

Project Design Phase-II

Technology Stack (Architecture & Stack)

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| Date | 03 October 2022 |
| Team ID | PNT2022TMID07972 |
| Project Name | Smart Lender - Applicant Credibility Prediction for Loan Approval |
| Maximum Marks | 4 Marks |

Technical Architecture:

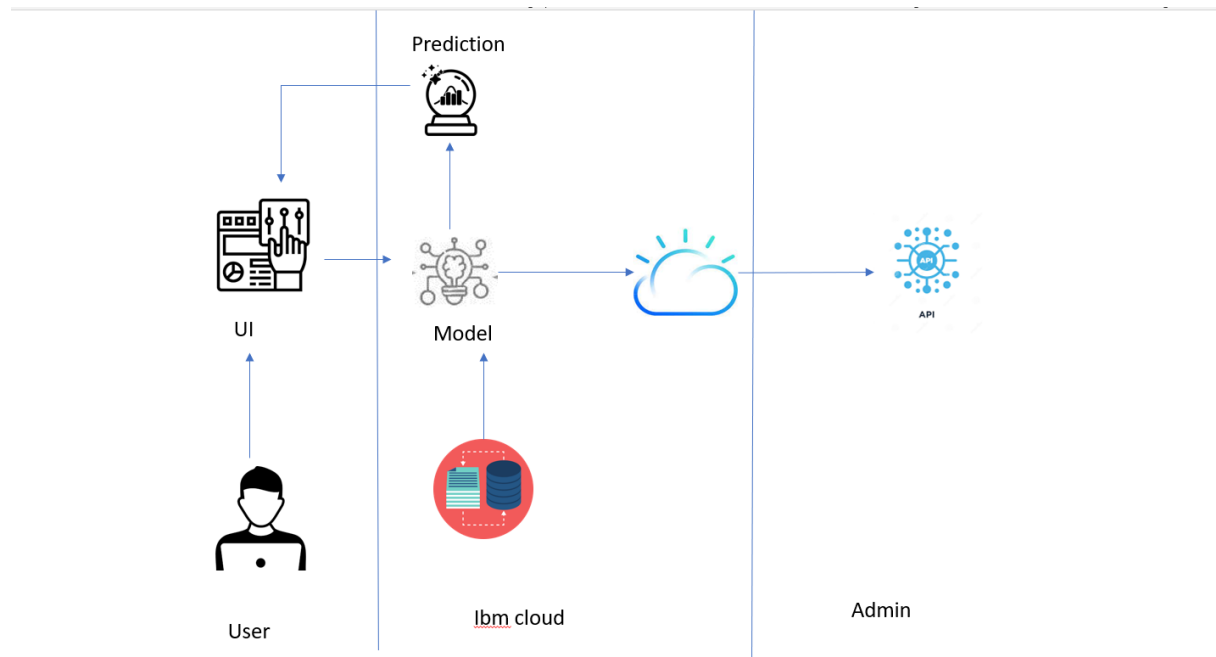


Table-1 : Components & Technologies:

| S. No | Component | Description | Technology |
|--------------|--------------------------------|---|--|
| 1. | User Interface | Users interact with the application with the help of a web UI. | HTML, CSS, JavaScript |
| 2. | Building Application | Getting User information from UI and feeding it to ML model | Python Flask |
| 3. | Chatbot | Handles basic queries of customers on loan approval | Dailogflow |
| 4. | Visualizing and analyzing data | Reading and understanding the data properly with the help of visualization and analyzing techniques | Python pandas, numpy, matplotlib, seaborn |
| 5. | Data Pre-processing | Handling missing values, categorical data and outliers , Scaling techniques | Python libraries like Pandas , Numpy and Scikit learn |
| 6. | Database | To store the details of the user. | MySQL |
| 7. | Cloud Database | Deploying the model on cloud | IBM Cloud |
| 8. | Machine Learning Model | Prediction of borrower's eligibility or loan approval, approvable amount of loan | 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 tensor-flow are all open source python machine learning frameworks. | scikit, Numpy |
| 2. | Security Implementations | Authorization access scenarios and definitions, hand-over procedures for applicant records between banks | IBM Watson STT service |
| 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 | Application is available 24 / 7 as it is hosted on IBM cloud. Simple web browser is enough to access the website. | IBM cloud and browsers |
| 5. | Performance | Long term header expiration. Cacheable AJAX Cookie Free Domain Compress zip components. \ The landing page supporting 5,000 users per hour must provide 6 second or less response | AJAX, CDN APM technology |

| S. No | Characteristics | Description | Technology |
|------------------|------------------------|--|-------------------|
| | | time in a Chrome desktop browser, including the rendering of text and images and over an LTE connection. | |