

Credit Card Processing System

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Date:

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1. Introduction

1.1 Purpose

This document defines requirements for the credit card processing system (CCPS), which validates, authorizes and processes credit card payments securely.

1.2. Intended audience

- Developers → implementations
- Testers → requirement validation
- Merchants/Bank staff → usage
- Instructors → project evaluation.

1.3. Product scope.

Will provide an end-to-end platform for handling payments requests. It will include transaction authorization, fraud detection, settlement, and reporting. The system benefits merchants, banks, and cardholders by ensuring seamless payments.

1.4. References:

1. IEEE Standard 830-1998

2. Visa, MasterCard, and American Express API integration guidelines.

2. Overall Description.

2.1. Product perspective

Standalone system integrated with merchant applications and payment gateways.

2.2. User classes:

- Merchant: initiates payment
- Customer: provides credit card info
- Bank system: validates and authorizes.

2.3. Operating Environment:

- OS: Windows/Linux
- Database: MySQL/Oracle
- Secure communication via HTTPS

3. System features & Requirements

3.1. Functional Requirements

- System shall validate card number, expiry date and CVV
- System shall authorize transactions via payment gateway
- System shall generate transaction receipts.
- System shall log failed transactions for review.

3.2. Non-Functional requirements

- Performance: Each transaction processed within 5 seconds.
- Security: Data encrypted per PCI DSS standards.
- Reliability: 99.9% uptime in test environment
- Usability: Simple UI for merchants.

3.3. Domain Requirements

- Must comply with PCI DSS
- Must support multiple currencies
- Must ensure two-factor authentication for suspicious transactions.

4. External Interface Requirements

- User Interface: Merchant dashboard, customer payment form.
- Hardware: Standard POS terminal
- Software: Database + payment gateway API
- Communication: Secure HTTPS / TLS

5. Other Requirements

- Source code must be documented
- System should support future integration with mobile apps.

6. Appendix

• Glossary

- Authorization: Approval from bank to complete transaction
- Settlement: Transfer of funds between customer and merchant
- PCI DSS: Industry standard for handling card data securely.

• Abbreviations:

- CCPS: Credit card processing system
- CVV: Card verification value.