SOFTWARE REQUIREMENTS SPECIFICATION

for

Online Credit Card Proccessing

Atishay Jain
Ayush Jaiswal
Divija Ankam
Divya Bodapudi
D Shiva
Arvind Swami
Pranay Reddy

NIT Warangal CSE-A Section

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1.Introduction

1.1 Purpose

The purpose of this document is to provide a detailed description of Credit Card Processing System. The objective of this website is to provide a user-friendly platform that provides business and technology solution to help the merchants ,customers improve their payment experience online.. This document will describe the purpose, scope, conventions, references, detailed description of functionalities and external interfaces of the project under consideration. It also describes what the software will do and the constraints under which it will perform.

1.2 Document Conventions, definitions and abbreviations

Authorization service - The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user.
This Document was created based on the IEEE template for System Requirement Specification Documents.
The list of abbreviations and acronyms used in the rest of the document is as follows:

• srs = software requirements and specifications

1.3 Intended Audience and Reading Suggestions

• Any market enterprise who need support for transfer of funds online.
• can also be used for payment processing online as in ecommerce website etc.

1.4 Project Scope

The name of the website is 'Online pay'. This website is intended to offer facilities to transfer funds online in a secured manner. The company or customer who wants to utilize this services are also provided a facility to create a free account, login and browse the services available.

This site will even provide a division to apply for a Credit Card when a new user login. It Integrates with Sales Order, Accounts Receivable, and e-Business Manager

1.5 References

IEEE Software Requirement Specification format.

1.6 Technologies To Be Used

- HTML
- CSS
- NodeJS

1.7 Overview

SRS includes overall description, External Interface Requirements, System features, other non-functional requirements and other requirements.
Overall Description will describe major role of the system components and inter-connections.
External Requirements will describe about the user, external, software, communications interfaces.
System features will describe response sequences and functional requirements.
Non-functional requirements will aware you about performance safety and security.

2.1 Product Perspective

The main product perspective is to provide an efficient online platform to transfer funds in a secured manner.
This solution involves signing up for a free Business Account. Once this is done and the e-commerce site is properly configured, you can accept payments from Visa, MasterCard, Amex and Discover cards payments.
The product is complex within the following areas:
•many discerning online shoppers do not give their credit card details to an unknown online merchant
•Higher risk of fraud for using stolen credit cards
•security for funds transfer is a major task

2.2 Product Functions

The functionality of the software can be described in terms of use cases. The main use cases involved in this software are:
•Basic Functionalities:

Select Card for Payment
Goal: To use the cash in advance to user in their Bank account for purchasing an item. Primary
Actor: Users of the system, namely the customer or any individual person
Precondition: User should have a valid bank account linked to the respective credit card and a stable internet connection
Main Success Scenarios:
1. Open the website
2. Purchase an item in the store.
3. Choose 'Credit Card' as payment mode.
4. Select particular company Credit Card for payment.
Exceptional Scenarios:
1. Due server issues the selected payment mode may be blocked.

Give Details
Goal: To pay the merchant through an online payment gateway.
Primary Actor: Users of the system, namely the customer or any individual person
Precondition: User must have a bank account linked to the Credit Card chosen.

Main Success Scenarios:

1. Open the website.
2. Fill up the details and pin asked on Screen.

3. Press enter or click on 'Submit'.

Exceptional Scenarios:

1.PIN may not match with any of the entries in the database

• Show an error message and stay on the same story

Approval

Goal: To get access to use cash in card

Primary Actor: Users of the system, namely the customer or any individual person

Precondition: Given details are true.

Main Success Scenarios:

1. Once the data is transmitted, the credit card issuer can approve or decline the transaction. This is based on the validity of the card, the trans- action, as well as the cardholder's available funds.

Exceptional Scenarios:

1. The internet connection might be lost during the verification.

• do not make any change, keep the user logged in

Submitting a Batch Closure

Goal: To Complete Credit Card payment process with a batch closure.

Primary Actor: Users of the system namely merchant of store.

Precondition: User must have his bank account registered already in website.

