

**Project Design Phase**  
**Solution Architecture**

|               |  |
|---------------|--|
| Date          | 15 February 2025   |
| Team ID       | LTVIP2025TMID48516   |
| Project Name  | Cosmetic Insights : Navigating Cosmetics Trends and Consumer Insights with Tableau project |
| Maximum Marks | 4 Marks  |

**Solution Architecture:**

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, 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.

**KEY ASPECTS OF YOUR SOLUTION ARCHITECTURE**

**1. User Layer (Entry Point)**

- Users include:

Cosmetic consumers: use filters to discover products

Marketers analyze trends and user behavior Interact via a simple, responsive web

interface with embedded Tableau dashboard

**2. User Interface (Frontend) Technologies:** HTML, CSS, Bootstrap, JavaScript

- Features:

Filters: skin type, budget, brand, rating

Search and comparison interface

Embedded Tableau dashboards for data visuals

**3. Application Layer (Backend). Technologies:** Python (Flask/Streamlit) JavaScript (Node.js)

- Functions

Pass user inputs (filters) to Tableau

Handle login/auth (if used)

Process and fetch data from review/product databases submission

#### **4. Visualisation Layer (Dashboard)**

- Tool: Tableau Public or Tableau Server o Displays

Top trending cosmetic product

Charts by skin type, rating, region, category

Comparison visuals for price, review score, ingredients

#### **5. Data Sources**

- Sources:

Product Data: CSV/MYSQL/ Google Sheets

Review Data: Customer ratings & feedback o Features

Structured datasets allow filtering and charting Can be updated regularly or live connected

#### **6. Feedback Engine (Optional)**

- Collects product ratings/reviews from users o Stores in review repository
- Feeds into Tableau to update user satisfaction visuals

#### **7. Hosting & Storage**

- Tableau Public: for hosting dashboards • GitHub Pages / Herokuz for web app or frontend. Google Drive / Firebase for storing files and datasets

#### **8. Datu Flow**

. User UI- Backend-Tableau-Visualization

- Optionally, Feedback-Stared-Updates Dashboard

#### **9. Scalability**

- Add more product datasets

- Support multi-category expansion skincare, makeup, fragrance. Add AI/ML trend prediction module in future

## 10. Security (Optional/Advanced)

- OAuth for secure login (Google, LinkedIn)
- Backend validation for data inputs and review authenticity

### Example - Solution Architecture Diagram:

