Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID27218
Project Name	Project - Smart Lender - Applicant credibility prediction for loan approval
Maximum Marks	4 Marks

Technical Architecture:

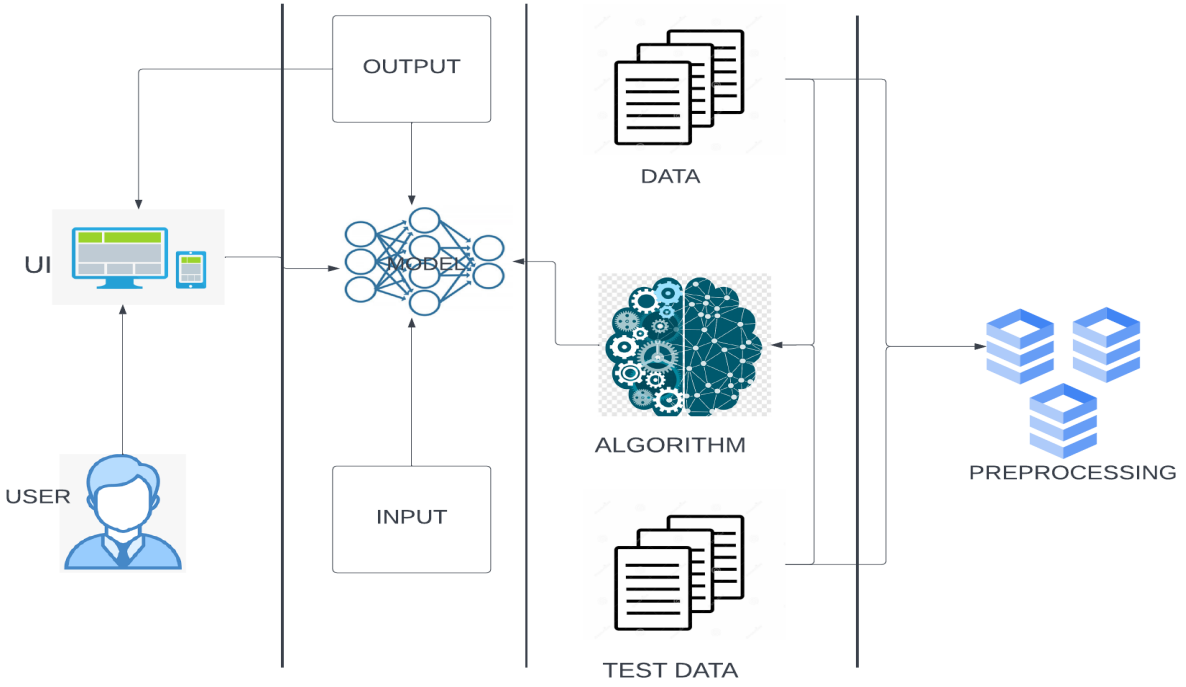

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript
2.	Information window	The user information is obtained using the UI and is feeded into the model for evaluation.	Python Flask
3.	Chatbot	The questions of the users are handled for navigation through the application and evaluation of results.	DialogFlow/Knowlarity etc.
4.	Visualization and analysis of data	Comprehending the data using visualization techniques offered by python libraries.	Python pandas, numpy, matplotlib etc.
5.	Preprocessing Data	Outlier treatment, Categorical values treatment, replacing missing values etc.	Python pandas, Scikitlearn etc.
6.	Database	Storage of user details etc.	MySQL
7.	Cloud Database	Deployment of application in cloud	IBM Cloud
8.	Machine Learning Model	Evaluation and prediction of borrower’s eligibility for loan approval	Python, incorporating classification algorithms such as Decision tree, Random Forest, KNN, XG boost etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	-> Flask is used for website hosting. -> Scikit and TensorFlow are python ML frameworks.	Flask, Scikit, Tensorflow
2.	Security Implementations	Definitions and procedures for information accessibility and handover to authorized people.	IBM Watson STT
3.	Scalable Architecture	This application's architecture is highly flexible in various ways such as integrating it with a banking app so that more users access it other than just customers of normal cases.	Python, HTML, CSS.
4.	Availability	IBM Cloud uses global load balancing to ensure a redundant, highly available platform for hosting applications.	IBM Cloud
5.	Performance	Efficient UIs are designed in a way that it could withstand processing large amount of data and fastest algorithm is evaluated and selected by comparison.	UI : HTML, CSS, JS ML model : Python

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d