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

Date	25 October 2023
Team ID	Team-592699
Project Name	Project - Online payment fraud detection using ML
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

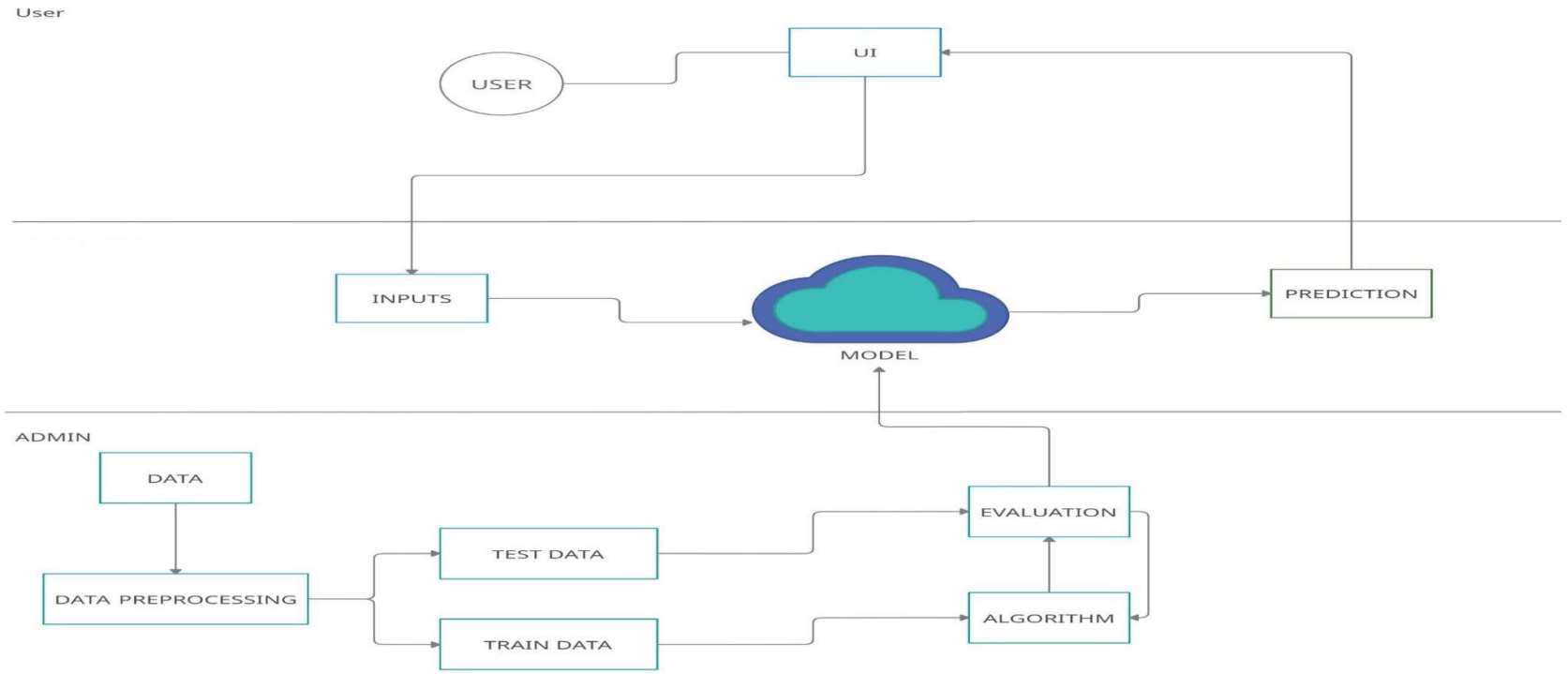

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How users interact with the application, e.g., a web-based interface for users to input transaction data.	HTML, CSS, JavaScript ,React Js.
2.	Application Logic-1	Logic for implementing the fraud detection process using machine learning algorithms.	Python
3.	Application Logic-2	voice interaction processing if required	IBM Watson STT service
4.	Application Logic-3	for implementing chatbot features	IBM Watson Assistant
5.	Database	Data storage for transaction records	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-2	Identity Verification Service for verifying user identities during online transactions.	Aadhar API
9.	Machine Learning Model	Purpose of the machine learning model, which is online payment fraud detection.	Various classification algorithms like Decision tree, Random forest, SVM, Extra tree classifier, XGBoost Classifier, implemented in Python and saved in a .pkl format.
10.	Infrastructure (Server / Cloud)	Where the application will be deployed, either on local servers or in the cloud.	Local,Kubernetes.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Flask, Scikit-Learn
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Identity and Access Protection.
3.	Scalable Architecture	3 Tier Architecture, Model-View-Controller implementation.	Model - SQL DB, View - ReactJS, Controller - Flask Server
4.	Availability	Ensuring the application is available to users without significant downtime.	IBM cloud
5.	Performance	The performance will be high because there will be no network traffics in the application	Kubernetes Cluster