Project Design Phase-II

Technology Stack (Architecture & Stack)

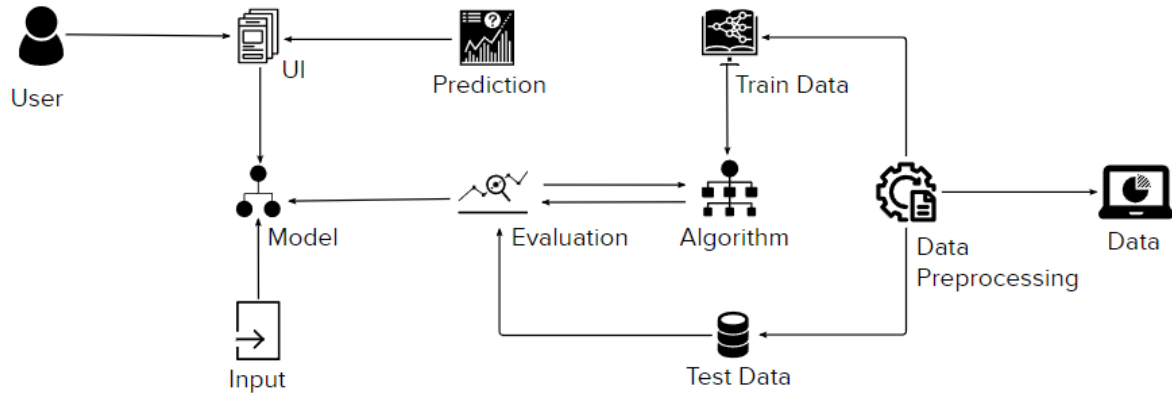| Team ID	PNT2022TMID36001
Project Name	Smart Lender – Applicant Credibility Prediction for Loan Approval
Maximum Marks	4 Marks

Technical Architecture

Table-1 : Components and Technologies

1.	User Interface	Users interact with the application with the help of a web UI.	HTML, CSS, Java script
2.	Building Applications	Getting user information from UI and feeding it to ML model	Python Flask
3.	Visualizing and analyzing data	Reading and understanding the data properly with the help of visualization and analyzing techniques	Python pandas, numpy, matplotlib, seaborn
4.	Pre-processing or cleaning data	Handling missing values, Handling categorical data, Handling outliers, Scaling Techniques	Python pandas
5.	Database	Loan Approval dataset.	csv file
6.	Cloud Database	Deploying the model on cloud	IBM cloud
7.	Machine Learning Model	Using machine learning model for predicting loan approval	Model building using classification algorithms such as Decision tree, Random forest, KNN, and xg boost

Table-2 : Application Characteristics

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask is used to host the website. Scikit, numpy and tensorflow are all open source python machine learning frameworks.	Scikit, Numpy
2.	Security Implementations	OpenSSL is a program and library that supports many different cryptographic operations, including: Symmetric key	OpenSSL Encryption
		Encryption. Public/private key pair generation. Public key encryption. Hash functions.	
3.	Scalable Architecture	Since the application servers can be deployed on many machines. Also, the database does not make longer connections with every client – it only requires connections from a smaller number of application servers. It improves data integrity.	3 Tier Architecture
4.	Availability	Decentralized storage and distribution along-with web application approach make the service highly available.	IBM Cloud file storage, MySQL Online
5.	Performance	Long term header expiration. Cacheable AJAX Cookie Free Domain Compress zip components.	AJAX, CDN