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

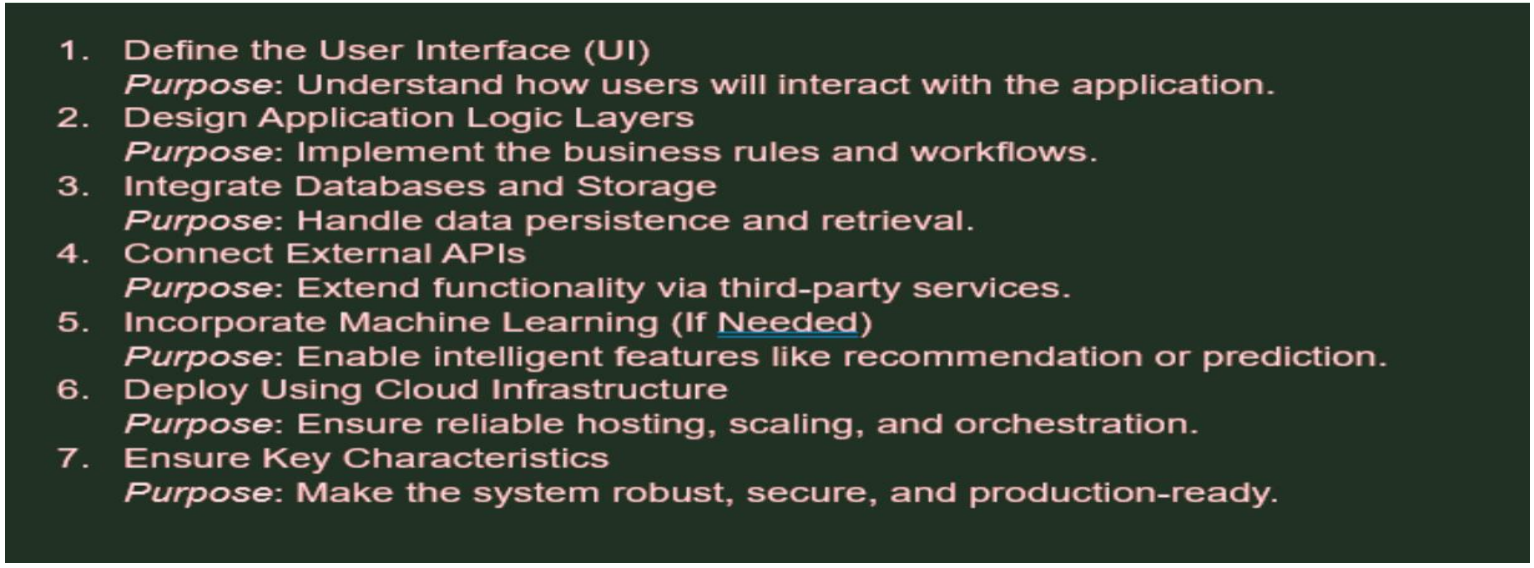
Date	23-06-2025
Team ID	LTVIP2025TMID47723
Project Name	Strategic Product Placement Analysis: Unveiling Sales Impact with Tableau Visualization
Maximum Marks	4 Marks

Technical Architecture:

