

Project Initialization and Planning Phase

Date	15 June 2024
Team ID	740144
Project Title	Loan Sanction Amount Prediction Data With ML
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

This project proposal outlines a solution to address the problem of loan sanction amount prediction through machine learning. With a clear objective to develop a predictive model for assessing the loan sanction amount based on customer financial history, demographic details, and other relevant factors, the proposal defines the scope of the project, including data collection, model development, and deployment. The proposed solution details the approach to be used, key features of the model, and specifies the resource requirements including hardware, software, and personnel. By creating an accurate and user-friendly tool, the project aims to enable efficient loan processing and improve decision-making for financial institutions.

Project Overview

Objective	The primary objective is to develop a machine learning model that accurately predicts the loan sanction amount for applicants based on their financial history, demographic details, and other relevant factors, enabling efficient loan processing and improved decision-making for financial institutions.
Scope	Develop a machine learning model to predict the loan sanction amount based on applicant data. The scope includes data collection, basic preprocessing, model development, and initial evaluation for accuracy. The model will be deployed in a simple application for financial institution use. Ongoing maintenance and updates are not included.
Problem Statement	

Description	<p>Predicting the appropriate loan sanction amount is crucial for minimizing financial risks and improving customer satisfaction. However, determining the loan amount can be challenging due to the complexity of evaluating numerous factors and the potential for human error. This project aims to develop a machine learning model that predicts the loan sanction amount based on applicant data, enabling financial institutions to make more informed and efficient</p>
	lending decisions.
Impact	<p>Accurate loan sanction amount prediction improves decision-making, reduces the risk of defaults, and enhances customer satisfaction. It also enables efficient resource allocation, reducing operational costs. Additionally, it provides a tool for better risk management and can be adapted for broader financial applications.</p>
Proposed Solution	
Approach	<p>Collect applicant data and preprocess it for analysis. Develop a predictive model using algorithms like regression or decision trees, then evaluate its performance with metrics such as RMSE and R^2. Finally, deploy the model in a simple application for initial use.</p>
Key Features	<ul style="list-style-type: none"> * Uses applicant data to forecast loan sanction amount with high accuracy. * Implements straightforward machine learning techniques for reliable predictions. * Aims to minimize financial risk and improve customer satisfaction. * Can be adapted for different financial products and integrated into various financial systems.

Resource Requirements

Data		
Data	Source, size, format	Kaggle dataset, 1348 KB, CSV

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	GB
Storage	Disk space for data, models, and logs	TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE, version control	Jupyter Notebook, VS Code