

FINAL REPORT

1. INTRODUCTION:

1.1. Project Overview:

"Cosmetic Insights" explores evolving consumer behaviour and emerging trends in the beauty and cosmetics industry. Using Tableau, the project visualizes key data on customer preferences, purchasing patterns, and market shifts. It leverages real-time dashboards to identify trend cycles, product demand, and target demographics. The insights aim to guide brands in making data-driven marketing and product decisions. The project emphasizes visual storytelling to uncover patterns not easily visible through raw data. Ultimately, it serves as a strategic tool for understanding what drives customer choices in a competitive market and makes a complete detailed conceptualization.

1.2. Purpose:

The purpose of this project is to gain a deeper understanding of customer trends and consumer behaviour within the cosmetics industry by leveraging the power of data visualization through Tableau. With the growing demand for personalized beauty products and rapidly shifting market preferences, it is essential for brands to stay ahead by analysing data-driven insights. This project aims to uncover key patterns in purchasing habits, product popularity, and demographic preferences, enabling businesses to make informed decisions about product development, marketing strategies, and customer engagement. By transforming complex data into interactive and visually compelling dashboards, the project empowers stakeholders to identify opportunities, predict future trends, and enhance their competitive edge in the ever-evolving beauty market and also to give a overview for customer to go through the top selling brands.

2.IDEATION PHASE:

2.1. Problem Statement:

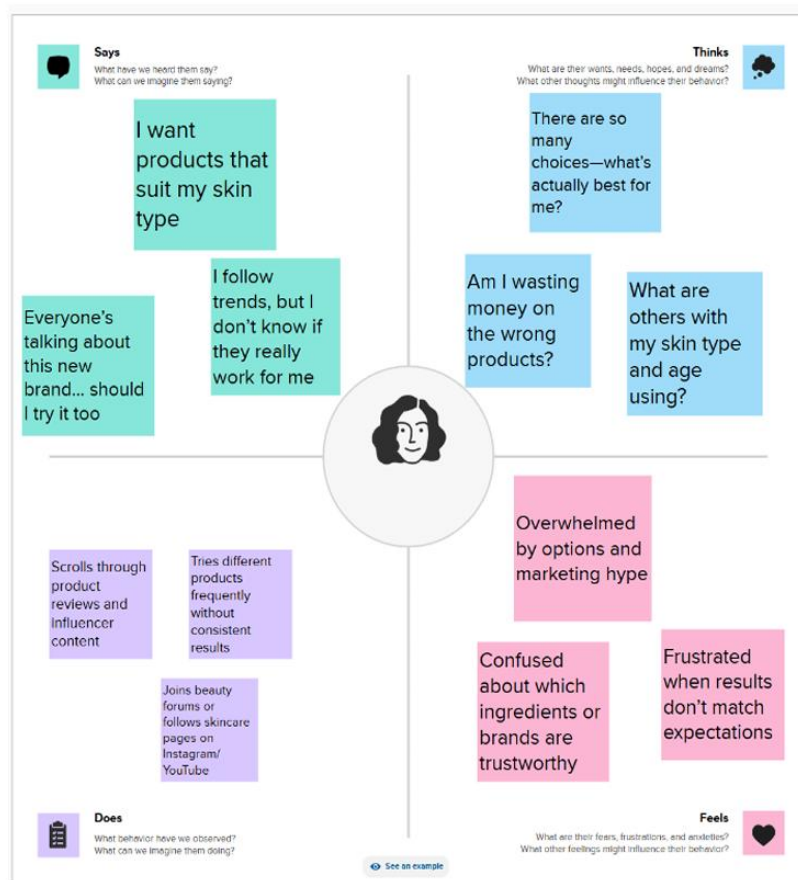
A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

I am	Describe customer with 3-4 key characteristics - who are they?	Describe the customer and their attributes here
I'm trying to	List their outcome or "job" the care about - what are they trying to achieve?	List the thing they are trying to achieve here
but	Describe what problems or barriers stand in the way - what bothers them most?	Describe the problems or barriers that get in the way here
because	Enter the "root cause" of why the problem or barrier exists - what needs to be solved?	Describe the reason the problems or barriers exist
which makes me feel	Describe the emotions from the customer's point of view - how does it impact them emotionally?	Describe the emotions the result from experiencing the problems or barriers

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A beauty-conscious consumer	Choose cosmetics that suit my skin & style	I get confused by too many products and marketing terms	I lack trusted, personalized data on what works for my skin and tone	Frustrated and unsure about what to buy
PS-2	A cosmetics brand analyst	Understand current consumer trends to guide product launches	I can't clearly interpret buying behaviour from scattered data sources	I lack a centralized dashboard that connects sales, reviews, and demographic insights	Overwhelmed and unable to make confident, data-driven decisions

