Project Design Phase-I
Solution Architecture

Date	20 November 2023
Team ID	591837
Project Title	Online Fraud Detection Using ML
Maximum Marks	4 Marks

Solution Architecture:

Obtaining transaction data from several sources, cleaning and manipulating it, and creating a machine learning model are all part of the solution architecture for a machine learning-based online fraud payment detection system. Using historical data, this model is trained to find trends linked to fraud. The solution applies dynamic thresholds, interfaces with payment gateways in real-time, and sends out notifications based on established rules and confidence scores. The model's efficacy is maintained by frequent retraining, feedback loops, and ongoing monitoring. Analysts can monitor and investigate flagged transactions using a dashboard that is accessed through a user interface, and reports are created on a regular basis. Documentation, regulatory compliance, and security measures are essential elements. For scalability, cloud services and containerization are used in the system's deployment. Updates and improvements are part of ongoing maintenance to accommodate changing.

The best tech solution involves the following steps:

1. Data Ingestion and Collection
2. Data Preprocessing
3. Machine Learning Model Development
4. Real-time Fraud Detection
5. Monitoring and Alerting
6. Model Deployment
7. Security and Privacy
8. Feedback Loop
9. Documentation and Maintenance

Solution Architecture Diagram :