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

Date	03 July 2025
Team ID	LTVIP2025TMID51129
Project Name	ToyCraft Tales : tableau Vision into Toy Manufacturer Data
Maximum Marks	4 Marks

Technical Architecture:

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

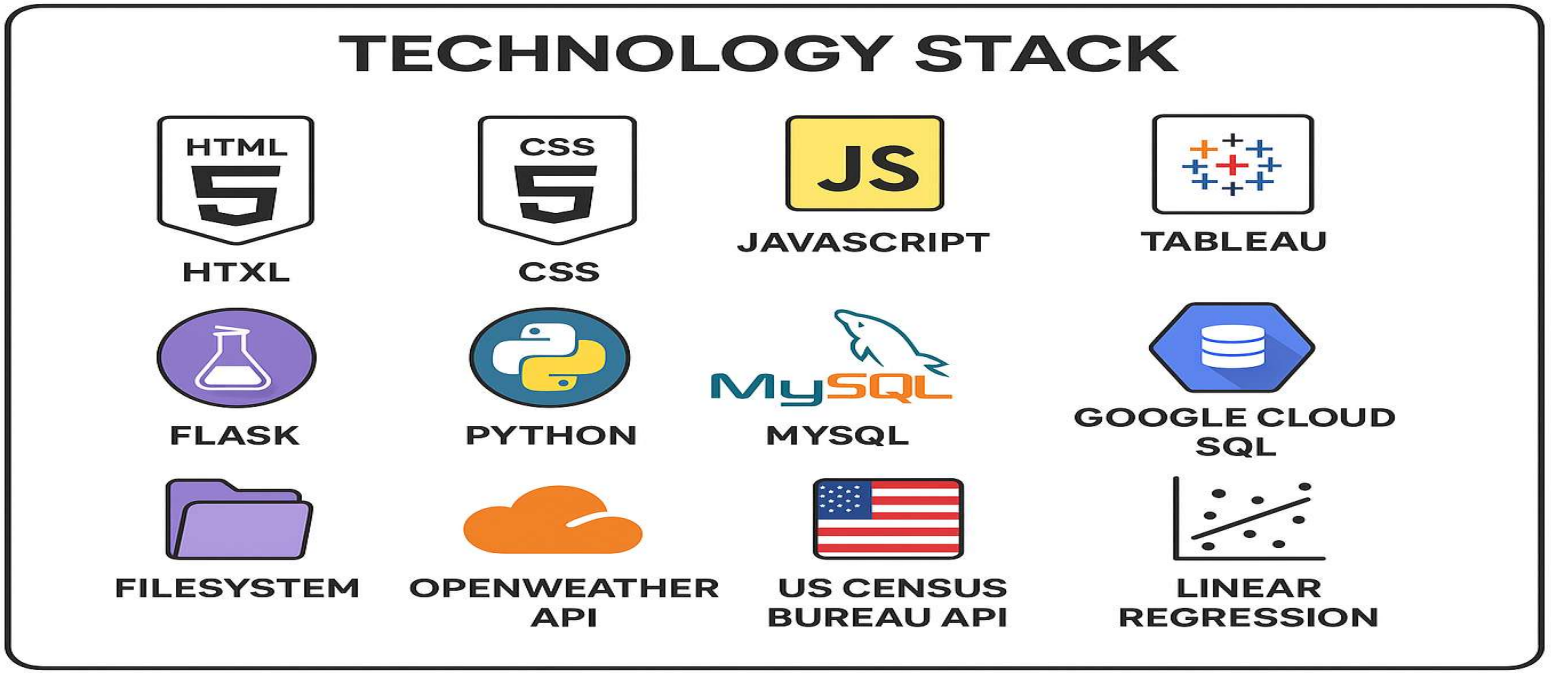

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Web UI to interact with dashboard and filters	HTML, CSS, JavaScript, Tableau Web View
2	Application Logic-1	Backend to fetch and process data	Python (Flask Framework)
3	Application Logic-2	Dashboard & story logic hosted in Tableau	Tableau
4	Application Logic-3	Web server handling routing and rendering	Flask
5	Database	Structured data storage for manufacturers & index	MySQL
6	Cloud Database	Optional for remote hosting of data	Google Cloud SQL (MySQL)
7	File Storage	Storage of dashboard exports, CSVs	Local Filesystem / Google Drive
8	External API-1	Future integration for forecasting or weather-based insights	OpenWeather API (Optional)
9	External API-2	For demographic insights or census data	US Census Bureau API (Optional)
10	Machine Learning Model	Optional for trend prediction	Linear Regression / Time Series (planned extension)
11	Infrastructure (Server / Cloud)	Deployment via local server and optional cloud hosting	Flask on Localhost / Google Cloud App Engine

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Flask, MySQL, Python, Tableau Public	Python, Flask, MySQL, Tableau

S.No	Characteristics	Description	Technology
2	Security Implementations	Password protection for database, Flask route controls	SHA-256, Access Controls, MySQL User Privileges
3	Scalable Architecture	Separation of dashboard, backend, and DB makes it scalable	3-tier architecture
4	Availability	Can be deployed on cloud for 24/7 access	Google Cloud / Web Host with Auto Restart
5	Performance	Optimized queries, cached results, efficient dashboard rendering	SQL Indexing, Tableau extract, Flask optimization

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