Project Design Phase-I
Proposed Solution Template

Date	10-11-2003
Team ID	Team-592025
Project Name	Project - Online Payments Fraud Detection using ML
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem at hand is the increasing prevalence of credit/debit card fraud in online transactions due to the growth of internet and e-commerce. The current methods of fraud detection suffer from accuracy issues and specific drawbacks. The vast amount of data involved makes it challenging to efficiently rectify credit/debit card fraud.
2.	Idea / Solution description	To address the surge in credit/debit card fraud in online transactions, we suggest putting in place a fraud detection system that makes use of classification algorithms like Decision Tree, Random Forest, SVM, Extra Tree Classifier, and XGBoost in order to handle the rise in credit/debit card fraud in online transactions. The top-performing model will be chosen, saved in a pkl format, and integrated into a Flask web application following training and testing. Scalability and security are guaranteed when deploying applications using IBM Cloud services.

3.	Novelty / Uniqueness	Using a variety of classification algorithms, an ensemble method for improved accuracy, integration into an intuitive Flask application, deployment on the scalable IBM Cloud, continuous learning for adaptability, and extensive documentation, the proposed
		solution is unique in that it takes a comprehensive approach to credit/debit card fraud detection. This ensures a thorough, effective, and user-friendly solution to combat fraud in online transactions.
4.	Social Impact / Customer Satisfaction	The suggested remedy has a major impact on user satisfaction while also strengthening online transactions against fraud. Customers experience less inconvenience and financial loss as a result of the increased sense of security it creates. The solution enhances industry reputation by promoting trust and reducing fraudrelated concerns, which draws and keeps users. Furthermore, because of its worldwide reach, it has the potential to advance cybersecurity practises in the digital sphere and have a significant social impact. All things considered, the solution benefits both people and businesses by fostering a safer and more fulfilling online experience.
5.	Business Model (Revenue Model)	The fraud detection service is provided to ecommerce businesses on a subscription basis as part of the business model, which guarantees a consistent revenue stream. Furthermore, a transaction-based model charges companies on a per transaction basis, providing flexibility and scalability in generating revenue and matching expenses to real system utilisation. Stability and flexibility are combined in this dual approach to ensure long-term profitability.

6.	Scalability of the Solution	Scalability is ensured by the deployment of the IBM Cloud, parallel processing for effective scaling, continuous monitoring for inthemoment performance evaluation, the lightweight Flask interface for user interaction, and continuous model optimisation. When all of these steps are taken together, the solution can easily manage growing data and transaction volumes and remain flexible enough to adjust to changing online transaction fraud trends.