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CREDIT CARD PROCESSING SYSTEM

1. Develop a problem statement

Problem statement

The growing volume of online and offline transactions requires a secure and efficient credit card processing system. Current methods face challenges such as fraud detection, transaction delays and complex reconciliation processes. There is a need for a reliable system that ensures fast, secure and accurate authorization, settlement and reporting of credit card transactions.

2. Develop a IEEE Standard SRS document

Software Requirements Specification

1. Introduction

1.1 Purpose of this document

The purpose of this document is to define the requirements and specifications for the development of a Credit Card Processing System. It will provide an overview of the project objectives, scope and deliverables.

1.2 Scope of this document

This document covers the overall functionalities and main objectives of the Credit card Processing System, including transaction authorization, fraud detection, billing and reporting. It also defines the development timeline and estimated cost.

1.3 Overview

The Credit Card Processing System is a secure software solution that enables the authorization, authentication and settlement of credit card

transactions for merchants and financial institutions.

2. General description
The Credit Card Processing System will serve banks, merchants and cardholders by providing secure transaction handling, fraud detection, reporting and integration with payment networks.

3. Functional Requirements
3.1 Transaction Processing
Authorize, authenticate and settle credit card transactions in real time. Support refunds, cancellations and chargebacks.
3.2 Merchant Management
Register and maintain merchant accounts with relevant details. Generate monthly transaction reports for merchants.
3.3 Fraud Detection
Monitor transactions for unusual activity and triggers alerts. Provide risk-scoring for high-value transactions.
3.4 Reporting and Auditing
Generate financial reports for reconciliation. Maintain transaction logs for audit compliance.

4. Interface Requirements
4.1 User Interface
Intuitive dashboards for merchants and administrators. Mobile and web-based access.
4.2 Integration Interfaces
Integration with bank APIs and payment

networks. Secure communication using encryption standards.

5. Performance Requirements

5.1 Response Time
Authorization response within 3 seconds.

5.2 Scalability
Support atleast 5000 concurrent transactions.

5.3 Data Integrity
Guarantee accuracy and concurrency of all financial records.

6. Design Constraints

6.1 Hardware Limitations
Must run on standard banking servers and secure Point-of-Sale devices

6.2 Software Dependencies
The system will use a relational database, implimentation in Java with SpringBoot for backend processing.

7. Non-Functional Attributes

7.1 Security
Implement robust authentication and authorization mechanisms to protect sensitive data.

7.2 Reliability
Ensure high availability and fault tolerance to minimize system downtime.

7.3 Scalability
Design the system to acomodate future growth and expansion.

7.4 Portability
Support multiple platforms and devices for

user accessibility.

7.5 Usability
The system shall have a user-friendly interface with clear navigation.

7.6 Reusability
The system shall use modular code design to facilitate future enhancements and maintenance.

7.7 Compatibility
The system shall be compatible with common web browsers.

7.8 Data Integrity
The system shall ensure accurate and consistent data storage and retrieval.

8. Preliminary Schedule and Budget
The credit card Processing System is estimated to take 8 months with a budget of $250,000, covering planning, development, security testing and deployment.