Project Initialization and Planning Phase

Date	18 June 2025
Team ID	SWTID1750050475
Project Title	SmartLender - Applicant Credibility Prediction for Loan Approval
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

The proposed project aims to modernize the loan approval workflow by integrating machine learning technologies to significantly improve decision speed, accuracy, and consistency. By addressing existing inefficiencies and bottlenecks in traditional systems, the solution aspires to reduce risk exposure, optimize operational workflows, and elevate customer experience. The core innovation lies in using predictive analytics to assess applicant credibility in real time.

Project Overview	
Objective	To enhance and accelerate the loan approval process by utilizing machine learning algorithms capable of delivering precise and automated credit evaluations.
Scope	This initiative involves redesigning the existing loan approval mechanism with a data-driven, intelligent model that leverages machine learning. It encompasses everything from data preprocessing to predictive modeling and decision automation, aiming for a scalable and adaptable system.
Problem Statement	
Description	Conventional loan approval systems are plagued by delays, inconsistencies, and manual decision-making, which not only hinder operational flow but also reduce the accuracy of credit evaluations, affecting both the lender and borrower experience.
Impact	By resolving these shortcomings, the project will lead to smoother internal operations, lower chances of default through better risk profiling, and a more satisfying, transparent journey for customers—ultimately enhancing trust and brand value.
Proposed Solution	
Approach	This solution will leverage machine learning models trained on historical loan and applicant data to identify credible applicants quickly and reliably. The system will automate the evaluation of creditworthiness based on a wide range of financial and personal indicators.
Key Features	Deployment of an intelligent, ML-powered credit scoring model.

	Real-time predictions for immediate loan eligibility decisions.
	Self-improving algorithms that evolve with changing economic and customer trends.

Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Visual Studio Code
Data		
Data	Source, size, format	Kaggle dataset, 614, csv UCI dataset, 690, csv