Main Success Scenarios:

1. Merchant choose batch closure at the end of day to complete
Credit Card Process.
2. System verify all the transactions done on that day and closes them by transferring funds to processor's bank.
3. The processor's acquiring bank then collects the funds from the credit card issuers.

Exception Scenarios:

1. Verification by the system may fail.

• Show an error message and prompt the user for requesting once again

Depositing Funds

Goal: To transfer Funds to merchant's business account.

Primary Actor: Users of the system.

Precondition: User must log into the system.

Main Success Scenarios:

1. The processor's acquiring bank then deposits the funds into the
merchant's business account. This typically takes up to 48 hours.

Exception Scenarios:

2.3 User Classes and Characteristics

There are mainly two types of users for this product namely merchants/customer(User) and the gateway processors like Visa, American express, Mastercard etc. They must have minimum knowledge on how to use this web application.

Gateway Processor System:

•And the gateway processor systems must have proper interaction with the User and

must store the given details properly.
•Validate the credit card payments to ensure that the card number is valid and the card has not expired.
•Deposit processing to apply the deposit payment to the card.
•Prepare Credit card transaction reports that show authorization codes, amounts, and error/success messages.

2.4 Operating Environment

This product is a web application and it works on any internet browser provided with proper internet connection (on the merchant side).On the other side there must be a database provided to store the required details and the connection and permission to access the corresponding bank databases are needed.

2.5 Design and Implementation Constraints

The number of users who can access this website may be limited because the website interaction with several users at a time makes server busy and slows down the system performance.
Trusted if using a well-known third-party processor.
Must suit for higher-volume sites, Cheaper transaction rates and Getting money transferred may be very fast.
Must provide fraud prevention measures and fraud protection programs.

2.6 Assumptions and Dependencies

• The Applicants and Administrator must have basic knowledge of computers and English Language.
• The applicants may be required to scan the documents and send.
• While registering all the details entered by the user are assumed to be correct.
• It is assumed that the permissions are granted by the users as well as the bank departments to access the bank databases.

3 External Interface Requirements

3.1 User Interfaces

As it is a web application, its user interface must be compatible with all the web browsers like Google chrome, Mozilla Firefox, Internet explorer etc.. and Mainly all the communications with the system(Gateway processor) is done through the User interfaces only.
The interface must be user friendly.

3.2 Hardware Interfaces

The server is directly connected to the client systems. The client systems have access to the database in the server.

3.3 Software Interfaces

• Front End Client - The applicant and Administrator online interface is built using JSP and HTML. The Administrator's local interface is built using NodeJS.
• Web Server - Glassfish application server(SQL Corporation).
• Back End - SQL database.

3.4 Communication Interfaces

As this product mainly deals with the online funds transfer the payment details must be recorded and encrypted and the communication of these payments details over the server must be secured by using https protocols etc.

4 System Features

Features that are performed by the system are System Features, Here the Gateway Processor verify, validate and respond to the user in a sequential manner.
• Accept credit card numbers on the web, store them in a database, then process them offline.
• Giving responses to the users accordingly.
• Credit card processing with a third-party credit card processing company.

4.1 Description and Priority

In a sequential procedure of Credit Card Processing the system will give priority according to that particular phase of process the system is going through. If in an instance the user give his credit card details then the system give high priority to store and verify the provided details then all other phases of execution are given lower priority.

4.2 Stimulus/Response Sequences

• Accept the Selected card and provide its corresponding form to fill the particulars.
• Store and verify the details provided by the users and respond accordingly.
• Verify the transaction funds amount with available funds in customer account and approve or decline the transaction.
• Check the batch closure with all the transactions done on that day.
• Transferring the funds to the processor's bank by the end of the day.

4.2.1 Functional Requirements

The software must be able to access the database for particular verification and validation. The transaction failure should have a backup plan so not to lose any important information. System should be allocated with certain amount of memory/space to store the details during the system communication with the users.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

• Login must be validated very quickly.
• Credit card validity and balance verification must be done very quickly.
• Performance also depends on time taken for funds transfer to the Processor's bank.
•Friendly communication with the databases also increase performance of the system.

5.2 Safety Requirements

Database plays a crucial role so its updates must recorded in a log file so that database can be recovered in case if there is any database failure.