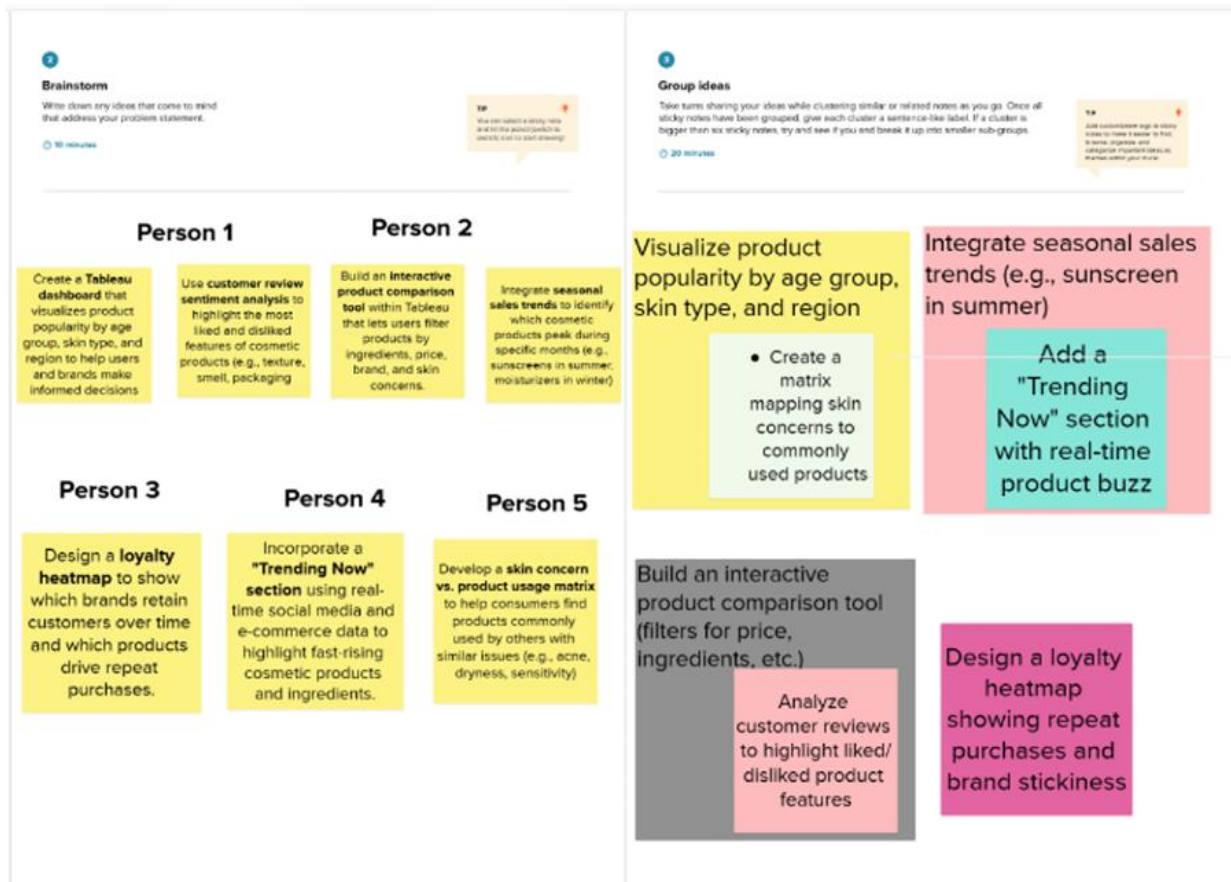
2.2. Empathy Map Canvas:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.



2.3. Brainstorming:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.



3.REQUIREMENT ANALYSIS:

3.1. Customer Journey Map:

The journey begins with users being curious about Tableau and the beauty industry, often inspired by dashboards or tutorials and emphasizes learning-by-doing, transitioning users from basic exploration to **storytelling with data** and **making strategic beauty-related insights**.

Customer Journey Map



3.2. Solution Requirement:

Following are the functional requirements of the proposed solution.

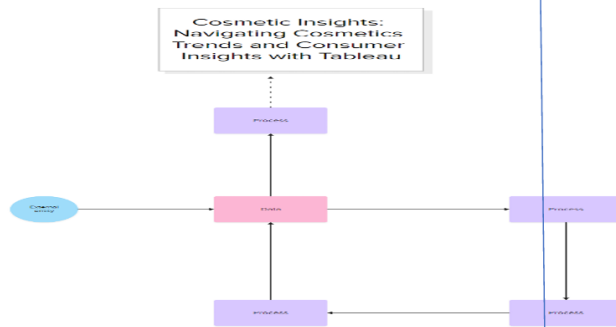
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Data Collection & Extraction	Downloading the dataset on cosmetics trends, consumer insights, and usage patterns.
FR-2	Collect the Dataset	Collect data from online sources (e.g., Kaggle, Statista, cosmetic product reviews, surveys).
FR-3	Connect Data with Tableau	Connect the dataset to Tableau Public/Desktop to enable visual analysis.
FR-4	Prepare the Data for Visualization	Prepare dataset by: 1. Cleaning 2. Collect the Dataset. Removing Nulls 3. Encoding fields 4. Assigning columns (e.g., Age, Region, Product Type, Usage Frequency)
FR-5	Data Visualizations	Create visualizations using Tableau for deep insights into cosmetic usage trends.
FR-6	No. of Unique Visualizations	Build the following visualizations: 1. Bar Chart - Product category popularity 2. Line Chart - Trend of skincare vs makeup 3. Pie Chart - Gender-based product use 4. Donut Chart - Spending by category 5. Bubble Chart - Product satisfaction vs price 6. Word Cloud - Most frequent ingredients 7. Area Chart - Usage by age group 8. Tree Map - Brand-wise market share 9. Packed Bubbles - Most purchased products

3.3. Data Flow Diagram :

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

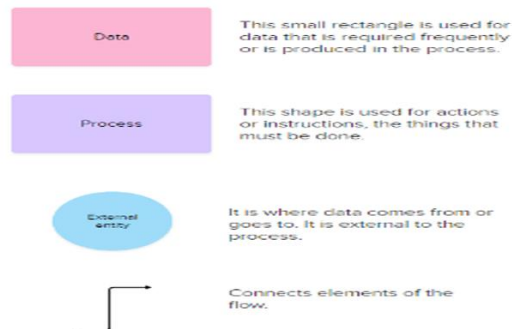
Example: [DFD](#)

Example: DFD Level 0 (Industry Standard)



Cosmetic Insights: Navigating Cosmetics Trends and Consumer Insights with Tableau

