Project Design: Phase -II

PROJECT DESIGN PHASE

DATE	3 FEBRUARY
TEAM ID	LTVIP2026TMIDS86917
PROJECT NAME	**Prosperity Prognosticator: Machine Learning for Startup Success Prediction**
MAXIMUM MARKS	

Solution Architecture

The Solution Architecture of the Prosperity Prognosticator system is designed to transform raw startup data into meaningful predictive insights through a structured machine learning pipeline. The architecture consists of data processing, model development, validation, and deployment layers integrated into a web-based system.

Initially, historical startup datasets are collected in CSV format. These datasets contain key business attributes such as funding details, market category, team size, revenue indicators, and operational metrics. The data is then processed through a preprocessing layer where missing values are handled, categorical variables are encoded, and numerical features are normalized using Pandas and NumPy.

After preprocessing, the dataset is split into training and testing subsets. Machine learning algorithms from Scikit-learn are applied to train a classification model capable of identifying patterns associated with startup success. The trained model is validated using test data to evaluate performance metrics such as accuracy.

Once validated, the finalized model is deployed within a Flask-based web application. Users interact with the system through a user interface by entering startup parameters. The application processes these inputs using the trained model and generates real-time predictions indicating the probability of startup success.

This layered architecture ensures scalability, reliability, and efficient decision support for entrepreneurs, investors, and policymakers.