A NON-STORE ONLINE BUSINESS RECOMMENDER SYSTEM

AGENDA

1 . Business Understanding
2. Data Understanding
3. Data Preparation
4. Modelling
5. Conclusions
6. Recommendations

BUSINESS UNDERSTANDING

Problem Statement

Online retail businesses face a variety of complex challenges that require careful management, including engaging customers through personalized marketing and seamless user experiences, helping customers discover products effectively, tailoring the shopping experience to individual preferences while balancing personalization and privacy, accurately forecasting demand and optimizing inventory, managing costs across logistics, fulfilment, and marketing, protecting customer data and preventing fraud, and providing a consistent, integrated experience across all sales channels. Addressing these issues requires strategic planning, data-driven decision-making, process optimization, and leveraging the right technologies - critical steps for online retailers to attract, retain, and serve customers in a competitive market.

BUSINESS UNDERSTANDING

Overview

A non-store online retail business is a type of e-commerce venture that operates entirely in the digital space without a physical storefront or location; the key characteristics of this model include having no physical retail location, maintaining a digital-only presence, and streamlined operations, as without the overhead and logistics of maintaining a physical retail space, non-store online retailers can operate more efficiently, allowing them to expand their geographic reach and sell and ship products to customers across a much wider, potentially global, area, while the digital-only nature of these businesses provides them with robust customer data and analytics, enabling a data-driven approach to make informed decisions about their marketing, product selection, and overall business strategies, ultimately allowing non-store online retail businesses to leverage the core advantages of e-commerce, such as lower costs, greater flexibility, and the ability to reach a wider customer base, compared to traditional brick-and-mortar retail operations.