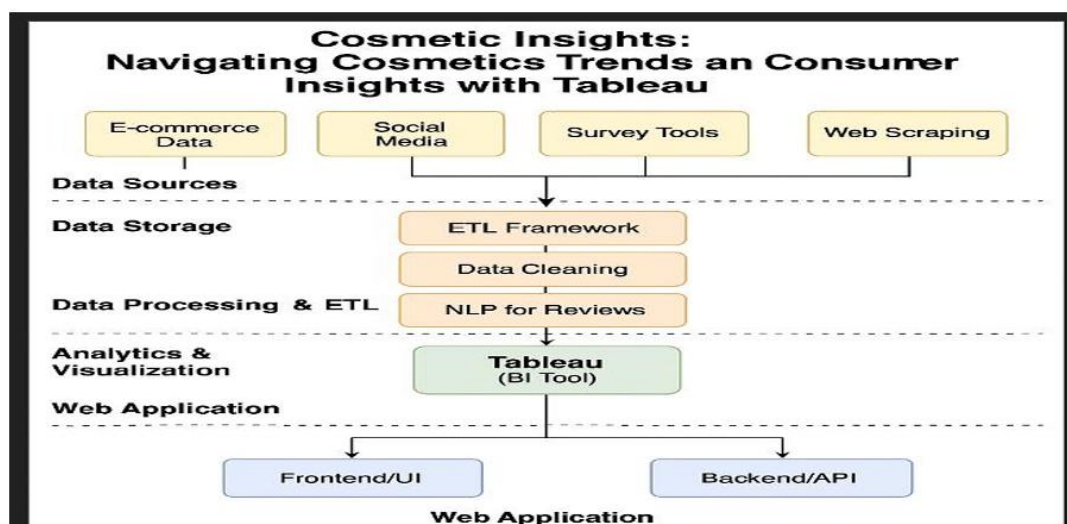
FLOW KEY



3.4. Technology Stack:

The technology stack for this project includes **Tableau** for data visualization and dashboard creation, and **Excel/CSV** as the primary data source formats. Additional tools like **Google Sheets** or **SQL databases** may be used for data preparation and integration.

Example: Cosmetic Insights: Navigating cosmetics Trends And Consumer Insights with Tableau



4. PROJECT DESIGN:

4.1. Problem Solution Fit:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioural patterns and recognize what would work.

Template:

1. CUSTOMER SEGMENT(S) CS <ul style="list-style-type: none"> Marketing teams at cosmetic c Product developers focused on skincare Retail analysts in Beauty & e-commerce platforms R&D teams exploring ingredient impact 	6. CUSTOMER CONSTRAINTS CC <ul style="list-style-type: none"> Limited Tableau/data skills Fragmented and unstructured data Lack of real-time insight tools Detected market gaps based on price-performance imbalance 	5. AVAILABLE SOLUTIONS BE <ul style="list-style-type: none"> Google Trends, social listening tools, influencer tracking Basic Excel analytics Consultant driven research reports (slow and costly) Relying on sales data alone (no ingredient level insights)
2. JOBS TO-BE-DONE / PROBLEMS JAP <ul style="list-style-type: none"> Understand which ingredients contribute to product popularity Match products to skin types (Dry, Oily, Combo, Sensitive) Detect market gaps based on price-performance imbalance Identify trends across brands or customer reviews 	7. PROBLEM ROOT CAUSE RC <ul style="list-style-type: none"> Too much unstructured product/ingredient data No linkage between ingredients and performance No skin type-based product intelligence Teams making decisions based on gut or stale reports 	6. BEHAVIOUR BE <ul style="list-style-type: none"> Browsing reviews for product/ingredient data Comparing product ranks manually Searching social media for ingredient trends (e.g.) (Sitali Mocrn, Rehmy) Filtering products based on skin concerns
7. TRIGGERS TP <ul style="list-style-type: none"> Which triggers customers to act? i.e. seeing their neighbors installing solar panels; reading about a more efficient solution in the news 	8. YOUR SOLUTION SL <ul style="list-style-type: none"> A Tableau dashboard aggregating ingredient, price, rank, and skin type data Users can: <ul style="list-style-type: none"> Filter product-compatibility Compare price vs. rating Track ingredient presence and performance 	8. CHANNELS OF BEHAVIOUR CH <ul style="list-style-type: none"> YouTube reviews, TikTok skincare influencers Reddit forums (//SkincareAddiction) Brand websites and e-commerce filters
8. EMOTIONS, BEFORE / AFTER OIM/ <ul style="list-style-type: none"> How do customers feel when they face a problem or job and afterwards? i.e. "I was stressed, but now I'm confident in control" = use it in your communication strategy 	8. BEFORE: Overwhelmed, guessing trends, reactive AF AFTER insight driven, confident, data backed decisions	8.1 ONLINE CH <ul style="list-style-type: none"> YouTube reviews, TikTok skincare influencers Reddit forums (//SkincareAddiction) Brand websites and e-commerce filters

