Project Initialization and Planning Phase

Date	11 March 2025
Team ID	740052
Project Title	AI-Based Intelligent Insight Extractor
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposes the development of an AI-Based Intelligent Insight Extractor designed to automate the evaluation of applicant data in loan approval scenarios. By leveraging machine learning and advanced analytics, the system provides actionable insights into applicant credibility, improving the efficiency, fairness, and transparency of lending decisions.

Project Overview	
Objective	To create a system that automatically extracts meaningful insights from loan applicant data and predicts approval outcomes using AI. The tool will support financial institutions by providing consistent, data-driven decisions.
Scope	The project encompasses data collection, preprocessing, feature engineering, model training, insight visualization, and integration into existing financial platforms. The model will handle various applicant parameters to predict approval likelihood with explainable outputs.
Problem Statement	
Description	Traditional loan processing is manual, time-consuming, and prone to bias or inconsistency. There is a need for an automated system that can evaluate applications based on historical data patterns to assist in fair, objective decisions.
Impact	An intelligent insight extractor will reduce operational overhead, minimize default risk, and streamline the loan approval workflow, offering greater transparency and a better customer experience.

Proposed Solution	
Approach	**Approach** • Collect historical loan application data. • Clean, normalize, and transform data into model-ready format. • Train ML models (e.g., logistic regression, decision trees). • Deploy a Flask-based dashboard for insights and predictions. • Use explainability tools (e.g., SHAP, LIME) to clarify outcomes.
Key Features	• **Automated Credibility Scoring**: Uses historical data to assign a risk score to each applicant. • **Approval Prediction Engine**: Binary classification indicating loan approval likelihood. • **Insight Dashboard**: Visualizes input features, model decision factors, and predictions. • **API Integration**: Seamless integration with existing loan origination systems.

Resource Type	**Description**	**Specification / Allocation**
Hardware	CPU/GPU Resources	2 × NVIDIA V100 GPUs
	RAM	8 GB
	Storage	1 TB SSD
Software	Frameworks	Flask, Scikit-learn
	Libraries	pandas, numpy, pickle, matplotlib, seaborn
	Development Environment	Google Colab, VS Code
Data	Source / Format	Excel dataset, 40KB, CSV