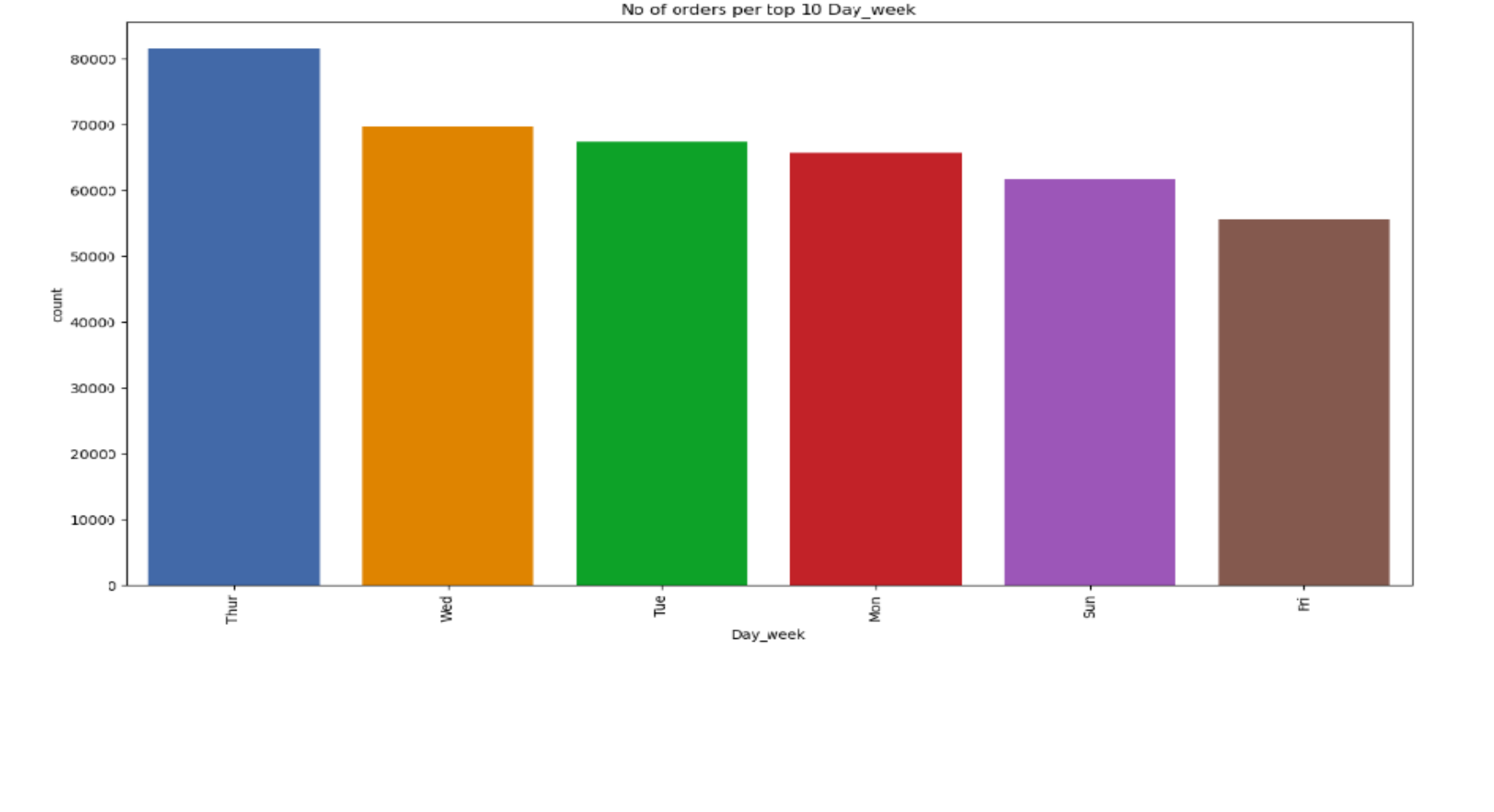
DATA UNDERSTANDING

- Data set is from UCI Machine Learning Repository
- For the period between year 2010 and 2011
- From a UK based non-store online shop that sells unique gift

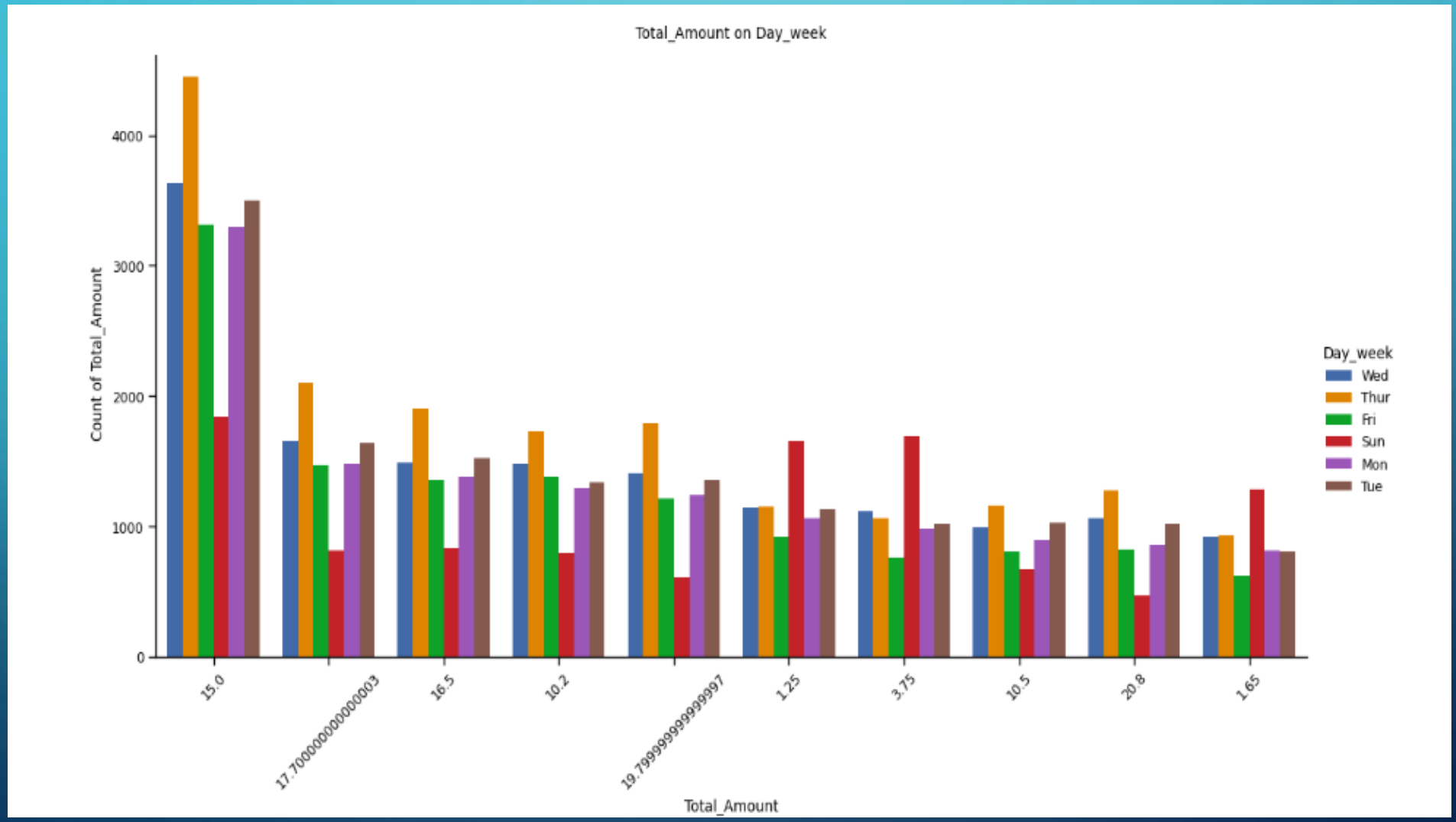
DATA PREPARATION

- Data Cleaning
- Exploratory Data Analysis(EDA)