4.2. Proposed Solution:

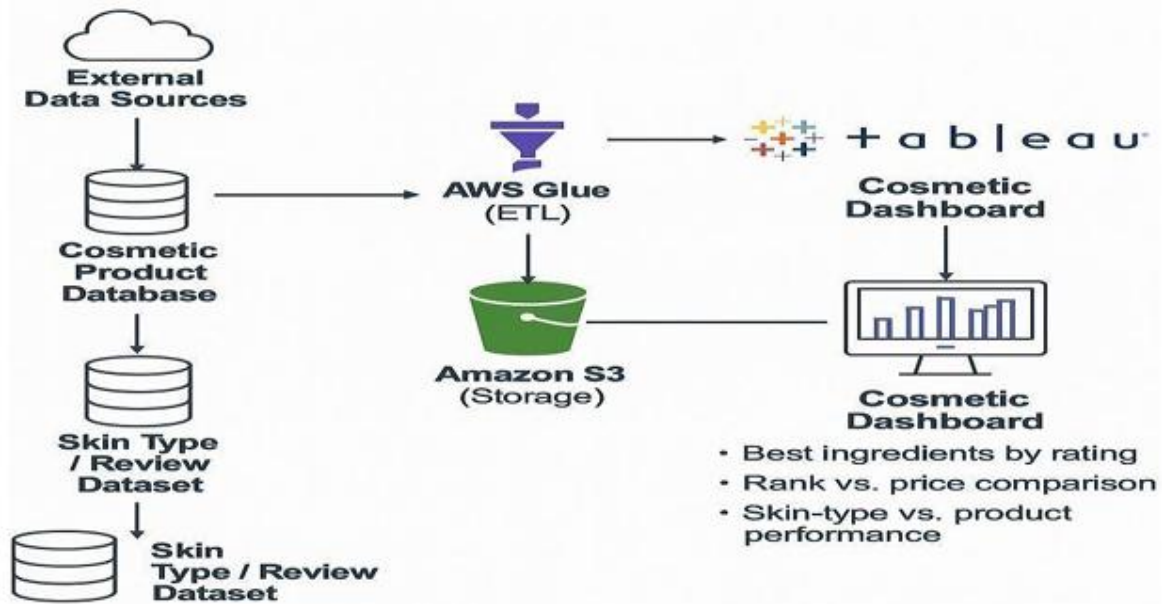
The proposed solution is to create interactive Tableau dashboards that visualize customer trends, preferences, and product insights in the cosmetics industry.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	It is hard to track which cosmetics are popular and what customers like.
2.	Idea / Solution description	We will use Tableau to create dashboards showing top products, sales, and customer choices.
3.	Novelty / Uniqueness	Our idea shows live data in a visual way, making it easy to understand trends.
4.	Social Impact / Customer Satisfaction	Companies can use this to make better products that match what people want.
5.	Business Model (Revenue Model)	We can sell this dashboard as a tool to cosmetic companies or charge for insights.
6.	Scalability of the Solution	This can be used for more data in future or for other products like skincare or fashion.

4.3. Solution Architecture:

Find the best tech solution to solve existing business problems. Describe the structure, characteristics, behaviour, and other aspects of the software to project stakeholders. Define features, development phases, and solution requirements. Provide specifications according to which the solution is defined, managed, and delivered.

Example - Solution Architecture Diagram:



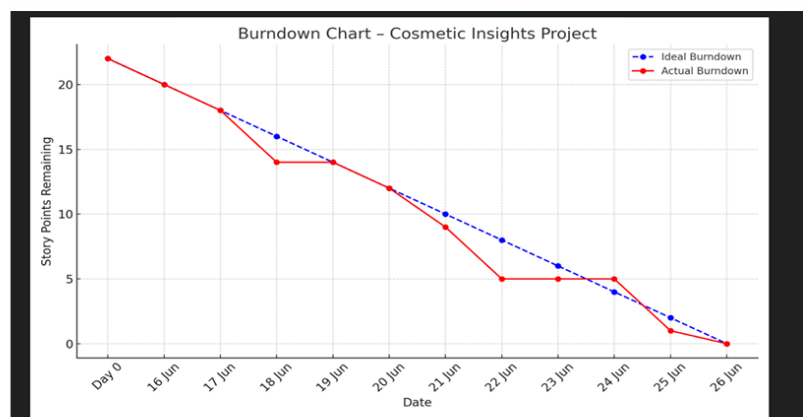
5. PROJECT PLANNING & SCHEDULING:

5.1. Project Planning:

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed	Sprint Release Date (Actual)
Sprint-1	8	16 June 2025	18 June 2025	8	18 June 2025
Sprint-2	5	19 June 2025	22 June 2025	5	22 June 2025
Sprint-3	4	23 June 2025	25 June 2025	4	25 June 2025
Sprint-4	5	25 June 2025	26 June 2025	5	26 June 2025

Burndown Chart:



