2) Credit Card processing System

problem Statement:

Design and implement a Credit Card processing System that enables Authorization and ~~transa~~ ensure a secure System

1) Introduction

1.1 Purpose of Documents:

This document specific the requirements required for the Credit Card processing System (CCPS). It defines the scope, functionality, performance and constraint of the system to ensure secure, efficient and processing of Credit Card transactions.

1.2 Scope of Documents:

The Credit Card Processing System (CCPS) enables authorization, authentication, transaction settlement, and reporting of Credit Card payments. It will serve merchants, banks, cardholders, ensuring

Compliance with financial regulation (PCI-DSS).
The system will integrate with merchant POS system, online portal, and Banking networks.

1.3 Overview:

The system will:

* Validate customer credentials
* Process payments in real time.
* Support refunds and cancellations.
* Maintain transaction logs.
* Provide reporting dashboards.

2) General Description:

The system acts as middleware between merchants and financial institution. It captures transaction details, verify them against card networks, ensure funds availability, and provide confirmation. Users include:

* Merchants (initiate payment Request)
* Card holders (authorise payments).
* Payment Gateways (capture / settle funds).

3) functional Requirements

* Authenticate cardholders using card number, (
and OTP/PIN.
* Authorize transaction amount with issuing
* Handle approvals, decline, be-funds, and
reversals
* Generate digitals receipts and transaction
IDs.
* Maintain secure logs of all transactions
* Support multi-currency payments.
* Provide reporting for merchants and banks.

4) Interface Requirements

* User Interface: Web dashboard for merchants
payments page for customer.
* External Interface: Integration with POS
terminals, mobile app and online store
* API interface: REST APIs: for banks
authorization and merchant system.

5) Performance Requirements

* System must handle up to 5000 transaction/seconds
* Response time for authorization = 3 seconds
* 0 Requirements : 99.9% availability.

6) Design Constraints

* Must comply with PCI-DSS standard
* Encrypt all sensitive data.
* follow ISO 8583 message format for transaction exchange.
* Limited to integration with VISA, Mastercard, RuPay, and ~~Amex~~ Amex network initially.

7) Non-functional Attributes

* Security : End-to-End encryption, ~~fraud~~ fraud
* Reliability : Automatic functions, redundancy
* Usability : Simple payment interface for user
* Maintainability : Modular for easy upgrade
* Scalability : Support growth in user and transaction volume.

8) Preliminary Schedule and Budget

Requirement Analysis - 2 weeks
System Design - 3 weeks
Development - 8 weeks
Testing - 4 weeks
Deployment & Training - 2 weeks
Total ~ 19 weeks

Estimated Budget ~ 40 - 50 Lakhs