

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

Date	20 October 2022
Team ID	PNT2022TMID13022
Project Name	Project - Smart Lender - Applicant Credibility Prediction for Loan Approval
Maximum Marks	4 Marks

Technical Architecture:

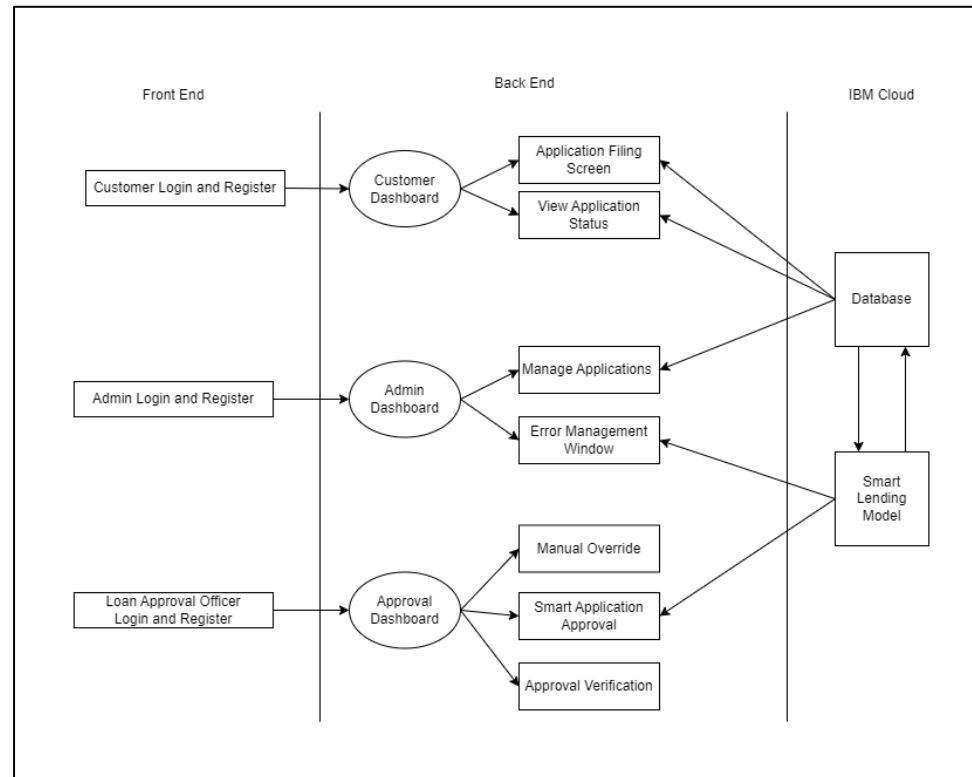


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Customer, Admin and loan approval officers will be able to register login and use the functionalities available to them	HTML, CSS, JavaScript
2.	Application Filing	Available to customers only, this screen allows customers to fill details in an online application for loan approval	JavaScript
3.	View Application Status	View pertinent information relevant to the application. Can be accessed by admin only	JavaScript
4.	Manage Applications	Ability to modify applications as and when needed. Can be accessed by admin only	JavaScript
5.	Error Management Window	Ability to rectify or troubleshoot errors. Can be accessed by admin only	JavaScript
6.	Manual Override	Ability to change loan approval decisions manually. Available only to loan approval officer	JavaScript
7.	Smart Application Approval	Performs automated loan approval decision and gives details supporting decision	JavaScript, Python
8.	Application Verification	Verification of application and documents provided by applicant	JavaScript
9.	File Storage	Network File System(NFS)	IBM Cloud File Storage
10.	Machine Learning	Automated decision making for loan approval and giving details for decision	XGBoost, Random Forest
11.	Infrastructure (Sever/Cloud)	Default	Flask

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, TensorFlow, Flask
2.	Security Implementations	OpenSSL is a program and library that supports many different cryptographic operations, including : symmetric key encryption, public/private key pair generation, public key encryption, hash functions	OpenSSL Encryption
3.	Scalable Architecture	Since the application servers can be deployed on many machines. Also, the database doesn't make longer connections with every client-it only requires connections from a smaller number of applications 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 gzip components	AJAX, CDN

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>