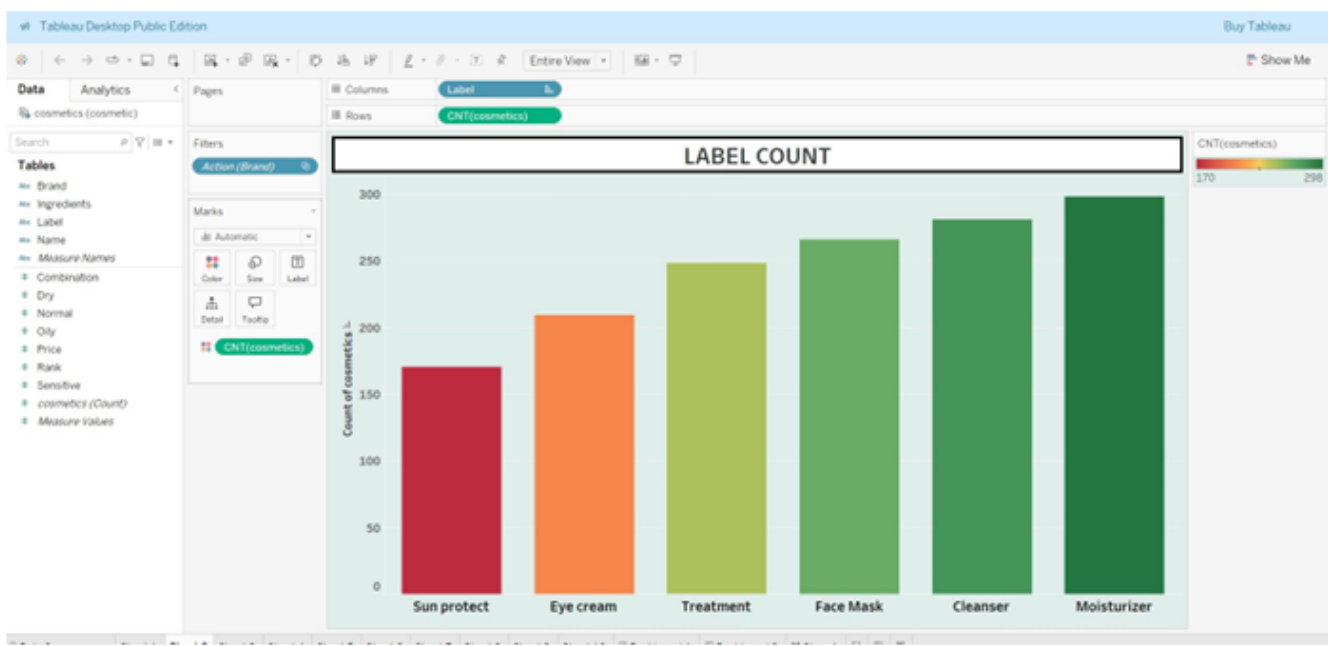
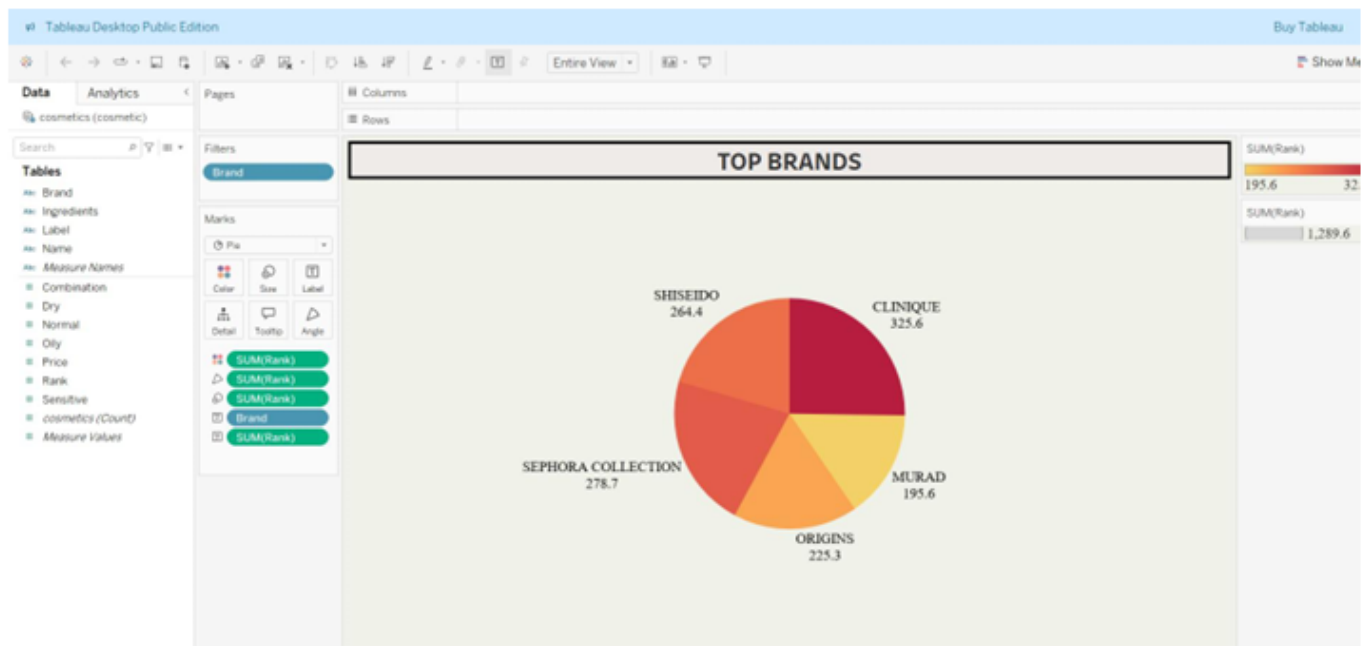
6. FUNCTIONAL AND PERFORMANCE TESTING:

