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

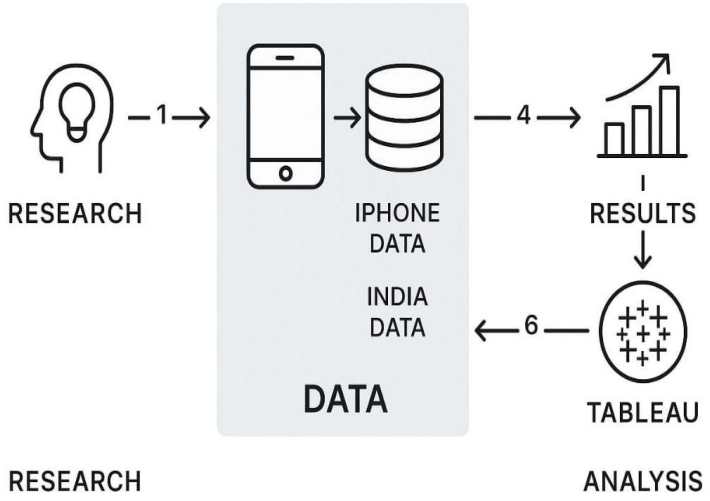
Date	31 January 3035
Team ID	LTVIP2025TMID51628
Project Name	iRevolution: A Data-driven Exploration of Apple's iPhone Impact in India using Tableau
Maximum Marks	4 Marks

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	Web dashboard and mobile views	HTML, CSS, Streamlit, React
2.	Application Logic-1	Data processing and transformation	Python, pandas
3.	Application Logic-2	Data visualization logic	Tableau, Plotly
4.	Application Logic-3	Search and filter engine	Custom Python functions
5.	Database	Stores raw and processed datasets	MySQL, SQLite
6.	Cloud Database	Cloud-based structured storage	Google Cloud SQL
7.	File Storage	Uploads of CSVs, PDFs, images	Google Drive API, Local Filesystem
8.	External API-1	Fetch smartphone market data	Statista API
9.	External API-2	Retrieve geographical distribution	Google Maps API
10.	Machine Learning Model	Sales prediction or trend analysis	scikit-learn
11.	Infrastructure (Server / Cloud)	Hosted on cloud / local server	Streamlit Cloud, Localhost, Heroku

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Uses modern open frameworks for visualization	Streamlit, pandas, Plotly

S.No	Characteristics	Description	Technology
		and backend	
2.	Security Implementations	Data privacy and access control for dashboards	OAuth 2.0, SSL, IAM
3.	Scalable Architecture	Scalable via modular Streamlit apps or Tableau dashboards	Microservice-inspired, API-based
4.	Availability	Accessible on multiple devices and hosted reliably	Streamlit Cloud, Tableau Public
5.	Performance	Optimized dashboards and queries, light UI	CDN for assets, data caching

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