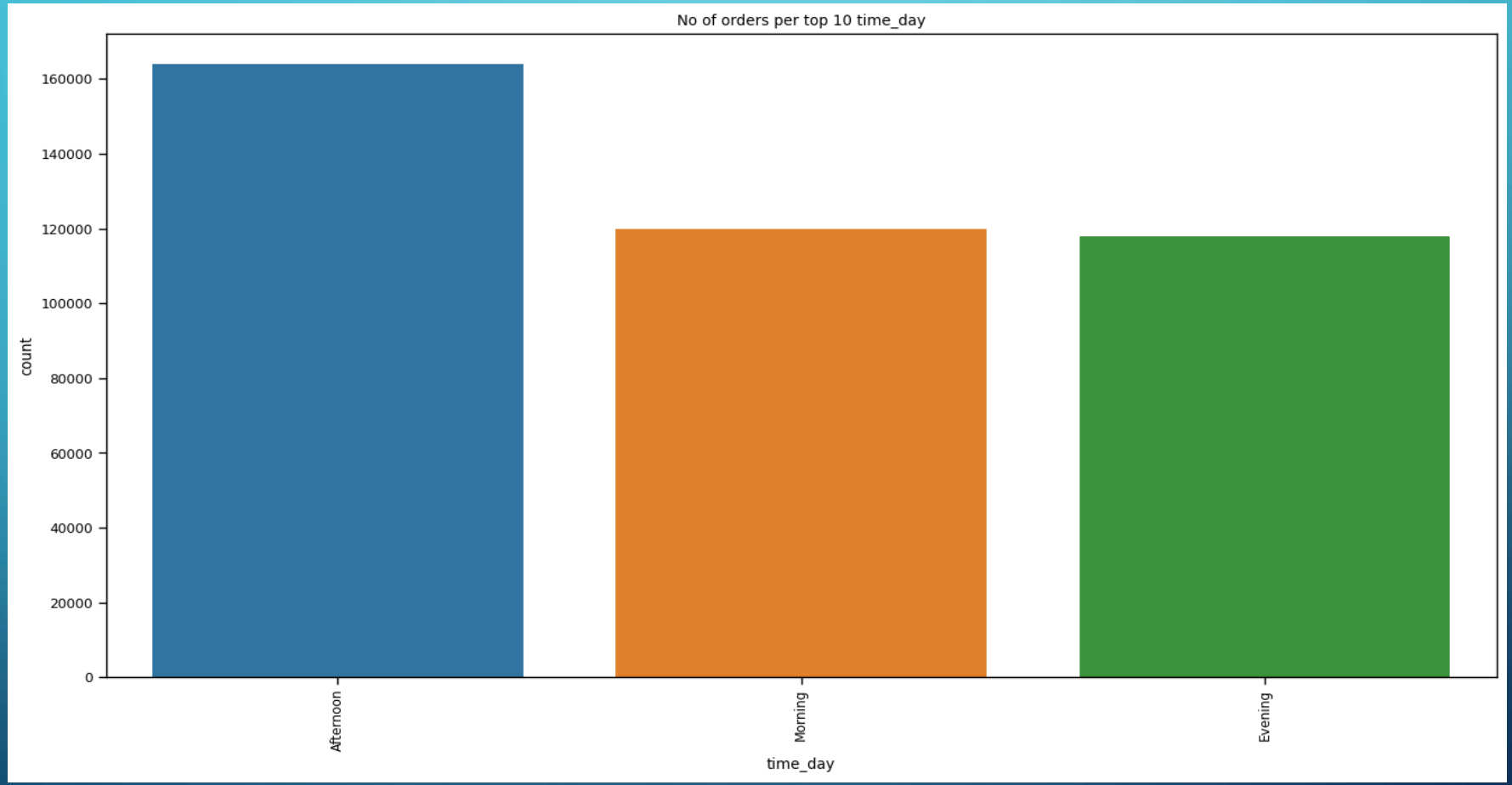
UNIVARIATE ANALYSIS



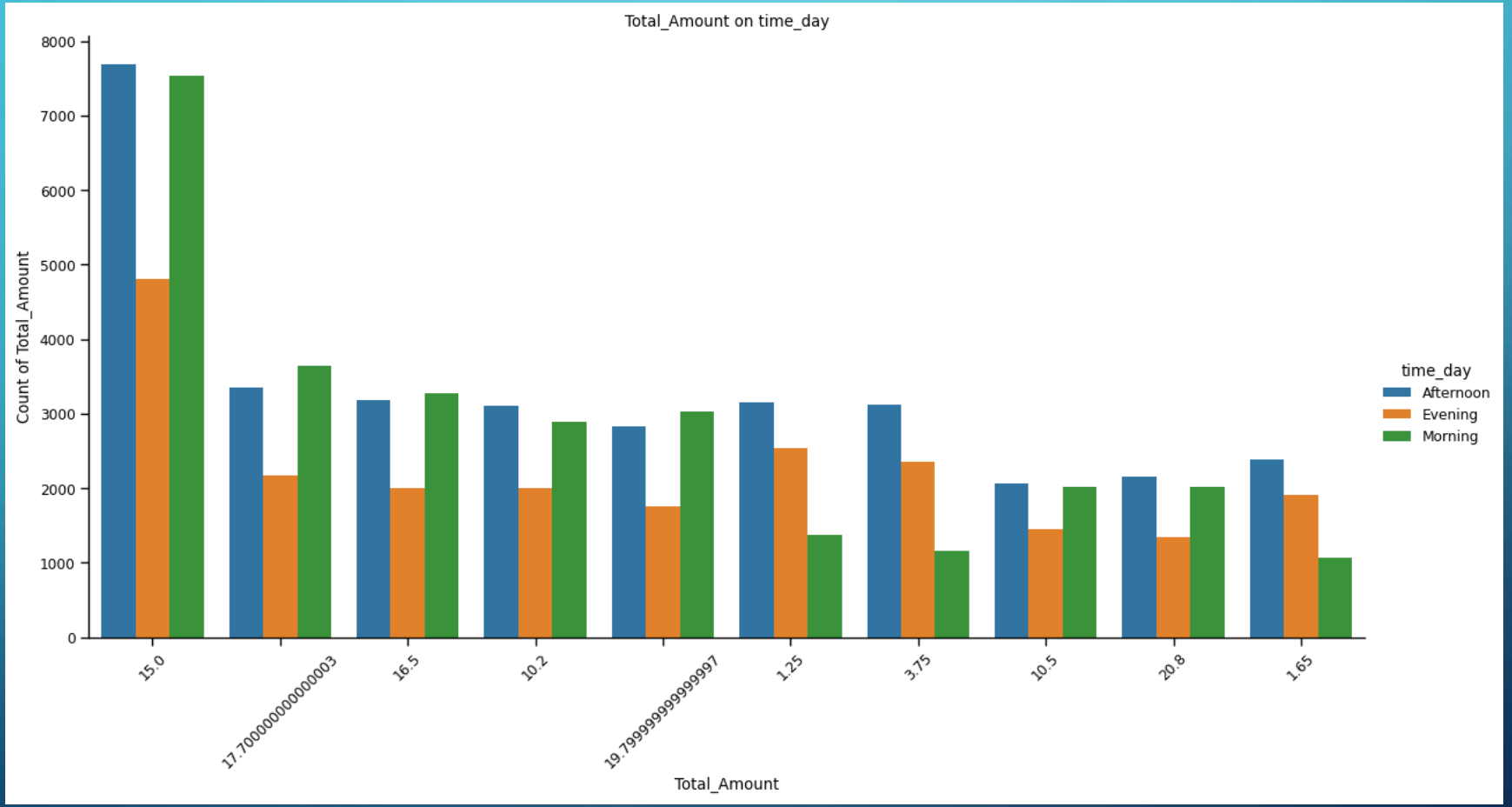
BIVARIATE ANALYSIS



TIME OF DAY


No of orders per top 10 time_day
count
160000
140000
120000
100000
80000
60000
40000
20000
0
Afternoon
Morning
Evening
time_day

AMOUNT VS TIME OF DAY



MODELING

- Memory_Based Model using Cosine and Pearson Similarity
- Collaborative Filtering - Using Surprise Library
- ❑ Evaluation RMSE

OUR COMPANY

Mercury, the closest and smallest planet in the Solar System, was named after the Roman messenger god, rather than the liquid metal of the same name. Mercury orbits the Sun at a relatively short distance as the innermost planet, yet its diminutive size sets it apart from its celestial neighbours. The choice of this moniker was not influenced by the chemical properties of the quicksilver-like substance, but rather pays homage to the swift-footed mythological figure associated with communication and commerce. Though sharing a common name, the planet Mercury and the metallic element have no direct connection, with the former's nomenclature stemming solely from its Roman mythological origins.

RECOMMENDATION

- The developed recommendation system will significantly benefit customers and e-commerce companies by providing personalised product suggestions based on user preferences and purchase history. It also addresses the product discovery challenge by highlighting relevant items, enhancing the shopping experience's enjoyment and efficiency. However, the recommendation engine can be further improved by utilising deep learning techniques and deep hybrid model-based recommendations, integrating various neural building blocks to create more powerful and expressive models.

DEPLOYMENT OF THE MODEL

THANK YOU