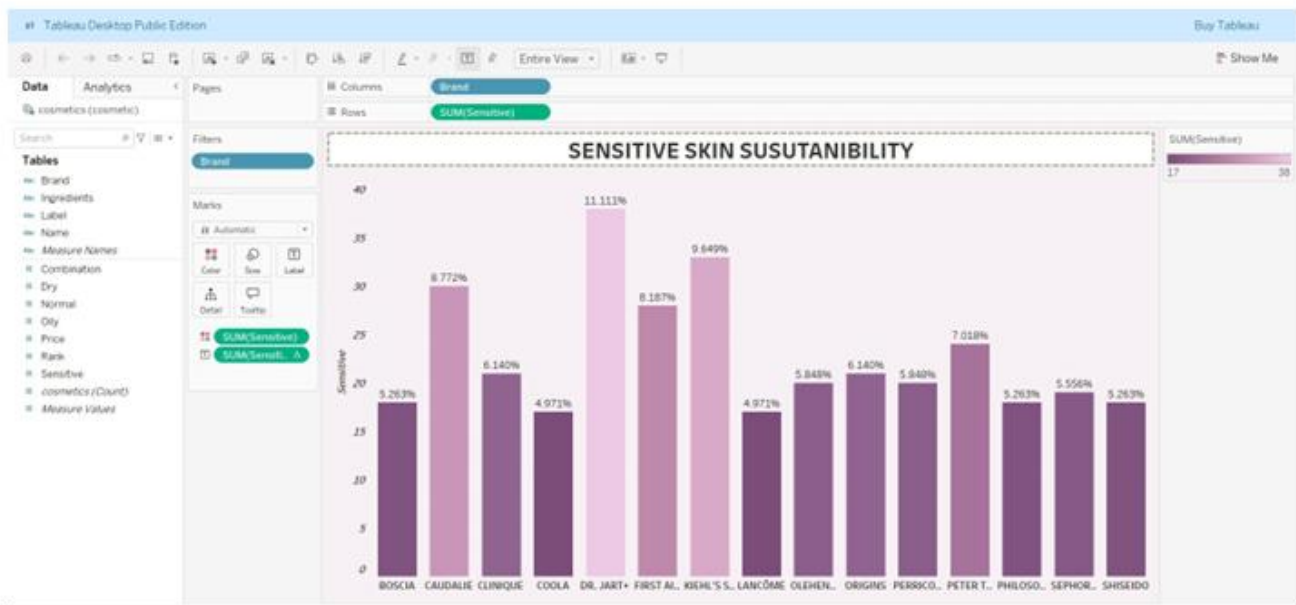
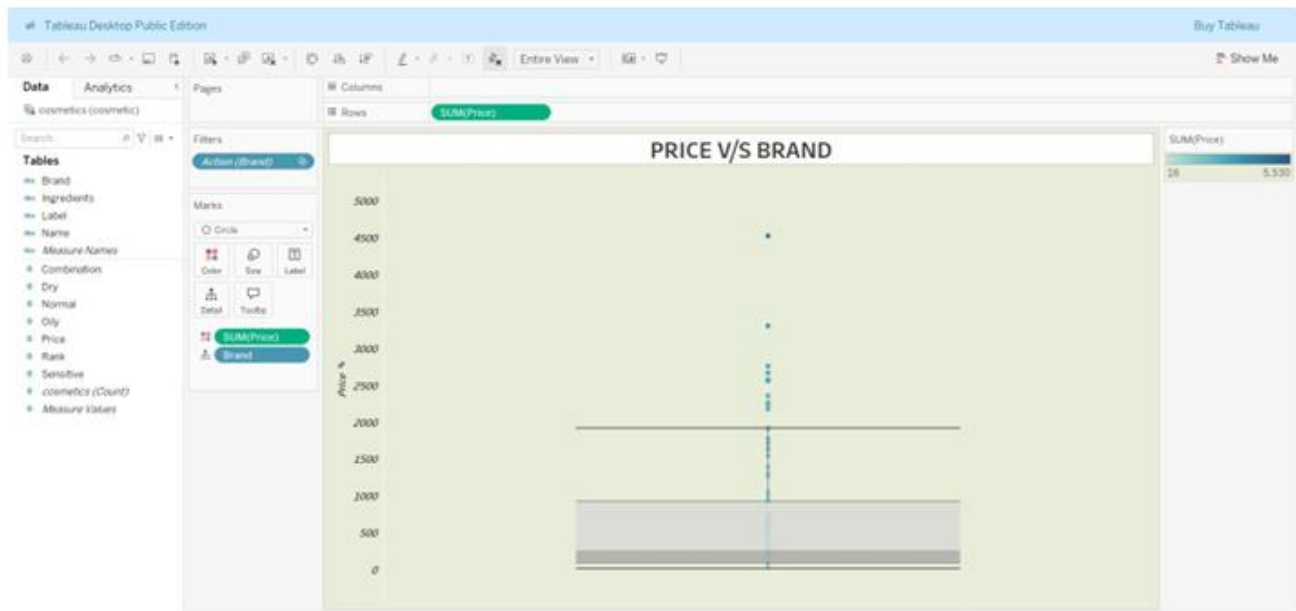
6.1. Performance Testing:

