Project Design Phase-I
Solution Architecture

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

Solution Architecture:

The solution architecture for an online fraud payment detection system using machine learning involves gathering transaction data from various sources, cleaning and transforming it, and developing a machine learning model. This model is trained on historical data to identify patterns associated with fraud. In real-time, the system integrates with payment gateways, applies dynamic thresholds, and triggers alerts based on confidence scores and predefined rules. Continuous monitoring, feedback loops, and periodic retraining ensure the model's effectiveness. A user interface provides analysts with a dashboard for monitoring and investigating flagged transactions, and regular reports are generated. Security measures, compliance with regulations, and documentation are crucial components. The system is deployed using containerization and cloud services for scalability. Ongoing maintenance includes updates and enhancements to adapt to evolving fraud patterns.

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 :