LAB 1 - CREDIT CARD PROCESSING SYSTEM

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AIM - To write the Problem Statement and Software Requirements Specification (SRS) for Credit Card Processing System.

Problem Statement:

To design a credit card processing system that overcomes the challenges faced by merchants, customers, and banks during credit card transactions. The current credit card processing system is unreliable, slow, and inefficient, leading to customer frustration and lost revenue. The system is prone to errors and delays, causing long wait times for customers and merchants. The system lacks scalability, and it cannot handle the increasing volume of credit card transactions, leading to processing delays and system downtime. Additionally, the system does not meet the latest security standards, and it is vulnerable to fraud and data breaches, putting customer data at risk. The credit card processing company needs a new system that is reliable, efficient, secure, and scalable, providing fast and accurate processing of credit card transactions while ensuring data privacy and security. The new system should also comply with the latest industry standards and regulations and provide a user-friendly interface for merchants to manage transactions and customer data.

Software Requirement Specification(SRS)

1 Introduction:

1.1 Purpose:

The purpose of this document is to provide a detailed description of the requirements for the development of a Credit Card Processing System. This document outlines the functional and non-functional requirements of the system and serves as a guide for the development team.

1.2 Scope:

The document covers the functional and non-functional requirements of the Credit Card Processing System. It also includes design constraints, interface requirements, performance requirements, non-functional attributes, and a preliminary schedule and budget.

1.3 Overview:

The Credit Card Processing System is a software application designed to enable businesses to accept credit card payments from their customers. The system provides a secure, fast, and reliable way to process credit card payments, reducing the risk of fraud and increasing customer satisfaction.

2 General Description:

The Credit Card Processing System should meet the following general requirements:

- The system should enable businesses to accept credit card payments from their customers securely and efficiently.
- The system should provide an easy-to-use interface for business owners to manage their credit card payments and transactions.
- The system should be flexible and customizable to accommodate different business needs and requirements.

3 Functional Requirements:

The Credit Card Processing System should meet the following functional requirements:

- Payment processing: The system should be able to process credit card transactions from different payment methods, such as online payments, in-person payments, and mobile payments.

- Authorization and authentication: The system should be able to verify the credit card details and authenticate the user to prevent fraud and unauthorized transactions.

- Payment gateway integration: The system should be able to integrate with different payment gateways and processors, such as PayPal, Stripe, and Square, to provide a flexible and versatile payment processing solution for the business.

- Transaction management: The system should be able to manage transactions, such as authorizations, captures, refunds, and chargebacks, providing a comprehensive and accurate view of the payment activity.

- Reporting and analytics: The system should be able to generate reports and analytics on payment activity, such as transaction volume, revenue, and chargeback rates, providing insights into the business's financial performance.

- Fraud detection and prevention: The system should be able to detect and prevent fraudulent transactions, such as through the use of machine learning algorithms and fraud detection rules.

4 Interface Requirements:

The Credit Card Processing System should provide the following interfaces to enable efficient communication between the system and its users:

- A user-friendly interface for business owners to manage their credit card payments and transactions.
- An interface for customers to enter their credit card information securely.
- An interface for the system to communicate with other payment gateways and card issuers.

5 Performance Requirements:

The Credit Card Processing System should meet the following performance requirements:

- The system should be able to handle a high volume of credit card payments and transactions.
- The system should have a response time of less than 2 seconds for all user interactions.
- The system should be able to handle multiple user sessions simultaneously without any downtime.

6 Design Constraints:

The following design constraints should be considered during the development of the Credit Card Processing System:

- The system should be developed using a secure architecture that can protect credit card data and transactions from unauthorized access.
- The system should be compatible with commonly used hardware and software platforms.
- The system should be designed to minimize maintenance requirements and ensure ease of upgrades.

7 Non-Functional Attributes:

The Credit Card Processing System should meet the following non-functional attributes:

- Security: The system should comply with the latest security standards, such as PCI DSS, and ensure that credit card data is protected against theft, fraud, and unauthorized access.

- Availability: The system should be highly available, with minimal downtime and fast recovery times in case of a failure. It should also have a disaster recovery plan in place to ensure business continuity in case of a disaster or outage.

- Scalability: The system should be designed to handle the increasing volume of credit card transactions as the business grows, with the ability to scale up or down as needed.

- Reliability: The system should be reliable, with a high degree of fault tolerance, error handling, and data consistency.

- Usability: The system should be easy to use for merchants, with a user-friendly interface and clear instructions for performing transactions and managing customer data.

- Compatibility: The system should be compatible with different types of credit cards,

payment methods, and merchant accounts, providing a flexible and versatile solution for the business.

8 Preliminary Schedule and Budget:

Schedule:

Requirements gathering and analysis - 2 weeks
System design and architecture - 4 weeks
Development and testing - 12 weeks
Integration and user acceptance testing - 4 weeks
Training and deployment - 2 weeks
Post-deployment support and maintenance – ongoing

Total project duration: 24 weeks (6 months)

Budget:

Salaries and wages for development team - $300,000
Hardware and software costs - $50,000
Training and deployment costs - $20,000
Post-deployment support and maintenance - $50,000 per year

Total project cost: $420,000