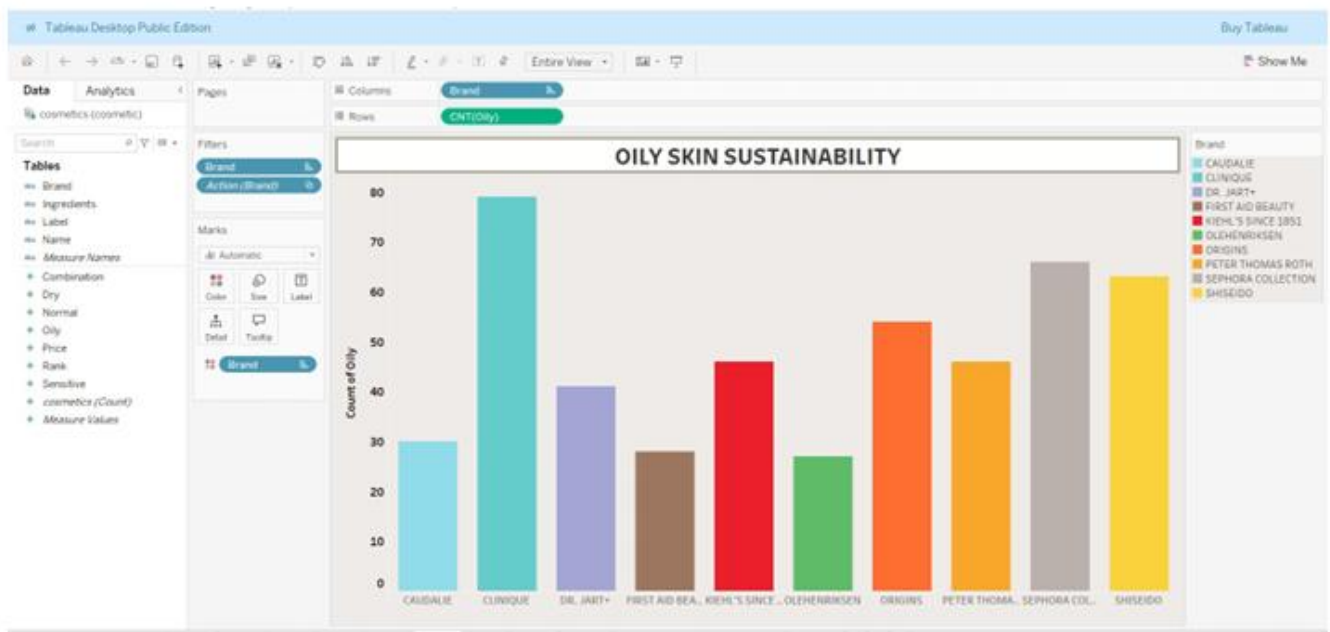
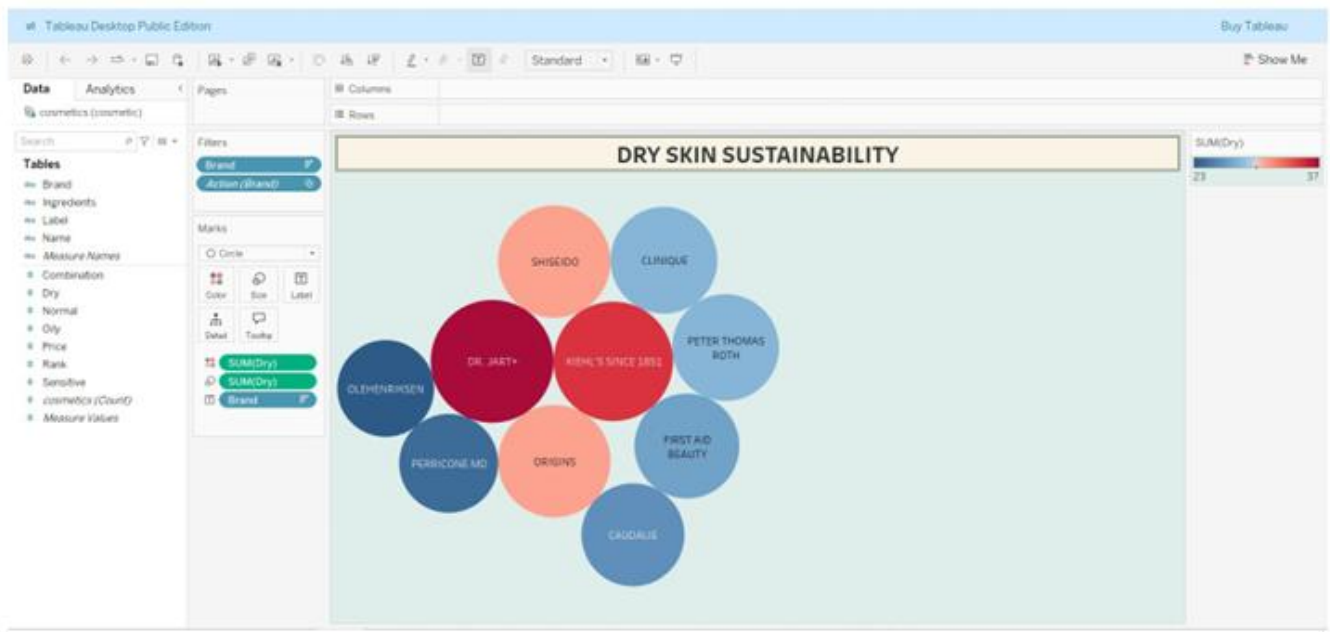
S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Cosmetic sales data including Product Type, Gender, Category, Date, Units Sold, and Profit.
2.	Data Preprocessing	Cleaned missing values, changed data types, renamed columns, and created date hierarchies (year, month).
3.	Utilization of Filters	Filters used: Gender, Category, Product Type, Year, and Month to analyze sales behavior..
4.	Calculation fields Used	<div>Total Sales = Units Sold × Price</div> <ul style="list-style-type: none">Profit MarginSales Growth (%)Average Units Sold per Product
5.	Dashboard design	<div>1. Sales by Category</div> <div>2. Monthly Trend</div> <div>3. Top Products</div> <div>4. Profit by Gender</div> <div>5. Units Sold by Region</div>

