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

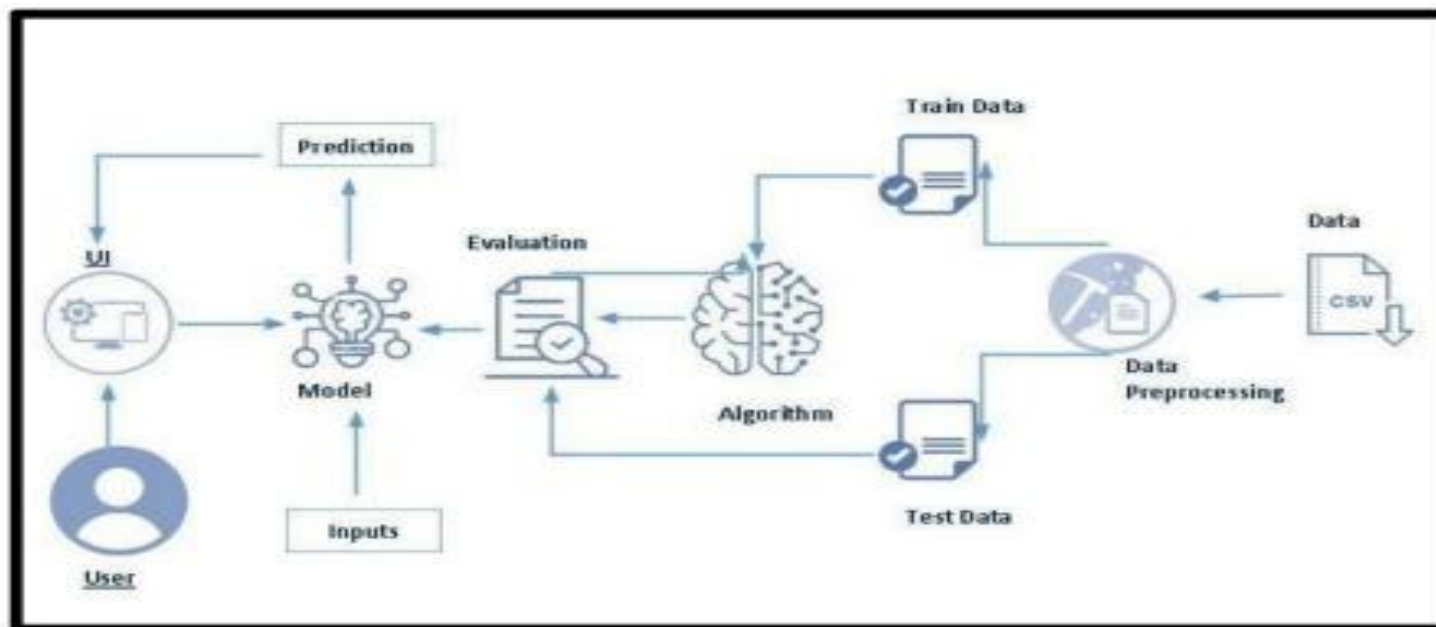| Date	06/02/2026
Team ID	LTVIP2026TMIDS81483
Project Name	Prosperity Prognosticator: Machine Learning for Startup Success Prediction
Maximum Marks	4 Marks

Technical Architecture:

Table-1 : Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	Web interface where users enter startup details and view predictions	HTML, CSS, JavaScript, Bootstrap
2.	Application Logic-1	Backend logic for handling user requests and data validation	Python (Flask Framework)
3.	Application Logic-2	Machine Learning prediction processing	Scikit-learn (Random Forest)
4.	Application Logic-3	Prediction Result Processing & Confidence Score Generation	Python (Flask), Scikit-learn (predict_proba), JSON Handling
5.	Database	Stores user details and startup data	MySQL
6.	Cloud Database	Cloud-hosted database for production	AWS RDS / Cloud MySQL
7.	File Storage	Stores ML model (.pkl) and reports	Local File System / AWS S3
8.	External API-1	Gmail authentication for login	Google OAuth API
9.	External API-2	LinkedIn authentication integration	LinkedIn OAuth API
10.	Machine Learning Model	Predicts startup success or failure	Random Forest Classifier
11.	Infrastructure (Server / Cloud)	Application deployment environment	Local Server (Development) / AWS EC2 (Production)

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks used for development	Flask, Scikit-learn, Bootstrap
2.	Security Implementations	User authentication, encrypted passwords, secure API access	SHA-256 Hashing, HTTPS, OAuth 2.0
3.	Scalable Architecture	3-tier architecture allows scaling of frontend, backend, and database independently	AWS EC2, Load Balancer
4.	Availability	System hosted on cloud ensuring 24/7 uptime	AWS Cloud Infrastructure
5.	Performance	Fast prediction response (<3 seconds), optimized model, minimal latency	Flask API Optimization, Model Caching