5.3 Security Requirements

Software system must maintain secure gateway processor ,which will not reveal user credit card details to an unknown user.
Given details are encrypted and stored in the system safely. Using a
secure third party will make the software more secure.
As this product mainly deals with the online funds transfer the payment details must be recorded and encrypted and the communication of these payments details over the server must be secured by using https protocols etc.

5.4 Software Quality Attributes

If the same user used the product many times then the system fills the card details automatically so that it helps user by saving his time and efforts.
And the system should immediately respond to the User i.e., Response time of the soft- ware should be minimized.
If the user takes longer time to give details of Credit Card or transaction the website must block the flow and ask the user to start from the begin so as to perform secure transaction.

5.5 Business Rules

The merchants must pay some amount in the name of batch fee to transfer funds from one bank account to the other.
There will be a maximum limit of amount that a user can use from his card in a particular duration of time.

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project and so on. Add any new sections that are pertinent to the project.>

6.1 Appendix A: Glossary

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

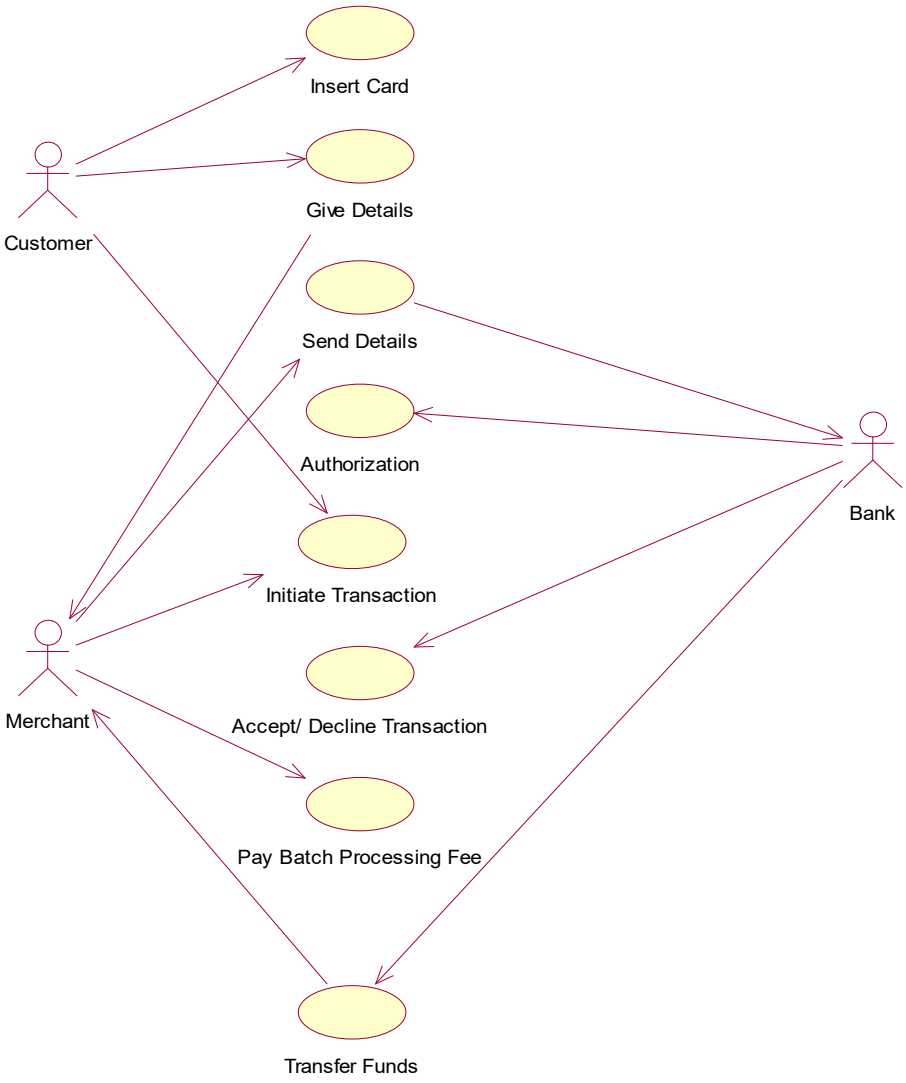
6.2 Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