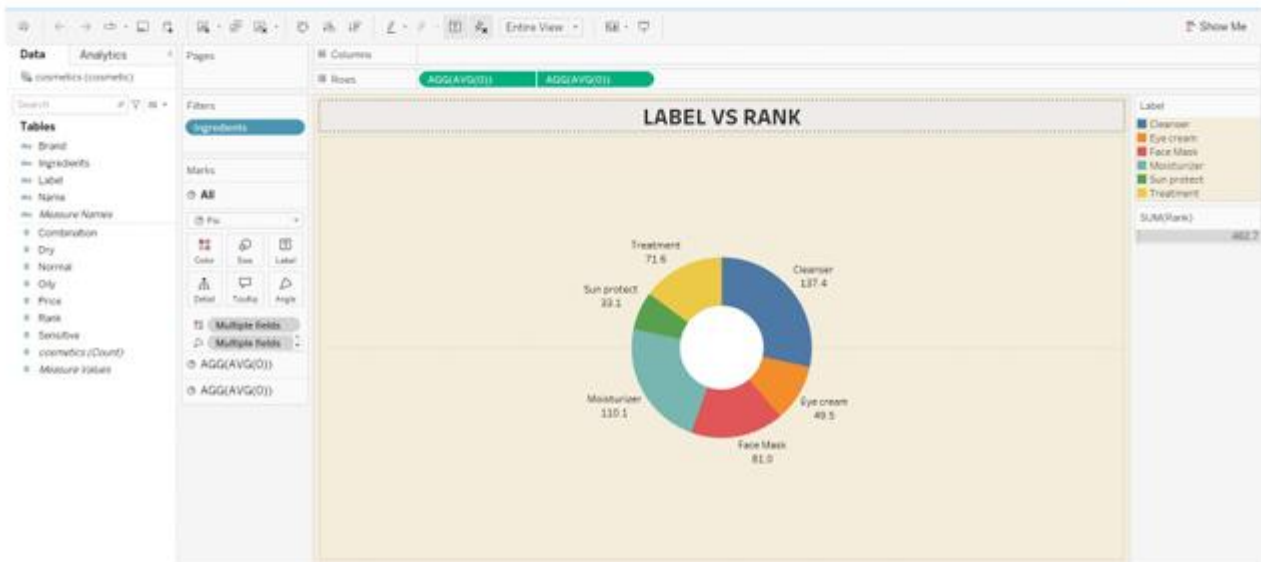
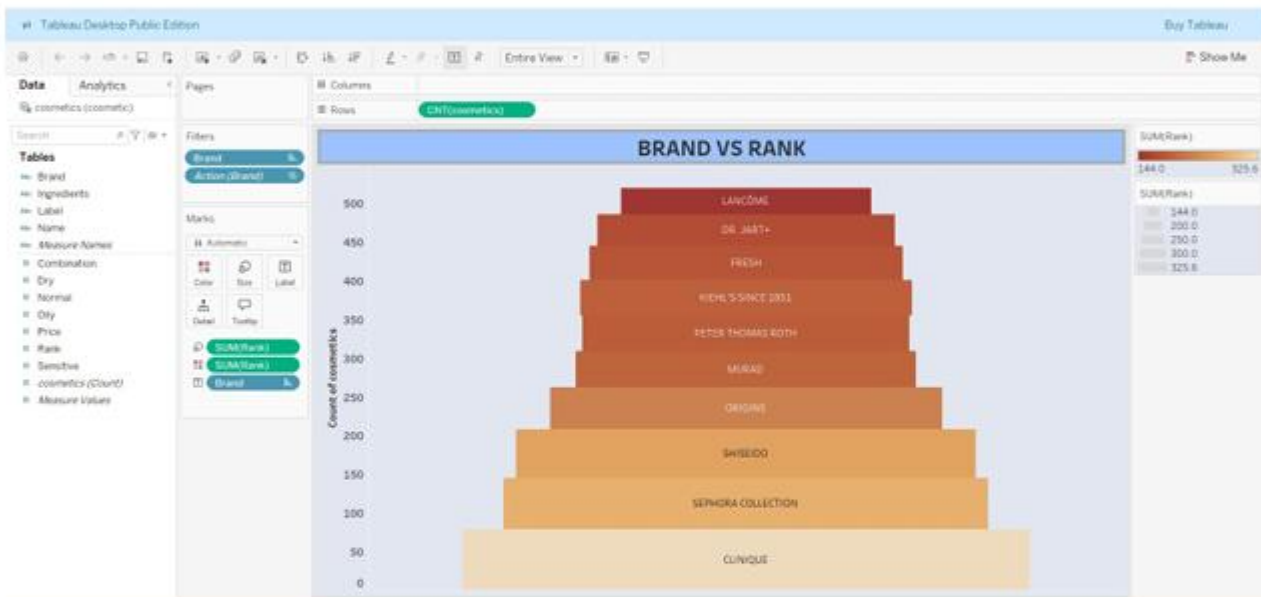
7.RESULTS:

7.1. Output Screenshots:









8.ADVANTAGES & DISADVANTAGES:

Here are the **advantages and disadvantages** of "*Cosmetic Insights – Navigating Customer Trends and Consumer Insights with Tableau*":

Advantages:

1. **Data-Driven Decisions:** Helps cosmetic brands understand customer preferences and trends for better marketing and product strategies.
2. **Interactive Dashboards:** Tableau provides dynamic visualizations that make complex data easy to interpret.
3. **Time-Saving Analysis:** Reduces manual effort in analyzing customer data through automation and visual insights.
4. **Scalable Insights:** Can be extended to include more datasets like social media trends, reviews, or sales.
5. **User-Friendly Interface:** Tableau's drag-and-drop functionality makes it accessible even for non-technical users.

Disadvantages:

1. **Data Dependency:** The accuracy of insights depends on the quality, completeness, and freshness of the data used.
2. **Limited Customization Without Coding:** Tableau has some limitations when highly customized analytics or logic is needed.
3. **Learning Curve:** Beginners may initially find Tableau and data blending concepts difficult to grasp.
4. **Tool Licensing Costs:** Tableau's full version can be expensive for individuals or small teams.
5. **Not a Full Analytics Platform:** Tableau focuses on visualization and may need integration with other tools for advanced analytics or machine learning.

9. CONCLUSION:

Conclusion of the Project:

The "*Cosmetic Insights – Navigating Customer Trends and Consumer Insights with Tableau*" project successfully demonstrates how data visualization can uncover valuable patterns in consumer behaviour within the cosmetics industry. By leveraging Tableau, the project transforms raw data into actionable insights, helping brands understand customer needs, predict market trends, and make informed decisions. It emphasizes the importance of visual storytelling in driving strategic outcomes, ultimately empowering businesses to stay competitive in a fast-evolving beauty market.

10. FUTURE SCOPE:

Future Scope of the Project:

1. **Integration with Real-Time Data:** Incorporating live sales, social media sentiment, and customer feedback for up-to-date insights.
2. **Predictive Analytics:** Using machine learning models to forecast future cosmetic trends and customer purchasing behaviour
3. **Personalization Dashboards:** Creating customized insights for different customer segments based on age, skin type, or region.
4. **Mobile-Friendly Dashboards:** Enhancing dashboard accessibility for mobile users to support on-the-go decision-making.
5. **Expansion to Global Markets:** Analysing international consumer trends to support global marketing strategies.

11.APPENDIX:

Data set link:

<https://www.kaggle.com/datasets/kingabzpro/cosmetics-datasets>

Github link:

Project Demo Link:

https://drive.google.com/file/d/1-0I3U2E-5hU5X_zMOabH2alyzr7ADk8X/view?usp=drivesdk