

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	31 January 3035
Team ID	LTVIP2026TMIDS79606
Project Name	cosmetic insights : navigating cosmetics trends and consumer insights with tableau
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>

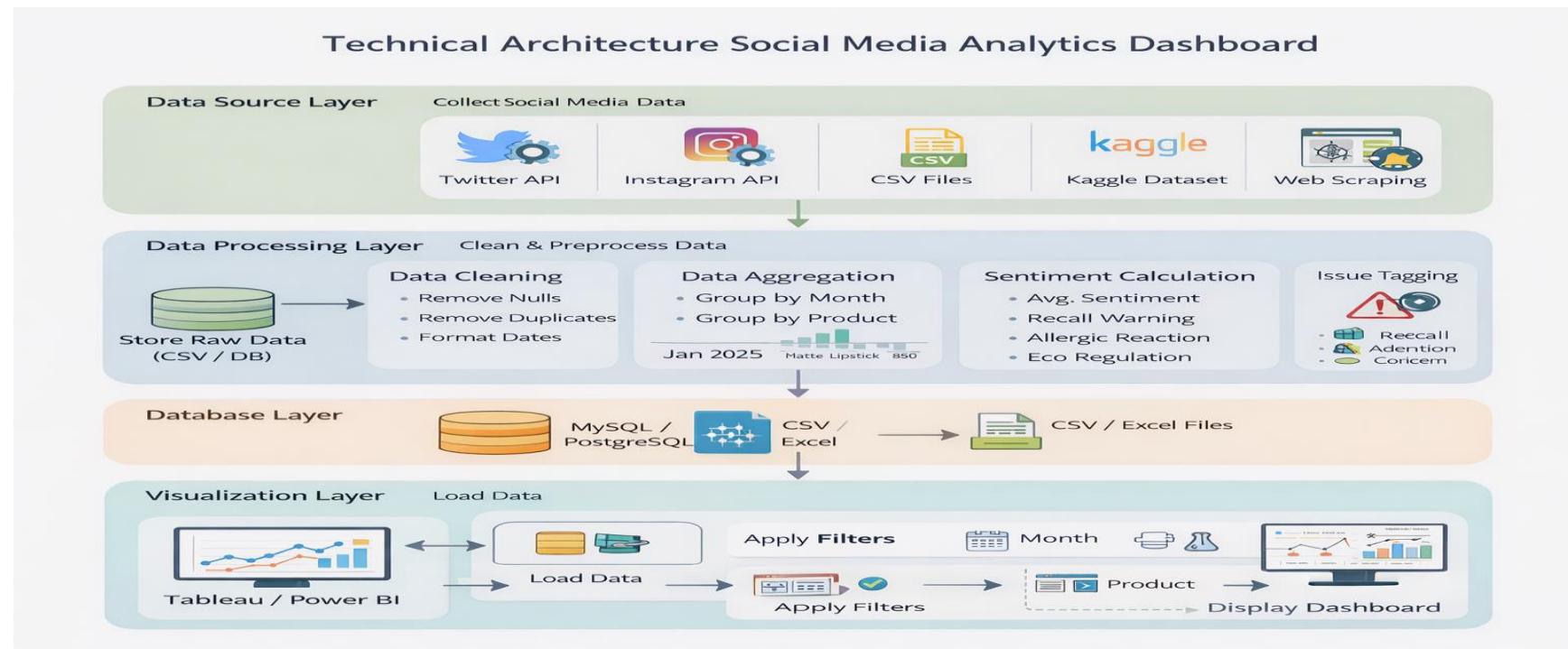


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Dashboard for Brand Managers/Stakeholders	Tableau
2.	Application Logic-1	Data ingestion of Sales & Sentiment CSVs	Python (Pandas)
3.	Application Logic-2	Sentiment Analysis & Keyword Extraction	IBM Watson NLU
4.	Application Logic-3	Predictive Trend Modeling	IBM Watson Studio
5.	Database	Product listings and ingredient safety logs	PostgreSQL

6.	Cloud Database	Historical sentiment repository	IBM Db2 on Cloud
7.	File Storage	Raw feedback audio and image scans	IBM Cloud Object Storage
8.	External API-1	Social Media Trends	REST APIs (JSON)
9.	Machine Learning Model	Regulatory Safety Feeds (FDA/ECHA)	SOAP/XML
10.	Infrastructure (Server / Cloud)	Ingredient success prediction	Scikit-learn / Watson AutoAI

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Data cleaning and visual mapping	Pandas, Apache Tika, D3.js
2.	Security Implementations	GDPR-compliant consumer data handling	OAuth 2.0, AES-256
3.	Scalable Architecture	Microservices for handling high-volume trends	Kubernetes + Istio
4.	Availability	Multi-zone deployment for 24/7 monitoring	IBM Cloud Load Balancer
5.	Performance	Cached trend results for real-time interaction	Redis / Akamai CDN

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>