

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

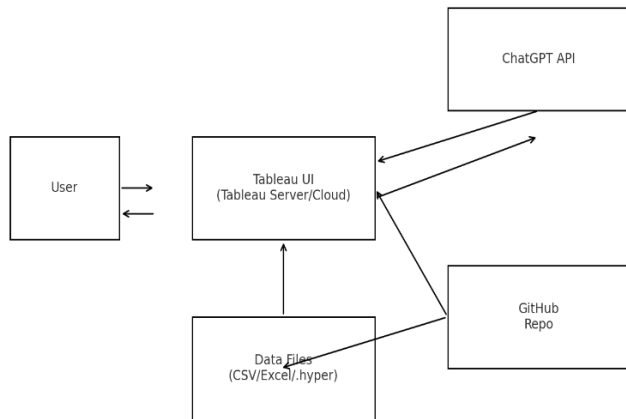
Date	28 June 2025
Team ID	LTVIP2025TMID47440
Project Name	Cosmetic-Insights-Navigating-Cosmetics-Trends-and-Consumer-Insights-with-Tableau
Maximum Marks	4 Marks

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/>



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Interactive dashboards for exploring cosmetic trends and product Insights	Tableau Public / Tableau Server
2.	Application Logic-1	Data prep, cleaning, joins, basic calculations before visualising	Tableau Prep
3.	Application Logic-2	Natural-language processing of reviews, auto-summarises, insight generation	ChatGPT (API, GPT-4-o)
4.	Application Logic-3	Chat-based query assistant for insights and explanations	OpenAI ChatGPT API
5.	Database	Source data files (CSV/Excel/-hyper extracts) tracked in version control	GitHub repository
6.	Cloud Database	Cloud repository for multi-user access and analytics	
7.	File Storage	Dashboard (.twbx), data files, and documentation	GitHub / Google Drive / Tableau Cloud
8.	External API-1	Language model API for text analytics and chat	OpenAI ChatGPT API

9.	External API-2	N/A	N/A
10.	Machine Learning Model	Large-language model powering sentiment extraction and Q&A	GPT-4-o via OpenAI API
11.	Infrastructure (Server / Cloud)	Hosting and CI/CD for dashboards and code; collaboration platform	Tableau Cloud + GitHub Actions

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Version control & collaboration	Git, GitHub (OSS)
2.	Security Implementations	Private GitHub repos, Tableau role-based permissions, GitHub keys	Git, GitHub, Tableau RLS, OpenAI keys
3.	Scalable Architecture	Tableau Cloud scales dashboards; ChatGPT horizontal scaling; OpenAI API	Tableau Cloud, OpenAI managed infra
4.	Availability	24×7 service uptime from Tableau Cloud & OpenAI	Tableau Cloud SLA, OpenAI SLA, GitHub
5.	Performance	Extract-based dashboards, Hyper engine; prompt caching for ChatGPT	Tableau, GitHub