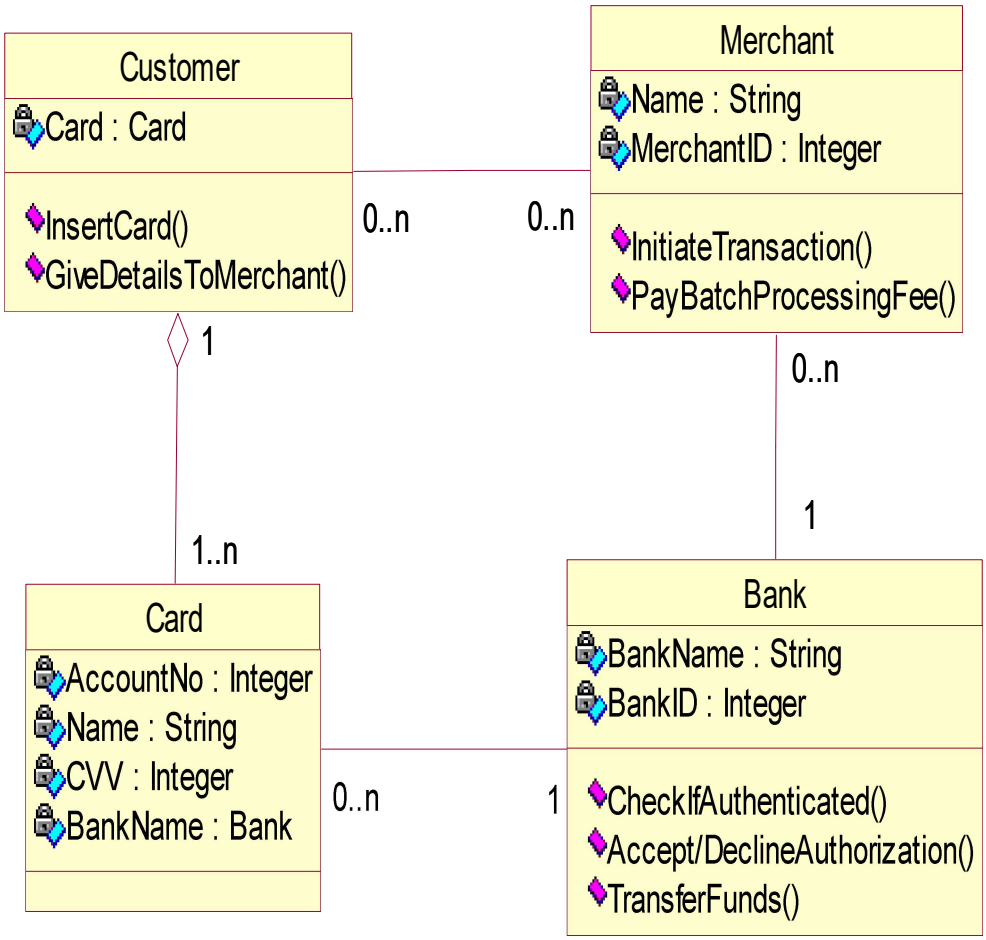
6.3 Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>

