram.io/d/69497b9361d95806cf367016>

Data Cleaning&Preparations using Python in Google Colab

<https://colab.research.google.com/drive/1g7ORs-fjC9m7Yf95YAsyrvCESp1vbe1>

Data Analysis EDA&Outlier using Python in Google Colab

https://colab.research.google.com/drive/1EtsNKAcnu3h6GFZFzdmU_GESyPiAeC1s

Data Analysis KMeans Clustering using Python in Google Colab

https://colab.research.google.com/drive/1abrCjVrz7PcIRqF9TK9vOyqwrrVnA_H7

Supporting Data Benchmark e-commerce from Store Growers

<https://www.storegrowers.com/ecommerce-metrics-benchmarks/>