II Credit card processing.

1. Introduction:

a. Purpose:

It is to define the software requirements for a credit card processing. This system facilitates secure authorization, capture, settlement of credit card transactions for merchants.

b. Document convention:

Bold texts are used for section heading & interface labels. Bulleted lists are used for listing actions, options or steps.

c. Intended Audience & reading suggestions:

→ Project manager - to understand the project scope, deliverables and system constraints.

→ Software Developers - to design, implement and integrate the system components.

→ All readers should begin with introductions to understand the system process, purpose, scope.

d. Project scope:

→ to authorize transactions in real-time.

→ void or refund transactions

→ capture authorized transactions for settlement.

e. References:

→ Visa and mastercard API Integration guides.

→ IEEE 830-1998: Recommended for SRS.

2. Overall Description:

a. Product Perspective:

It will act as an intermediatory between merchants, issuing banks, acquiring banks and card networks.

b. Product Functions:

- Validate and tokenize credit card data.
- Authorize credit card transactions.
- Process refunds and void.

c. User classes and Characteristics:

Merchant - Initiates and manage transactions.

Admin - Manages user roles, audits and compliance

Customer - Initiates payment via merchant UI.

d. Operation Environment:

- Web server with HTTPS
- Backend services (Node.js, python, Java)

Databases: MySQL.

e. Design and Implementation Constraints:
Must comply with PCI. Tokenization of credit card data is mandatory.

f. User Documentation:
Integrate API Guide. It must contain Admin Postal Manual. It should have compliance checklist.

g. Assumptions and Dependencies:
External payment gateway is available and functional. Issuer and acquirer services are online and compliant.

3. Specific Requirements:

a. Functional Requirement
Card Validation - The system shall validate the format of card number. Tokenization - The system shall tokenize card data before storage or transmission. Authorization - The system shall authorize card payments via a third party payment gateway.

b. Non-Functional Requirement:
Security - The system shall encrypt all sensitive data using AES. Performance - The system shall

respond to authorization request within 2 seconds. Availability - the system shall have an uptime of 99.9% per month.

c. External Interface Requirement

Web-based Admin dashboard and Restful API for integration and transaction viewer and export tool. Hardware Interfaces POS terminal via USB, serial or Ethernet.

d. Appendices:

Authorization - Initial approval of a payment request. Capture means finalizing a previously authorized transaction. Refund means returning funds to the cardholder.

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19/8/25