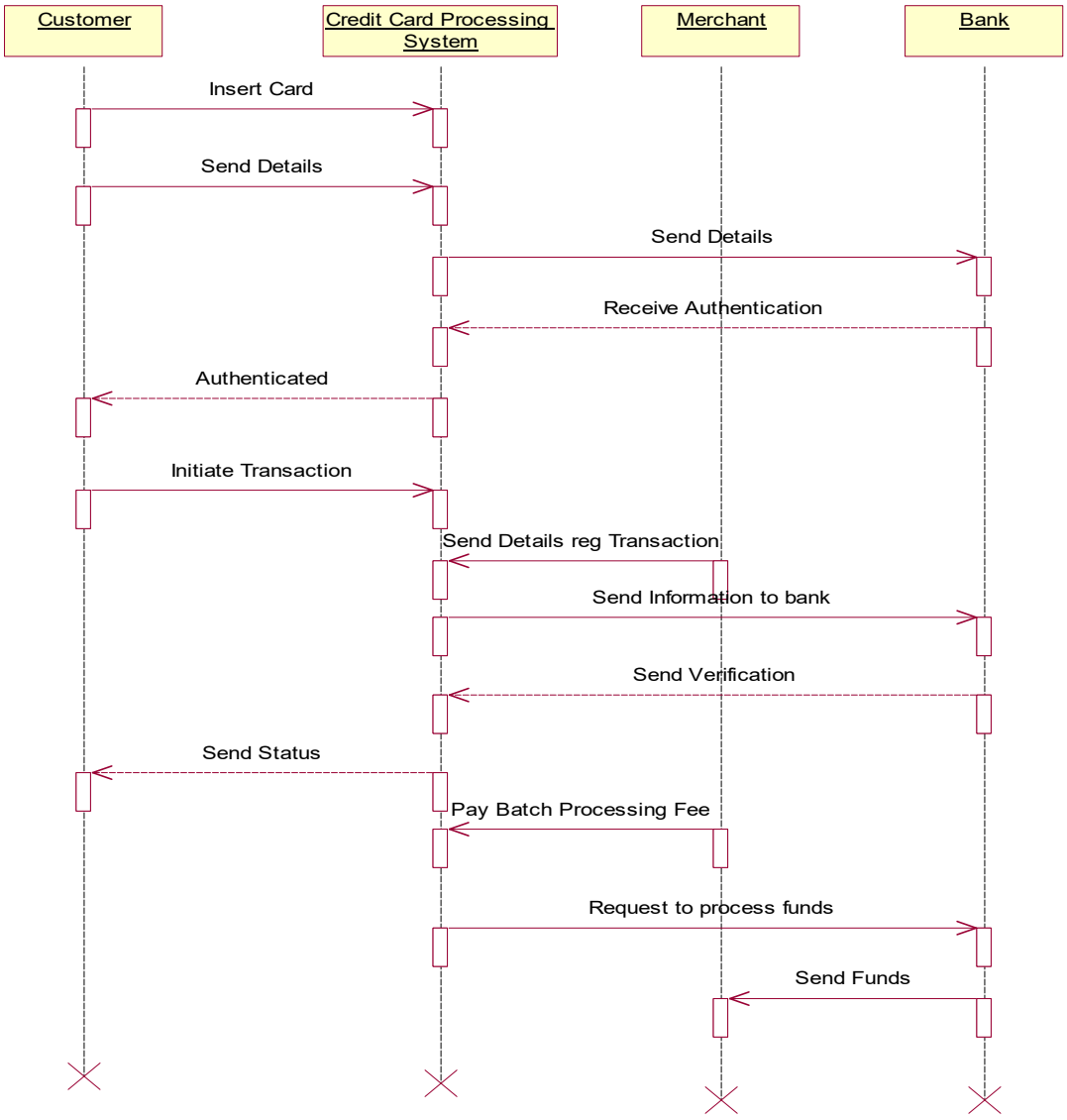
UML Diagrams:
Use case diagram:



