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

Date	16 November 2023
Team ID	Project -Online Payments Fraud Detection using ML
Project Name	Team-591594
Maximum Marks	4 Marks

Technical Architecture:

A tech stack is the combination of technologies used to build, deploy, and maintain an application. It includes the programming languages, frameworks, libraries, tools, and infrastructure that make up the application.

The choice of tech stack for a particular application depends on a number of factors, including the type of application, the size and complexity of the application, the budget and timeline for the project, and the team's experience and expertise.

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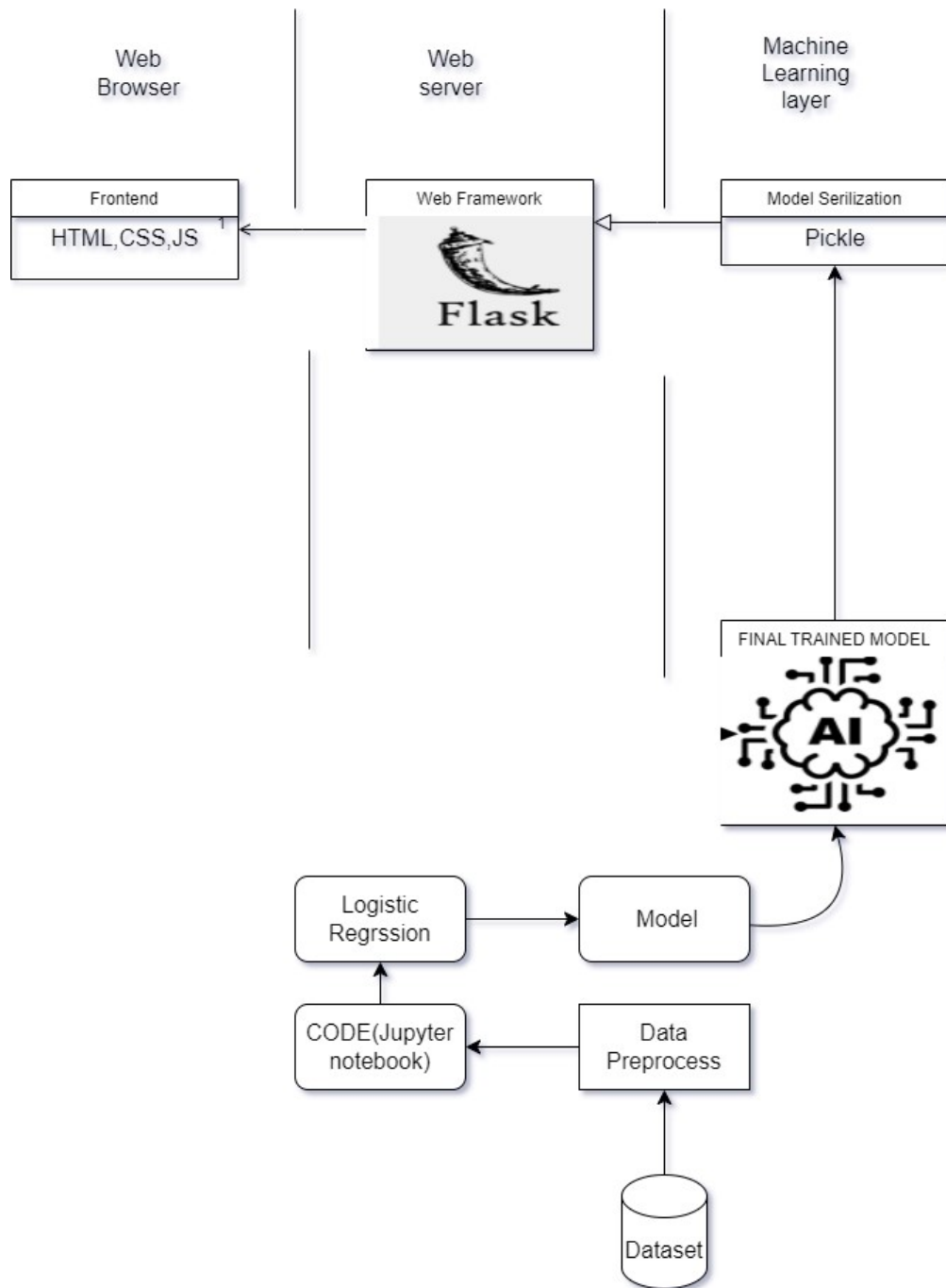
Architectural Diagram:

Web Browser

Web server

Machine Learning layer

Frontend

HTML,CSS,JS

Web Framework

Flask

Model Serilization

Pickle

FINAL TRAINED MODEL

AI

Logistic Regrssion

Model

CODE(Jupyter notebook)

Data Preprocess

Dataset

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Web framework	Lightweight and flexible web framework in Python	Flask
2.	Machine Learning	Scikit-learn for traditional ML, TensorFlow for deep learning	Scikit-learn
3.	Frontend	Standard web technologies for responsive UI design	HTML,CSS,JavaScript
4.	Model Serialization	Python libraries for serializing machine learning models	Pickle
5.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Data Collection	Ability to collect and store relevant data for training the ML model	Flask, SQLite, Python
2.	Data Preprocessing	Processing and cleaning collected data for ML model preparation	Scikit-learn, Python.
3.	Machine Learning Model	Development of fraud detection model using ML algorithms	Scikit-learn, TensorFlow, Python

S.No	Characteristics	Description	Technology
4.	Model Validation	Ensuring accuracy and reliability of the ML model through validation	Scikit-learn, Python
5.	Web App Development	Creating a web interface for user interaction with the fraud detection system	Flask, HTML, CSS, JavaScript
6.	Model Saving	Saving trained ML model for later use in the web application	Pickle or joblib, Python
7.	Testing	Rigorous testing of the web app to identify and fix bugs or issues	Testing frameworks, Python