Credit card processing

Problem Statement

Credit card processing refers to the process of verifying and authorizing credit card transactions made by consumers for goods and services. The process involves several parties, including the cardholder, merchant, acquiring bank, and issuing bank.

The problem with credit card processing arises when transactions are fraudulent, leading to losses for merchants and financial institutions. Fraud can occur in several ways, including stolen credit card information, identity theft, and counterfeit cards.

Additionally, credit card processing can also be challenging for merchants due to high processing fees, chargebacks, and delays in receiving payment. This can result in financial strain and a negative impact on their business.

Therefore, the problem statement for credit card processing can be defined as finding efficient and secure ways to process credit card transactions, reducing fraud and associated losses, and minimizing processing fees and delays for merchants while ensuring a positive customer experience.
SRS for this

Software Requirements Specification

Introduction:

Purpose of this document:-
The purpose of this document is to define the software requirements for a system that aims to address the challenges of credit card processing, as described in the problem statement. The document will outline the functional and nonfunctional requirements for the system, providing a clear understanding of the features and capabilities it should have in order to meet the needs of the users and stakeholders involved in credit card processing. It will serve as a reference for the development team to design, build, test, and deploy the system.

Scope of this document:-

The scope of this document is to provide a detailed specification of the requirements for efficient and secure credit card processing. It outlines the functional and non-functional requirements for credit card processing, including but not limited to, the verification and authorization of transactions, fraud prevention measures, processing fees, chargebacks, and payment delays

Overview:-

The document defines the stakeholders, functional and non-functional requirements, and constraints of the system. The purpose of this document is to provide a comprehensive understanding of the system to the development team, stakeholders, and other relevant parties involved in the development, testing, and maintenance of the credit card processing system. This document is intended to serve as a guide and reference for the entire software development life cycle (SDLC) of the system.

General Description:

The Hotel Management System will provide the following general functions:

2.1 Objective of the User:

The objective of the user is to make secure and efficient credit card transactions for goods and services.

2.2 User Characteristics:

The users of the credit card processing system include cardholders, merchants, acquiring banks, and issuing banks. Cardholders are individuals who possess credit cards and use them to make purchases. Merchants are businesses that accept credit card payments from customers. Acquiring banks provide payment processing services to merchants, while issuing banks issue credit cards to cardholders.

2.3 Features and Benefits:

The credit card processing system provides several features and benefits, including: Efficient and secure processing of credit card transactions Fraud prevention and detection mechanisms to reduce losses for merchants and financial institutions Fast and reliable payment processing for merchants Seamless integration with existing merchant systems User-friendly interfaces for cardholders and merchants 24/7 customer support for any issues related to credit card processing

2.4 User Community:

The user community for the credit card processing system includes all individuals and businesses that use credit cards for transactions. This includes cardholders, merchants, acquiring banks, and issuing banks. The system aims to provide a positive user experience for all members of the user community and ensure the security and efficiency of credit card transactions.

Functional Requirements:

- User Authentication: The system should provide a secure way for cardholders to authenticate themselves before making a transaction. This can be done through the use of passwords, biometric authentication, or other secure means.
- Transaction Authorization: The system should verify the authenticity of the transaction and the cardholder's ability to make the payment. This can be done through the use of card verification codes, address verification, and other fraud prevention measures.
- Merchant Integration: The system should be able to integrate with various merchant platforms and point-of-sale systems to enable seamless payment
- processing. Payment Gateway: The system should provide a secure payment gateway to facilitate the transfer of funds from the cardholder to the merchant's account.
- Fraud Detection: The system should be equipped with advanced fraud detection capabilities to prevent unauthorized transactions and identify potential fraudulent activities.
- Chargeback Management: The system should be able to manage chargebacks and disputes between cardholders and merchants in a fair and efficient manner.
- Payment Processing Fees: The system should be able to calculate and process payment processing fees in a transparent and fair manner.

Interface Requirements:

- User interface: The system shall provide an intuitive and user-friendly interface for cardholders, merchants, and financial institutions to initiate and manage credit card transactions.
- Communication protocol: The system shall use a secure and reliable communication protocol for transmitting credit card information between parties, such as SSL/TLS.

- Data formats: The system shall support standard data formats for credit card information, such as ISO 8583, and adhere to the data security standards set by the Payment Card Industry Data Security Standard (PCI DSS).
- Integration with payment gateways: The system shall integrate with popular payment gateways, such as PayPal and Stripe, to enable merchants to process credit card transactions online.
- Integration with point-of-sale (POS) systems: The system shall integrate with popular POS systems, such as Square and Clover, to enable merchants to process credit card transactions in-person.
- Error handling: The system shall provide clear error messages and notifications to users in case of any errors or issues during the credit card processing.
- Accessibility: The system shall provide accessibility features, such as support for screen readers and keyboard navigation, to enable users with disabilities to access the system.

Performance Requirements:

- Response Time: The system should provide a fast response time to users for processing credit card transactions. The maximum response time should be less than 5 seconds. Transaction
- Throughput: The system should be able to process a high volume of transactions simultaneously. The minimum transaction throughput should be at least 500 transactions per minute.
- Availability: The system should be available 24/7 and should have a minimum uptime of 99.99%. This means that the system can only be down for a maximum of 5.26 minutes per year.
- Reliability: The system should be reliable and should not fail during a transaction. The system should have a mean time between failures (MTBF) of at least 10,000 hours.
- Security: The system should provide a secure environment for processing credit card transactions. The system should comply with Payment Card Industry Data Security Standards (PCI DSS) and should have appropriate security measures such as encryption, firewalls, and intrusion detection and prevention systems.
- Scalability: The system should be scalable and able to handle an increasing number of transactions as the user base grows. The system should be able to handle at least 20% growth in transaction volume per year.
- Compatibility: The system should be compatible with different operating systems and browsers. The system should be accessible from different devices such as laptops, desktops, and mobile devices. The system should support all major credit card brands such as Visa, Mastercard, American Express, and Discover.

Design Constraints:

- Security: The system must adhere to strict security standards and protocols to ensure that customer data is protected and transactions are secure.
- Compatibility: The system must be compatible with a wide range of credit card types and payment methods to accommodate different customer preferences and needs.
- Regulatory compliance: The system must comply with relevant regulations and standards, such as the Payment Card Industry Data Security Standard (PCI DSS), to ensure that it meets legal and industry requirements.
- Accessibility: The system must be accessible to users with disabilities, such as visually impaired or hearing-impaired users, in compliance with relevant accessibility standards and guidelines.

Non-Functional Attributes:

- The following non-functional attributes are required for the Credit card processing:
- Security: The system should be secure and protect against unauthorized access, data breaches, and other security threats.
- Scalability: The system should be able to handle an increasing number of transactions as the business grows.
- Maintainability: The system should be easy to maintain and update over time, with minimal disruption to ongoing operations.
- Compliance: The system should comply with relevant regulations and standards, such as PCI DSS.
- Accessibility: The system should be accessible to users with disabilities and comply with relevant accessibility standards.

Preliminary Schedule and Budget:

The development of the Credit card processing is expected to take approximately 12 months, with an estimated budget of $5,000. The development team will work in an

agile development environment, with regular sprints and iterations to ensure the software meets the requirements of stakeholders and users.

In conclusion, the Credit card processing will provide a comprehensive and integrated solution for managing Credit card operations, improving efficiency, accuracy, and user experience. The software will be designed to meet the functional and non-functional requirements of stakeholders and users, with a focus on security, reliability, and scalability.