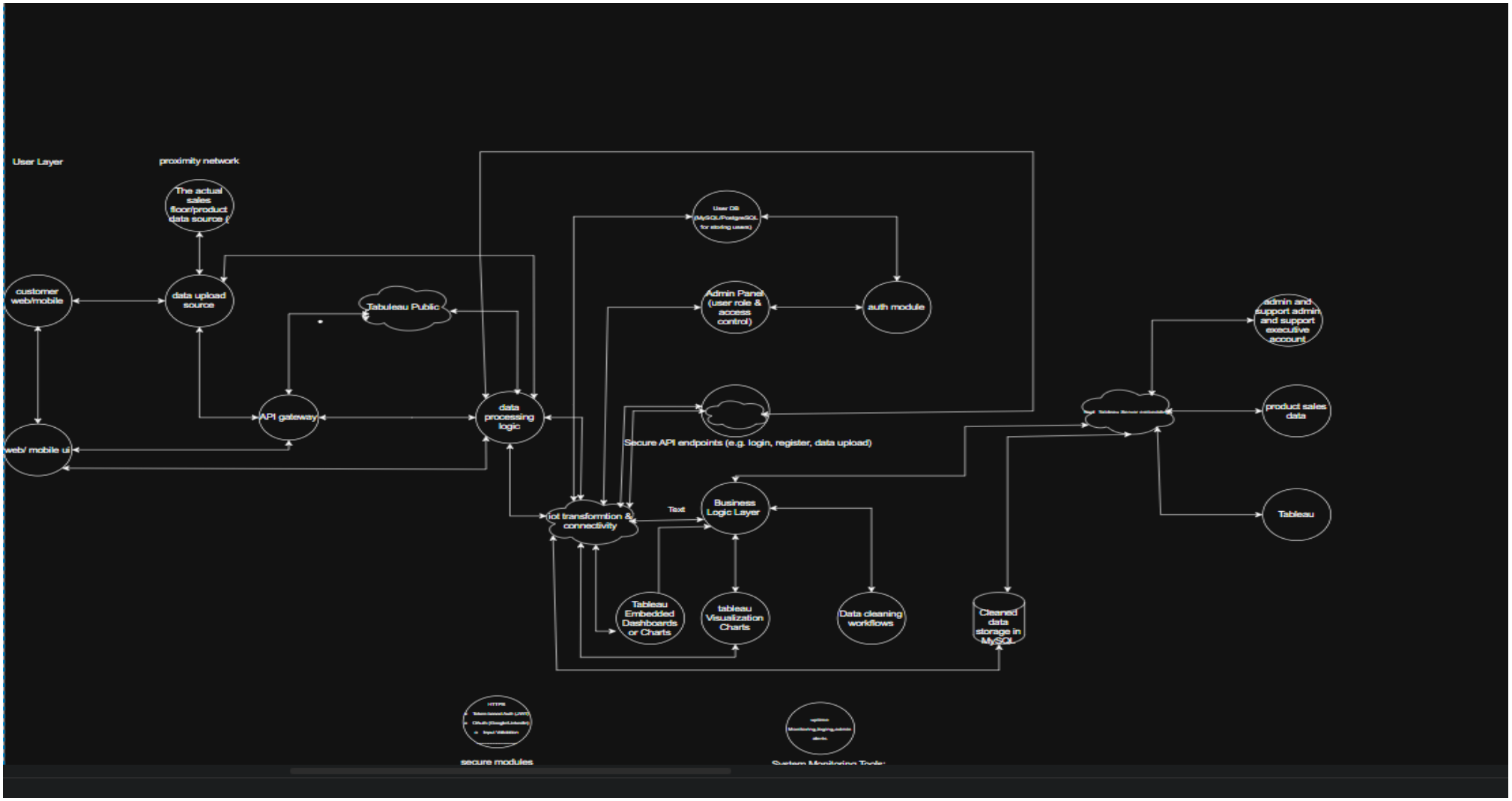
The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Guidness of the procedure:



Infrastrcuture:



S.No	Component	Description	Technology
1	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2	Application Logic-1	Business logic layer responsible for handling user requests and UI actions	Node.js, Express.js, Spring Boot, Flask etc.
3	Application Logic-2	Handles processing, transformation, and coordination among services	Python, Java, .NET, Microservices architecture
4	Application Logic-3	Specialized service like analytics, recommendation, etc.	Spark, Kafka, Custom services etc.
5	Database	Stores structured data for the application	MySQL, PostgreSQL, Oracle, SQL Server
6	Cloud Database	Cloud-based database service	Amazon RDS, Firebase, Google Cloud SQL, Cosmos DB
7	File Storage	Stores unstructured data like images, PDFs, documents	Amazon S3, Google Cloud Storage, Azure Blob Storage
8	External API-1	Third-party service integration	Google Maps API, Payment Gateway (Stripe, PayPal)
9	External API-2	Additional external services	Weather API, Social Media API
10	Machine Learning Model	Model used for predictions or recognition	TensorFlow, PyTorch, Scikit-learn, Object Recognition
11	Infrastructure	Hosting and orchestration of services	Local server, Kubernetes, Docker, Cloud Foundry, AWS

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology/Approach
1	Scalability	Ability to handle growth in users, data, or transactions	Load Balancing, Auto-scaling, Microservices
2	Availability	System readiness and uptime for use	Multi-zone Deployment, Failover, Redundancy
3	Performance	Speed and responsiveness of the system	Caching (Redis), CDN, Load Testing Tools (JMeter)
4	Security	Protection against unauthorized access and data breaches	OAuth 2.0, JWT, HTTPS, Firewall, Encryption
5	Maintainability	Ease of updates, bug fixes, and enhancements	Modular Codebase, CI/CD Pipelines, Logging & Monitoring
6	Interoperability	Ability to integrate with other systems	REST APIs, GraphQL, Webhooks
7	Portability	Ability to run the system in different environments	Docker, Kubernetes, Cloud-Agnostic Tools
8	Reliability	Consistency in system behavior and fault tolerance	Retry Logic, Circuit Breakers, Monitoring (Prometheus)
9	Usability	User-friendliness and ease of interaction	UI/UX Design, Accessibility Standards (WCAG)
10	Testability	Ability to efficiently test the system	Unit Testing (Jest, JUnit), Integration Testing, Selenium