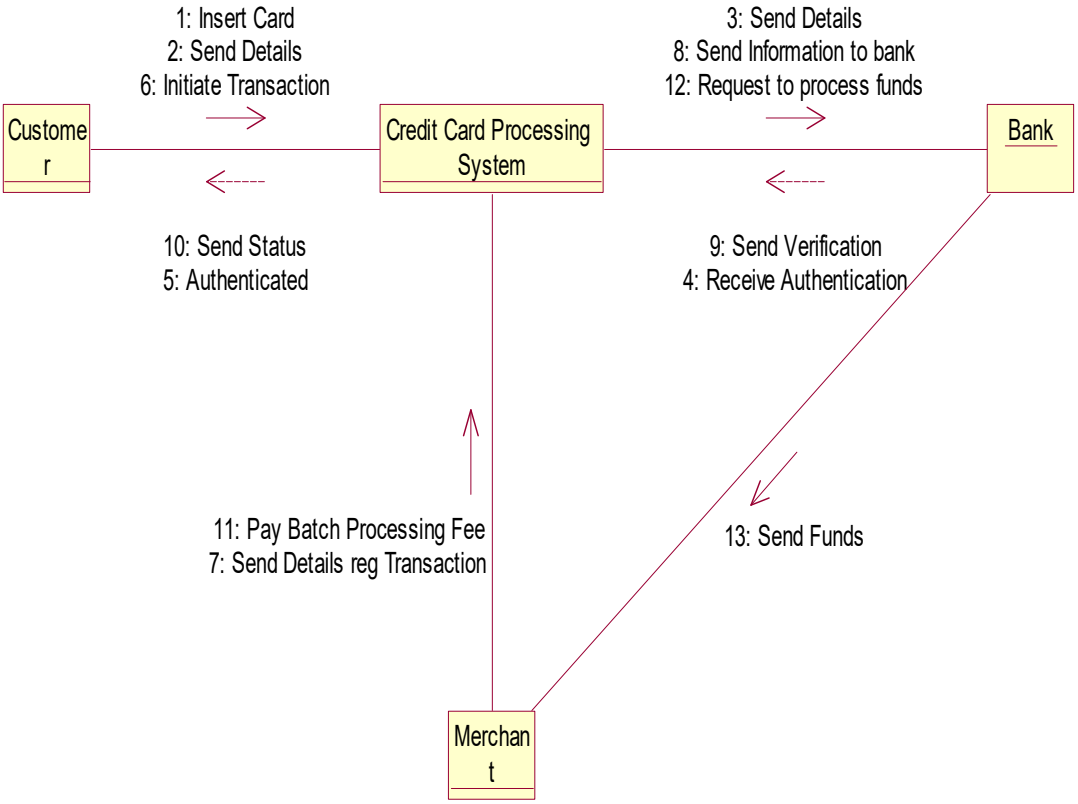
Class Diagram:



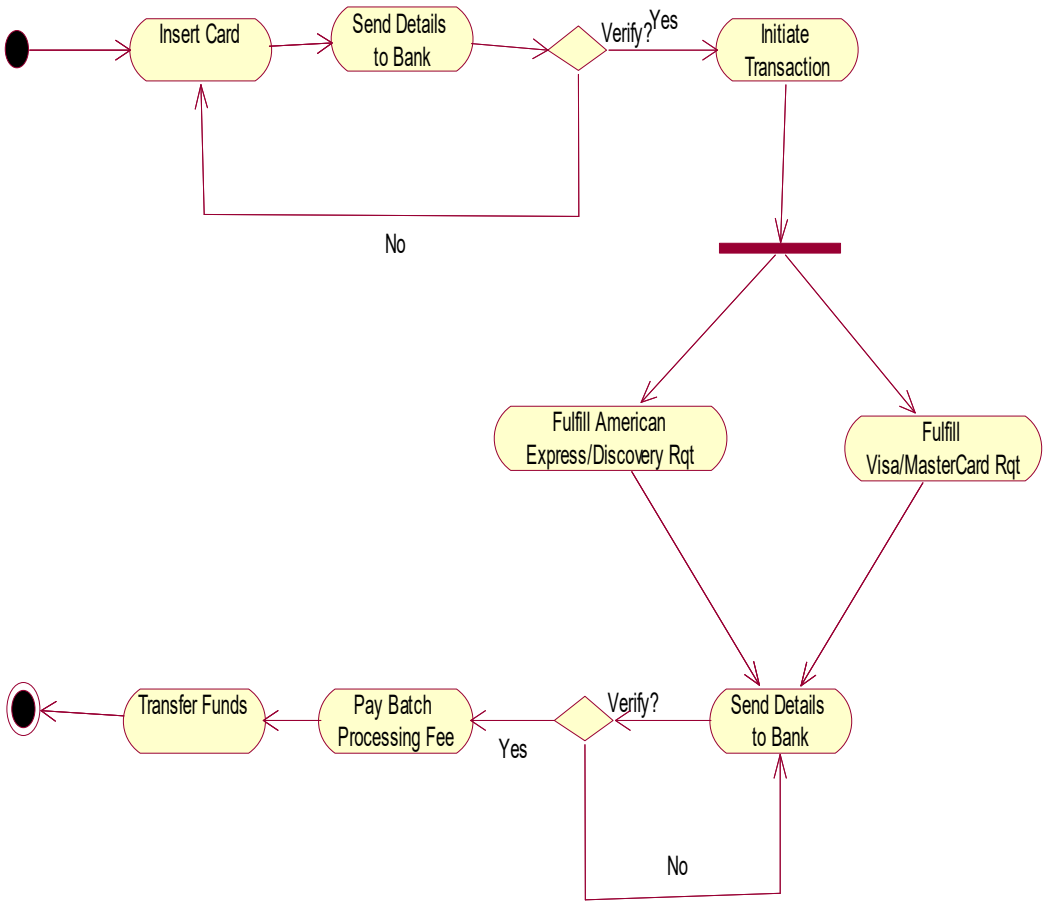
Sequence Diagram:



