

CREDIT CARD PROCESSING SYSTEM

1.0 Introduction

1.0.1 Purpose of this document

The purpose of this document is to outline the requirements and specifications for the development of a Credit Processing System (CCPS). It will provide a clear understanding of the project objectives, scope and deliverables.

1.0.2 Scope of this document

This document defines the overall working and main objectives of the CCPS. It includes a description of the development cost, security considerations and time required for the project.

1.0.3 Overview

The Credit Card Processing System is a secure software solution designed to handle transactions made via credit cards. It will facilitate authorization, authentication, clearing, and settlement of payments between merchants, banks and customers.

2.0 General description

The CCPS will cater to the needs of merchants, customers, and financial institutions by ensuring secure and reliable payment transactions. It will support features such as payment authorization, fraud detection,

transaction history and reporting

3. Functional Requirements

3.01 Transaction Authorization

The system should validate card details (card number, CVV, expiry date) with the issuing bank in real-time. Transactions must be either approved or declined instantly to ensure smooth customer experience.

3.02 Payment Processing

It must process payments for both online and in-store transactions. The system should support different currencies, multiple card types (Visa, Mastercard, etc.) and handle international payments seamlessly.

3.03 Fraud Detection (Security)

The system should include fraud detection algorithms to identify unusual activities (e.g., multiple failed attempts, large withdrawals). Alerts must be sent to both banks and customers for suspicious activity.

3.4 Settlement & Reconciliation

Once payments are approved, the system should perform clearing and settlement between acquiring bank (merchant's bank) and issuing bank (customer's bank). Daily and monthly reconciliation reports must be generated.

3.5 User management

merchants and customers must be able to securely log in to the system. Merchants can view their transactions and settlements, while customers can review their purchase history and manage payment methods.

4. Interface Requirements

4.1 User Interface

- Intuitive and user-friendly dashboards for merchants, banks and administrators.
- Accessible via web and mobile platforms.

4.2 Integration Interface

- Integration with banks' payment gateways.

5. Performance Requirements

5.1 Response time

- The system should authorize or decline transactions within 2-3 seconds.

5.2 Capability

- capable of handling at least 10,000 concurrent transactions

6.3 Data Integrity

- ensure accuracy and consistency of financial data across modules

6. Design constraints

6.1 Hardware Limitations

- compatible with merchant POS terminals and secure payment servers

6.2 Software Dependencies

- use secure encryption standards
- employ relational databases

7. Non-functional Attributes

7.1 Security

All sensitive information should be encrypted during storage and transmission. Multi-factor authentication should be used for admin access, and intrusion detection systems must monitor unauthorized access attempts.

7.2 Reliability

The system must guarantee 24/7 availability.

7.3 Scalability

The system should be capable of handling growing transaction volumes as the numbers of merchants and customers increase.

7.4 Portability

The solution should be deployable on different operating systems.

7.5 Usability

Interfaces for merchants, customers and administrators must be simple and intuitive.

7.6 Compatibility

The system should work with all major web browsers, mobile operating systems and integrate with multiple payment gateways and POS terminals.

8) Preliminary Schedule and Budget

The development of the credit card processing system is estimated to 9 months with a budget of \$200,000. This includes project planning, development, security, auditing, testing and deployment.