2) Credit Card Processing

=> ① Develop a problem statement.

As a financial institution, handling credit card transactions securely & quickly is challenging. We need a reliable system that processes payments, validates transactions, & protects customer data.

=> ② Develop a complete SRS document

1. Introduction

1.1) Purpose of this Document:

The purpose of this document is to specify the requirements & features of a Credit Card Processing System (CCPS). It provides a structured overview of the system objectives, scope, and deliverables for developers, testers, and stakeholders.

1.2) Scope of this Document.

The document describes the operation, main function, design & implementation of the system. The CCPS will handle secure authorization, transaction processing, settlement, & reporting.

1.3) Overview.

The CCPS is a secure, web-based solution aimed at managing credit card transactions between customers, merchants and banks.

2. General Description

The CCPS provides secure online handling of card payments, including transaction authorization, settlement, & account management for customers and merchants. It incorporates fraud detection, financial reporting, & transaction history.

3. Functional Requirements.

3.1) Transaction Management
- Authorize and process customer credit card transactions.
- validate card details & available balance.

3.2) Account Management:
- Maintain customer/merchant profiles & transaction history.

3.3) Fraud Detection:
- Identify & block suspicious or duplicate transactions.

3.4) Billing and Settlement:
- Calculate service charges and transaction fees.
- Handle settlement between banks, merchants, & cardholders

3.5) Reporting:
- Generate daily and monthly transaction reports.
- Provide audit logs for compliance.

4. Interface Requirements:

4.1) User Interface
- Simple dashboards for merchants and admins.
- Accessible via browser, android, ios application & POS terminal

4.2) Integration Interfaces:
- Integration with banking networks for transaction settlement.
- API support for e-commerce platforms & merchant systems.

5. Performance Requirements

- The system should authorize transactions within 2 seconds.
- capable of processing at least 10,000 transaction per hour.
- Ensure accurate transaction record across all modules.

6. Design Constraints.

6.1) Hardware Limitations:
- Should run on standard financial servers & POS terminals

6.2) Software Dependencies:
- Use a relational DBMS (eg. Oracle/MySQL)
- Implement secure frameworks such as Java Spring Boot or Node.js

7. Non-Functional Attributes:

7.1) Security:
- Enforce strong encryption, authentication, & ~~Reliant~~ compliance.

7.2) Reliability:
- Ensure 99.9% uptime with redundant backups.

7.3) Scalability:
- Support growth in transaction volume & new merchants

7.4) Portability:
- Accessible via multiple platforms & devices.

7.5) Reusability:
- Modern system design for upgrades & enhancements.

7.6) Compatibility:
- Compatible with major web browsers & payment APIs.

7.7) Data Integrity:
- Maintain accurate & consistent financial records.

8. Preliminary Schedule and Budget

The ccps will be developed in 8 months, covering 5 modules with 20000 LOC/module, at $1/LOC.
The total budget is $ 1,00,000 including planning, development, integration, testing & development.