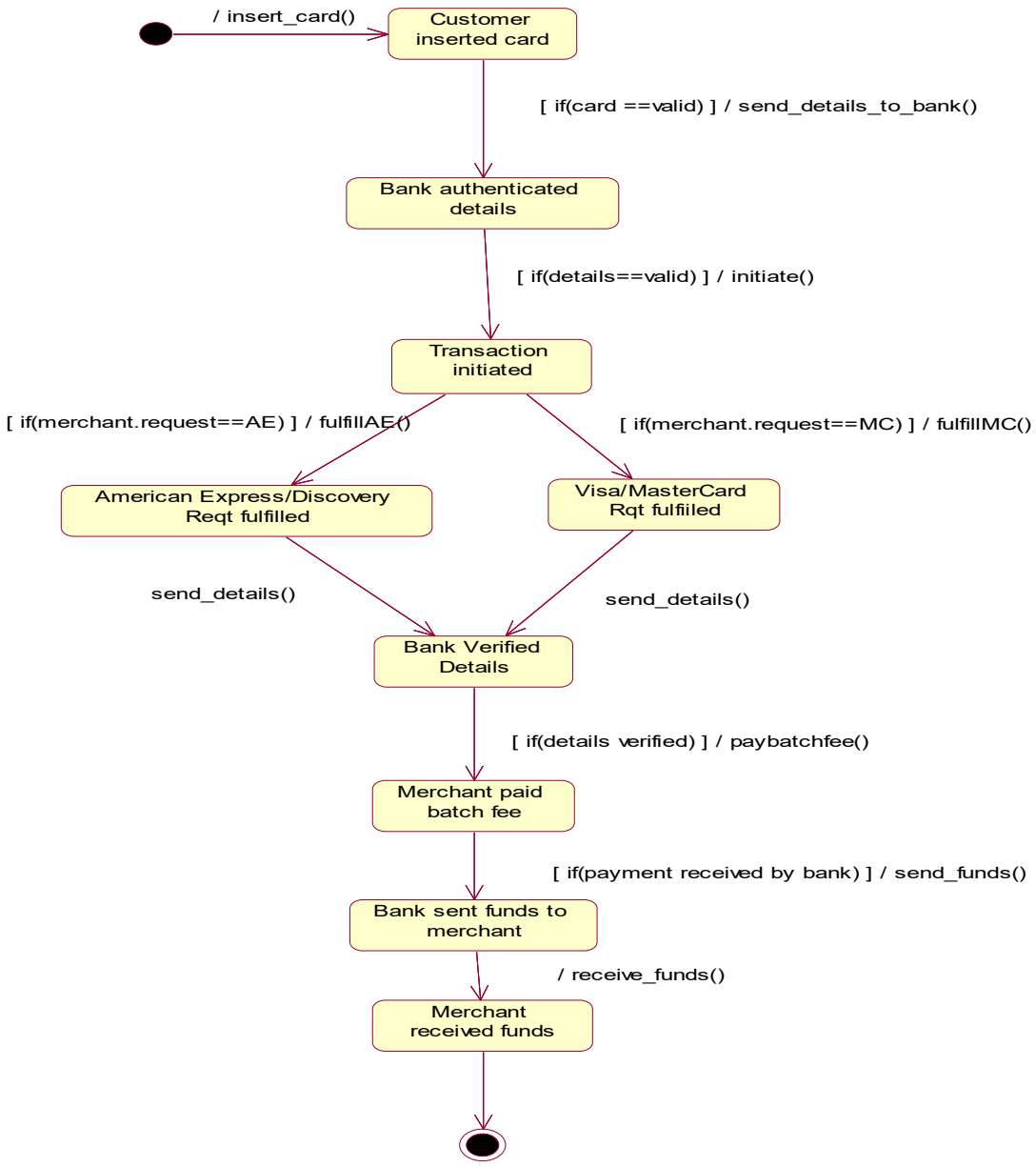
Collaboration Diagram:



