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

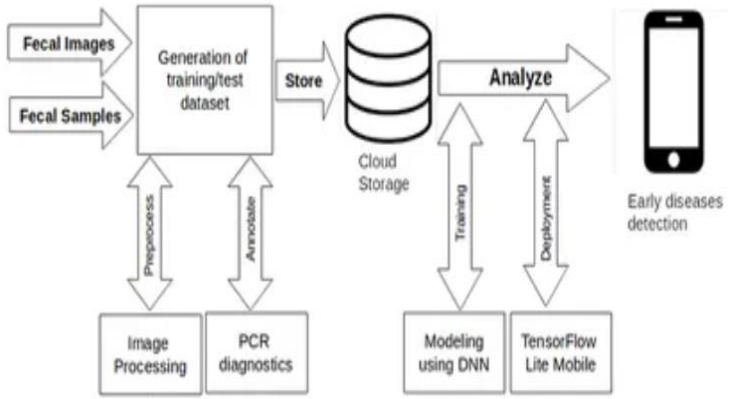
Date	31 January 3035
Team ID	LTVIP2025TMID46233
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	4 Marks

Technical Architecture: Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management

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

Figure 2



Guidelines:

1. **Mention the Type of Architecture**
   E.g., "The project uses a three-tier/microservices/serverless architecture."
2. **Highlight Core Components**
   Describe the main layers: UI, backend logic, database, APIs, and cloud services.
3. **Include Key Technologies**
   Specify tools and platforms used like IBM Watson

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How users interact with the application (Web, Mobile, Chatbot)	HTML, CSS, JavaScript, AngularJS, ReactJS, Bootstrap
2.	Application Logic-1	Core business logic for application processes	Java, Python
3.	Application Logic-2	Speech-to-Text processing	IBM Watson STT service
4.	Application Logic-3	Conversational logic and NLP engine	IBM Watson Assistant
5.	Database	Stores structured/unstructured.	MySQL, NoSQL, etc.
6.	Cloud Database	Cloud-hosted database services	IBM DB2, IBM Cloudant etc.
7.	File Storage	Persistent file storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	External API for weather or environmental data	IBM Weather API, etc.
9.	External API-2	API for user identity verification or government data integration	Aadhar API, etc.
10.	Machine Learning Model	AI component for predictive or cognitive tasks	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Deployment environment (local or cloud-based)	Local Server, IBM Cloud Foundry, Kubernetes, Docker, IBM Code Engine, etc., etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List of open-source tools/frameworks used in the application	ReactJS, AngularJS, Flask, Node.js, Bootstrap, TensorFlow, Scikit-learn, Apache Kafka

S.No	Characteristics	Description	Technology
2.	Security Implementations	Measures to secure data and access (encryption, firewalls, auth, etc.)	SHA-256, JWT Tokens, HTTPS/SSL, OAuth 2.0, IBM Cloud IAM, OWASP Top 10, API Gateway, Firewall
3.	Scalable Architecture	Architecture model allowing scaling (horizontal/vertical	Microservices, 3-Tier Architecture, Docker, Kubernetes, IBM Cloud Functions (Serverless)
4.	Availability	Measures to ensure uptime and high availability	Load Balancers, Multi-Zone IBM Cloud Deployment, Failover Mechanisms, Redundancy Setup
5.	Performance	Design for speed and efficiency (high load, caching, quick response)	CDN (e.g. Cloudflare), Redis Cache, IBM Cloud Monitoring, Auto-scaling, Async APIs

References:

https://c4model.com/

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

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