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CREDIT CARD PROCESSING

1. Introduction

1.1 Purpose of this Document: The purpose of this document is to outline the requirements and specifications for the development of a Credit Card Processing System. It will provide a clear understanding of the project objectives, scope and deliverables.

1.2 Scope of this Document: The document defines the overall working and main objectives of the Credit Card Processing System. It includes a description of the development cost and estimated time required for project.

1.3 Overview: The Credit Card Processing System is a software solution designed to securely handle transactions made via credit cards, it manages authorization, authentication, fraud detection, settlement, billing and reporting, ensuring fast and secure payment services.

2. General Description: The Credit Card Processing System will cater to the needs of merchants, customers and financial institutions by enabling reliable transaction processing. It will include transaction authorization, fraud detection, dispute resolution and reporting.

3. Functional Requirements

3.1 Transaction Authorization:

- Validate card details and check for sufficient funds.
- Communicate with issuing banks in real-time.
- Provide instant approval or decline status.

3.2 Fraud Detection:

- Monitor transactions for unusual activity using predefined rules and AI models.
- Trigger alerts for suspicious transactions.

3.3 Settlement and Clearing

- Process batch settlements with acquiring banks.
- Ensure accurate fund transfers to merchants.

3.4 Billing and Invoicing

- Generate merchant invoices for processing fees.
- Provide customers with digital receipts after transactions.

3.5 Dispute Management

- Allow customers to raise chargebacks.
- Facilitate investigation and resolution workflows.

4. Interface Requirements

4.1 User Interface

- Simple, secure and intuitive interfaces for merchants and administrators.

- Accessible via web browsers, POS terminals and mobile apps.

4.2 Integration Interfaces

- Integration with banks and financial networks.
- Support for payment gateways and third-party merchant platforms.

5. Performance Requirements

5.1 Response Time

- Authorization requests must be processed within 2 seconds.

5.2 Scalability

- Capable of handling 10,000+ concurrent transactions during peak hours.

5.3 Data Integrity

- Ensure transaction records are accurate and tamper-proof.

6. Design Constraints

6.1 Hardware Limitations

- The system should be compatible with standard merchant hardware (POS devices, payment terminals).

6.2 Software Dependencies

- Utilize a relational database management system (e.g., Oracle, MySQL).

- Employ secure communication protocols (e.g., SSL/TLS, PCI-DSS compliance).

7. Non-Functional Attributes

7.1 Security

- Implement end-to-end encryption and tokenization of card data.
- Comply with PCI-DSS standards for payment security.

7.2 Reliability

- Ensure 99.99% uptime with redundancy and failover mechanisms.

7.3 Scalability

- Design for expansion to accommodate future growth.

7.4 Portability

- Support multiple deployment environments (cloud, on-premise)

7.5 Usability

- Provide a user-friendly interface with clear transaction reporting.

7.6 Reusability

- Modular design to allow reuse in future payment systems.

7.7 Compatibility

- Compatible with common browsers, operating systems and POS standards

7.8 Data Integrity

- Ensure accurate transaction recording and reconciliation across all modules.

8. Preliminary Schedule and Budget

The development of the Credit Card Processing System is estimated to take 8 months with a budget of \$250,000. This includes project planning, development, compliance audits, testing and deployment phases.