Project Design Phase-I

Proposed Solution Template

Date	**02-11-2023**
Team ID	**Team-592036**
Project Name	**Online Payments Fraud Detection Using ML**

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	Online payment fraud is a pervasive and evolving challenge in the digital age, causing financial losses, reputation damage, and customer trust erosion. Our goal is to accurately classify each transaction as either 'fraudulent' or 'legitimate' based on a set of relevant features. The objective is to minimize the occurrence of frauds while achieving a high level of overall accuracy. The model should be capable of real-time or batch processing and should effectively identify potentially fraudulent transactions, thereby safeguarding financial institutions and their customers from financial losses due to fraudulent activity in online payment systems.
2.	Idea / Solution description	Logistic regression provides a simple and effective way to control online payment transactions and reduce the risk of financial losses due to fraud. A dataset of past payment transactions is collected, encompassing both legitimate and fraudulent ones. Relevant features such as transaction amount, location, and user behavior are extracted from this dataset. Then the logistic regression model that is

		trained on this data, enabling it to recognize patterns and correlations between these features and the fraud status of each transaction. The model assigns a probability score to each transaction, indicating the likelihood of it being fraudulent. By establishing a threshold for this score, transactions can be classified as either 'fraudulent' or 'legitimate.' Transactions surpassing the threshold are identified as potentially fraudulent and subjected to further examination, which may involve alerts or conducting security checks.
3.	Novelty / Uniqueness	Using logistic regression for online payment fraud detection lies in its ability to provide a transparent and efficient solution to a critical problem. Additionally, logistic regression can be part of a hybrid model, combining various techniques to enhance fraud detection accuracy while maintaining a level of human-understandable decision-making.
4.	Social Impact / Customer Satisfaction	Logistic regression for online payment fraud detection has a positive social impact as it helps prevent financial losses due to fraud, safeguarding people's money and personal information. Customers benefit from a more secure online payment experience, as the system can identify and block potential fraud in real time. This approach not only protects individuals and businesses but also creates a sense of confidence and trust in the online payment ecosystem.
5.	Business Model (Revenue Model)	The use of logistic regression for Online payments fraud detection involves providing a service to financial institutions and online businesses. These clients pay for the fraud detection service

		on a subscription or usage basis. The model relies on gathering and analyzing transaction data, applying logistic regression for fraud prediction, and providing regular updates and support. Revenue is generated through subscription fees, transaction fees, or a combination of both.
6.	Scalability of the Solution	Scalability is crucial to adapt to the ever-expanding online payment ecosystem and maintain a high level of security and by using logistic regression means that the system can handle a growing number of transactions without losing effectiveness. As online payments increase, the logistic regression model can still efficiently analyze a large volume of transactions, ensuring that it continues to accurately detect fraud without slowing down.