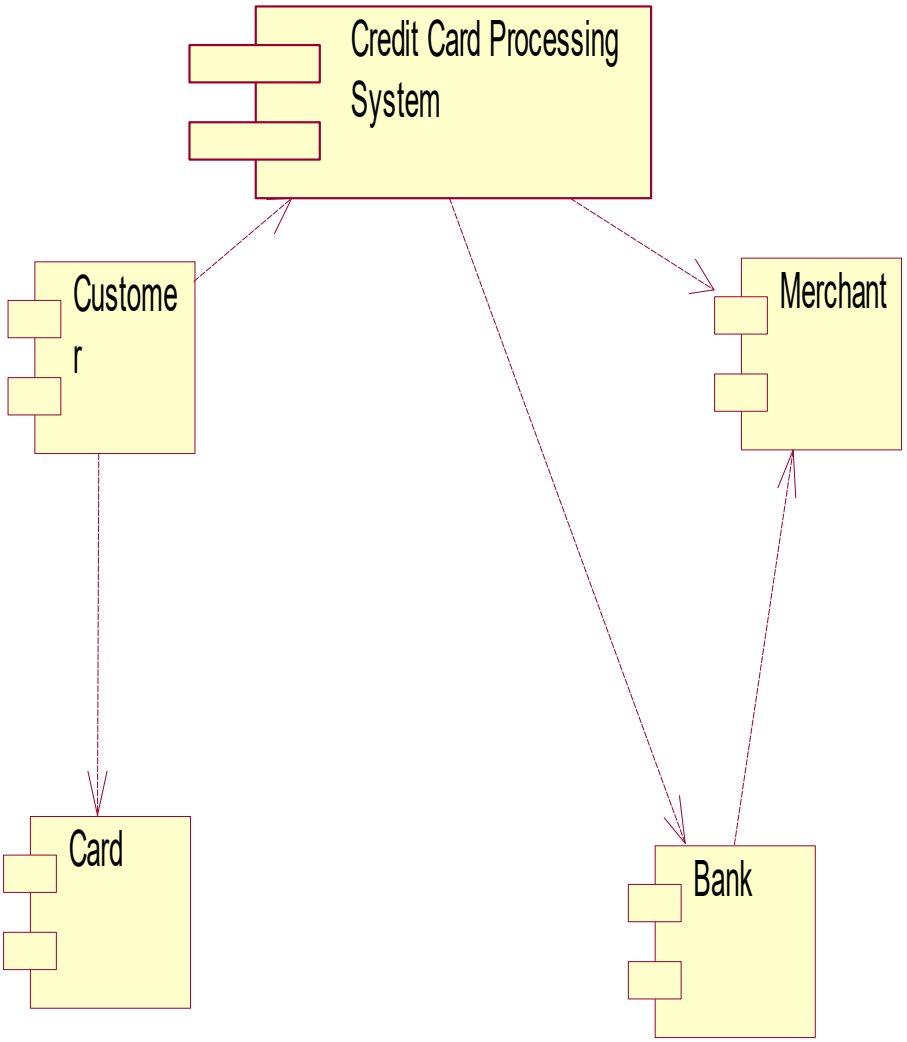
Activity Diagram:



Statechart Diagram:



Component Diagram:



Deployment Diagram: