

CREDIT CARD PROCESSING SYSTEM

SOFTWARE REQUIREMENTS SPECIFICATION

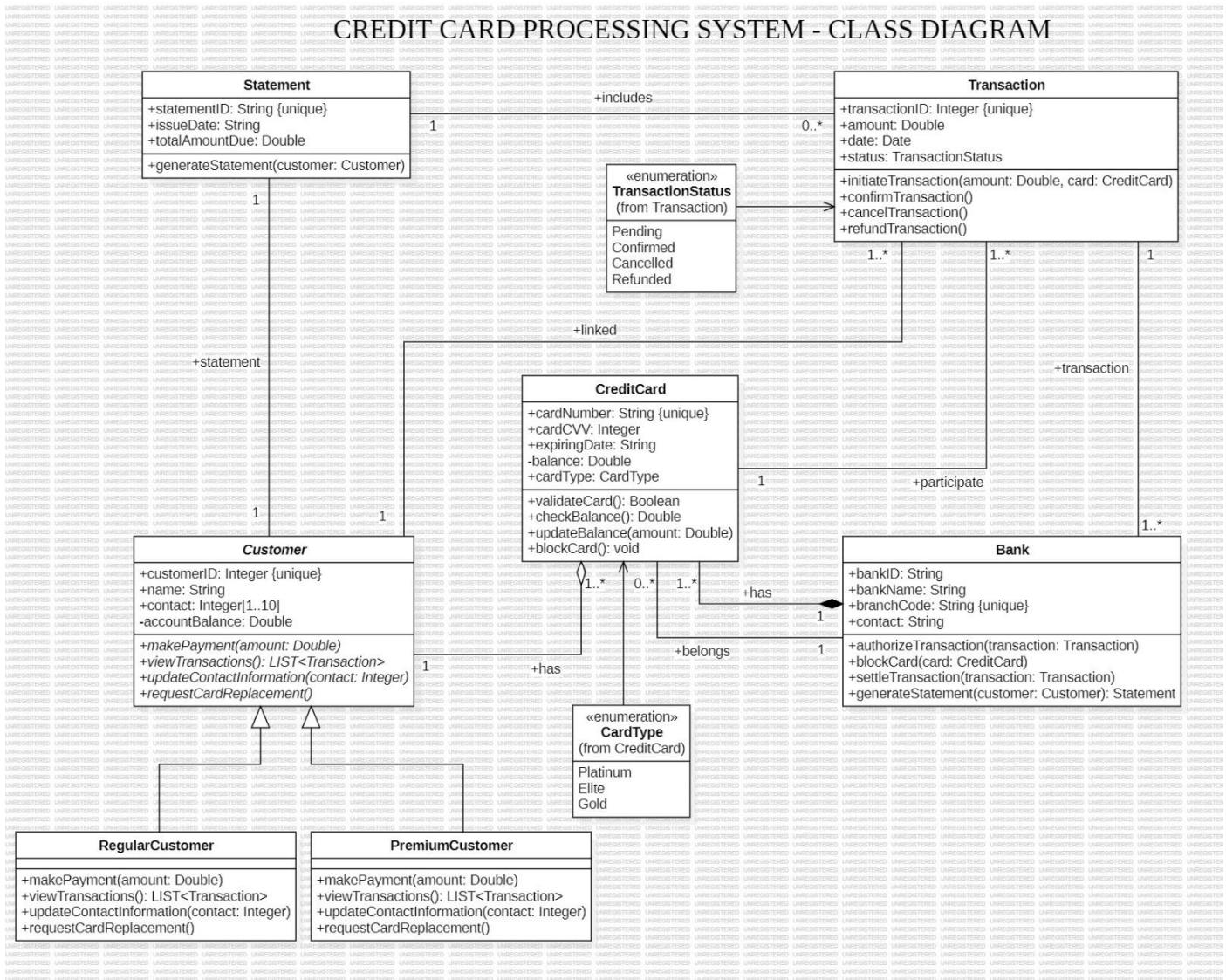
Software Requirements Specification		General Description
Version 1.0 Date: 2023-09-15 Author: John Doe		Page: 1 of 10
1. Introduction	1.1 Purpose of this Document	2.1 User Objectives: The system should enable merchants to quickly and securely process credit card transactions, manage transaction records, generate reports, and integrate seamlessly with existing business systems.
1.2 Scope of this Document	1.2.1 Functional Requirements: This document defines the requirements for a software system's functionality, performance expectation, and design constraints, serving as a comprehensive guide for the development team.	2.2 User Characteristics: The system will be used by cashiers, store managers, and accounting personnel, each with varying levels of technical proficiency. Therefore, the system should offer a user-friendly interface with appropriate access controls.
1.3 Overview	1.3.1 Non-functional Requirements: This document encompasses the functional and non-functional requirements for the credit card processing system, including UI/UX specifications, transaction processing details, security protocols, and interface requirements for interacting with external systems like payment gateways and banks.	2.3 Features:
	1.3.2 System Requirements: The credit card processing system will be robust and secure software solution enabling businesses to accept credit card payments from customers. It will manage transaction authorization, settlement, and reconciliation processes while adhering to industry security standards, particularly the payment card industry Data Security Standard (PCI DSS).	<ul style="list-style-type: none">• Transaction Processing: Process credit card authorizations, captures, refunds, and voids.• Security: Implement robust security measures to protect sensitive cardholder data and ensure PCI DSS compliance.• Reporting and Reconciliation: Generate detailed transaction reports and facilitate easy reconciliation with bank statements.• Integration: Provide APIs or integration capabilities for seamless connections with other business systems, such as POS terminals and accounting software.

<p>2.4 Benefits: The system will streamline the payment process, reduce processing costs, improve cash flow, minimize the risk of fraudulent transactions, and enhance customer trust.</p> <p>3. Functional Requirements:</p> <ul style="list-style-type: none"> 3.1 Transaction Processing: The system shall support various card types, shall perform real-time authorization requests to appropriate card networks and facilitate timely settlement. 3.2 Security: The system shall encrypt all sensitive cardholder data at rest and in transit, shall use tokenization to replace actual card numbers with unique tokens during processing. 3.3 Reporting and Reconciliation: The system shall generate detailed transaction reports, including date, time, amount, card type and authorization status. 3.4 Integration: The system shall offer APIs or SOAs for integration with other business systems, enhancing seamless operations. 	<p>4. Interface Requirements:</p> <ul style="list-style-type: none"> 4.1 User Interface: The system shall provide a web-based UI accessible through both desktop and mobile devices. 4.2 External System Interfaces: <ul style="list-style-type: none"> Payment Gateways: For device communication and transaction routing. Acquiring Banks: To facilitate the receipt of funds for processed transactions. Card Networks: For transactions authorization and settlement. <p>5. Performance Requirements:</p> <ul style="list-style-type: none"> 5.1 Transaction Processing Speed: The system should process authorization requests within a few seconds to ensure a smooth checkout experience for customers. 5.2 System Availability: The system should be highly available, targeting an uptime of 99.99% to minimize disruptions in credit card processing. 5.3 Scalability: The system should be scalable to handle increasing transaction volumes as the business grows.
---	--

<p>6. Design Constraints:</p> <ul style="list-style-type: none"> 6.1 Security Compliance: The system must comply with the Payment Card Industry Data Security Standard (PCI DSS) to ensure the secure handling of credit card information. 6.2 Legal and Regulatory Requirements: The system must adhere to all relevant legal and regulatory requirements related to credit card processing in the regions where it operates. 7. Non-Functional Attributes: <ul style="list-style-type: none"> 7.1 Security: 7.2 Reliability: 7.3 Usability: 7.4 Maintainability: 	<p>8. Preliminary Schedule and Budget</p> <p>8.1 Schedule: The project is estimated to take 6 months, broken into key phases:</p> <ul style="list-style-type: none"> • Requirements gathering (2 weeks) • Design Phase (1 month) • Development Phase (3 months) • Testing Phase (1 month) • Deployment and training (2 weeks) • Post-deployment support (2 weeks) <p>8.2 Budget: The total estimated budget is \$150,000, allocated as follows:</p> <ul style="list-style-type: none"> • Requirements gathering: \$15,000 • Design Phase: \$25,000 • Development Phase: \$80,000 • Testing Phase: \$20,000 • Deployment and training: \$7,500 • Post-deployment support: \$2,500
--	---

UML DIAGRAMS

CLASS DIAGRAM



enumerations
Status
Pending
Confirmed
Cancelled
Refunded

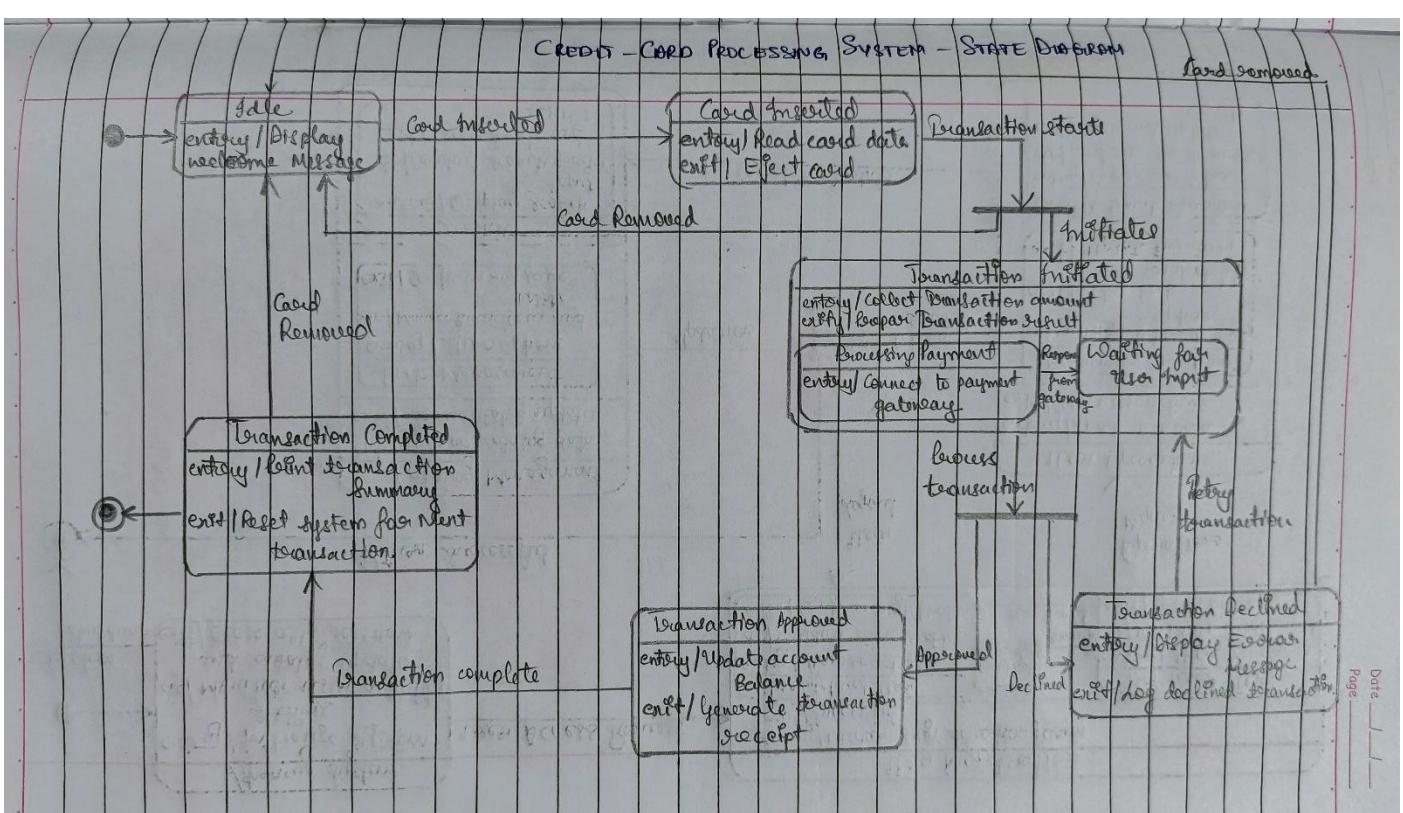
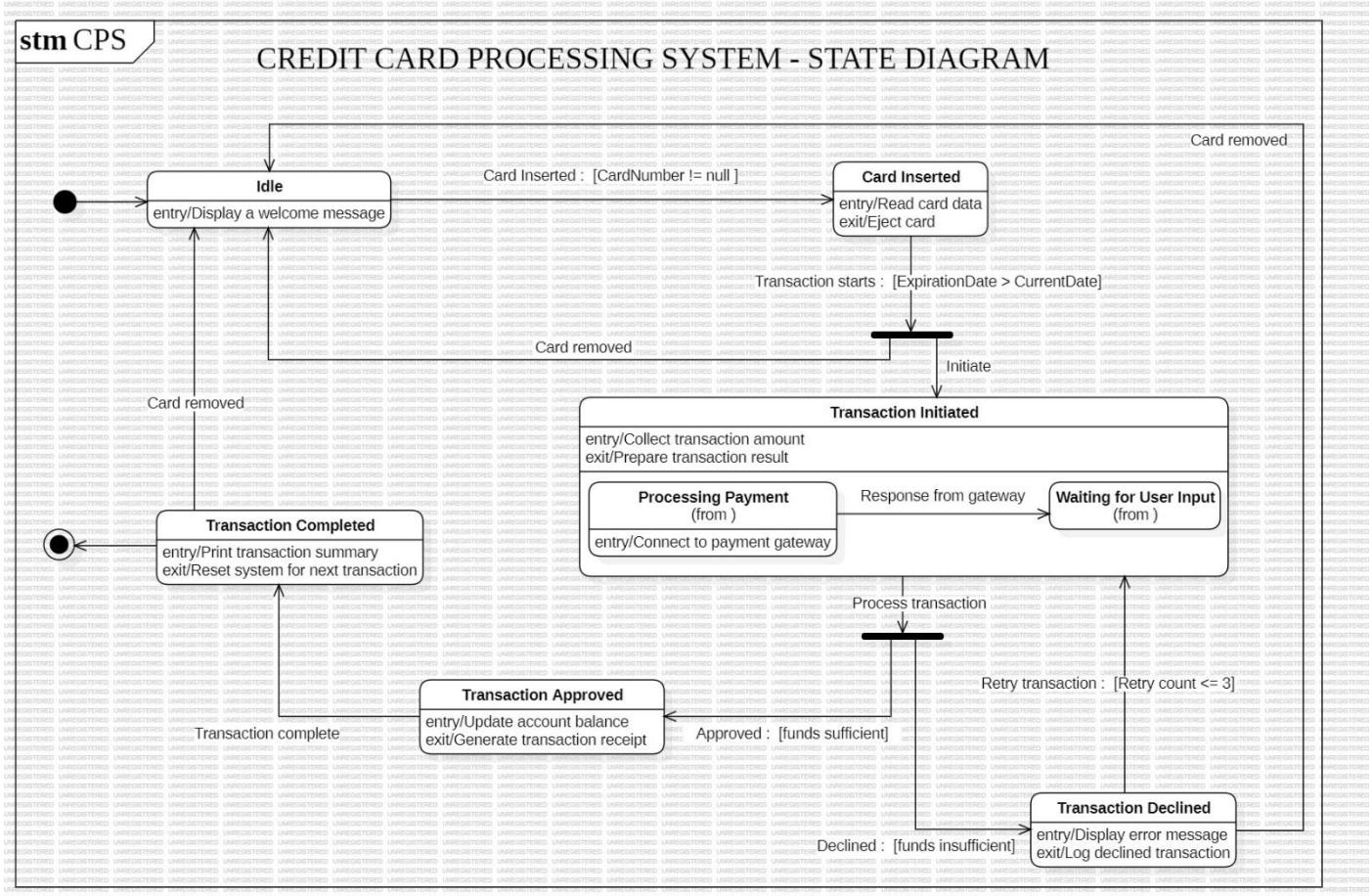
2. CREDIT CARD PROCESSING.

CreditCard	Transaction
CardNumber : String	participate
cardCvv : Int	reject
expiryDate : String	Proceed
Balance : float	getBalance
validateCard()	startSession
checkBalance()	getAvailable
updateBalance()	onEventBelongs
blockCard()	unblockCard
trans	linked
	start : BB420

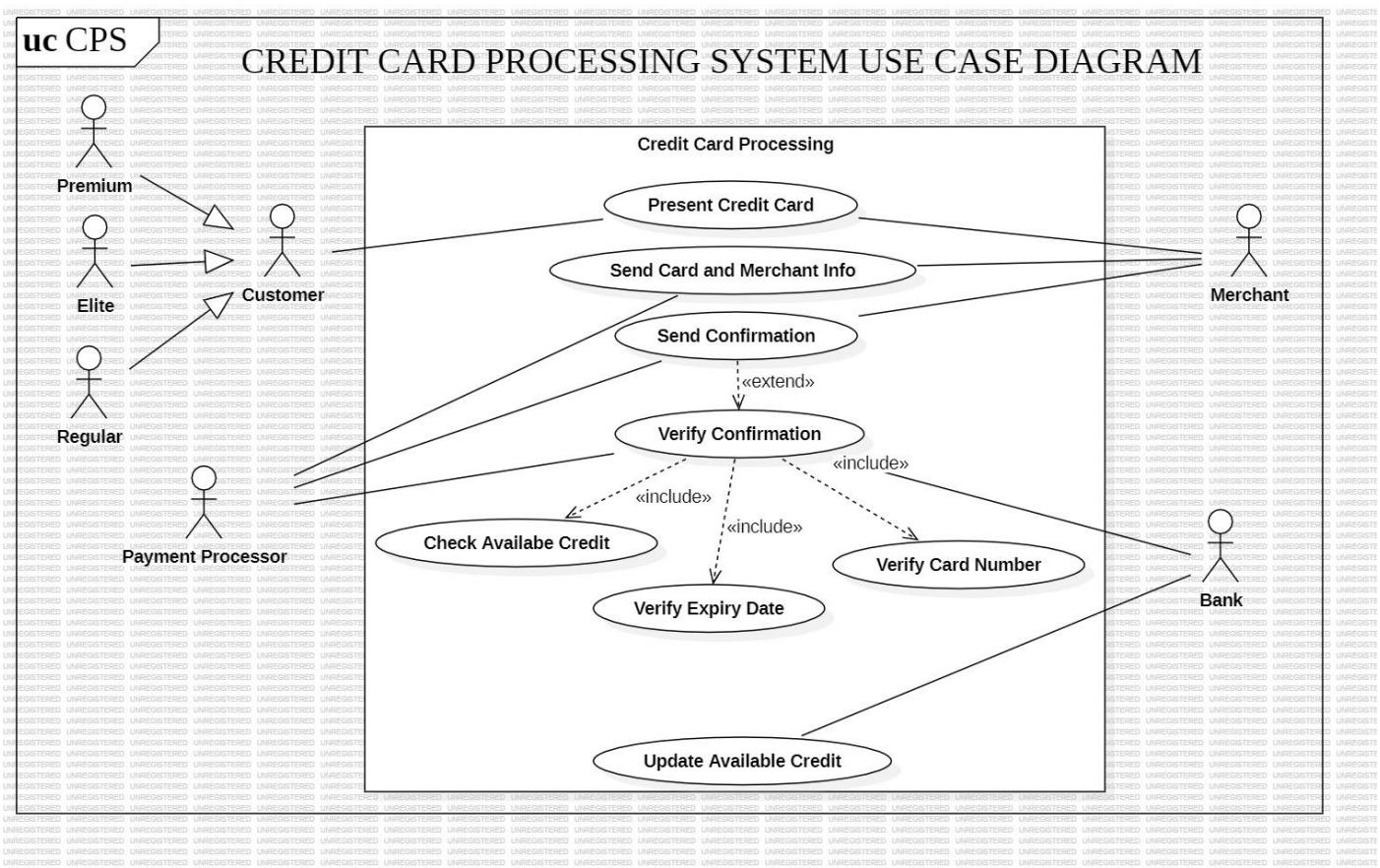
Customer	Bank
customerId : Int	bankId : Int
Name : String	bankName : String
contact : Int	branchCode : String
accBalance : float	contact : Int
makePayment()	authorizeTransaction()
viewTransaction()	blockCard()
updateContactInfo()	settleTransaction()
requestCardReplacement()	generateStatement()

Statement	Statement
	ID : String IssueDate : String TotalAmountDue : Double generateStatement()

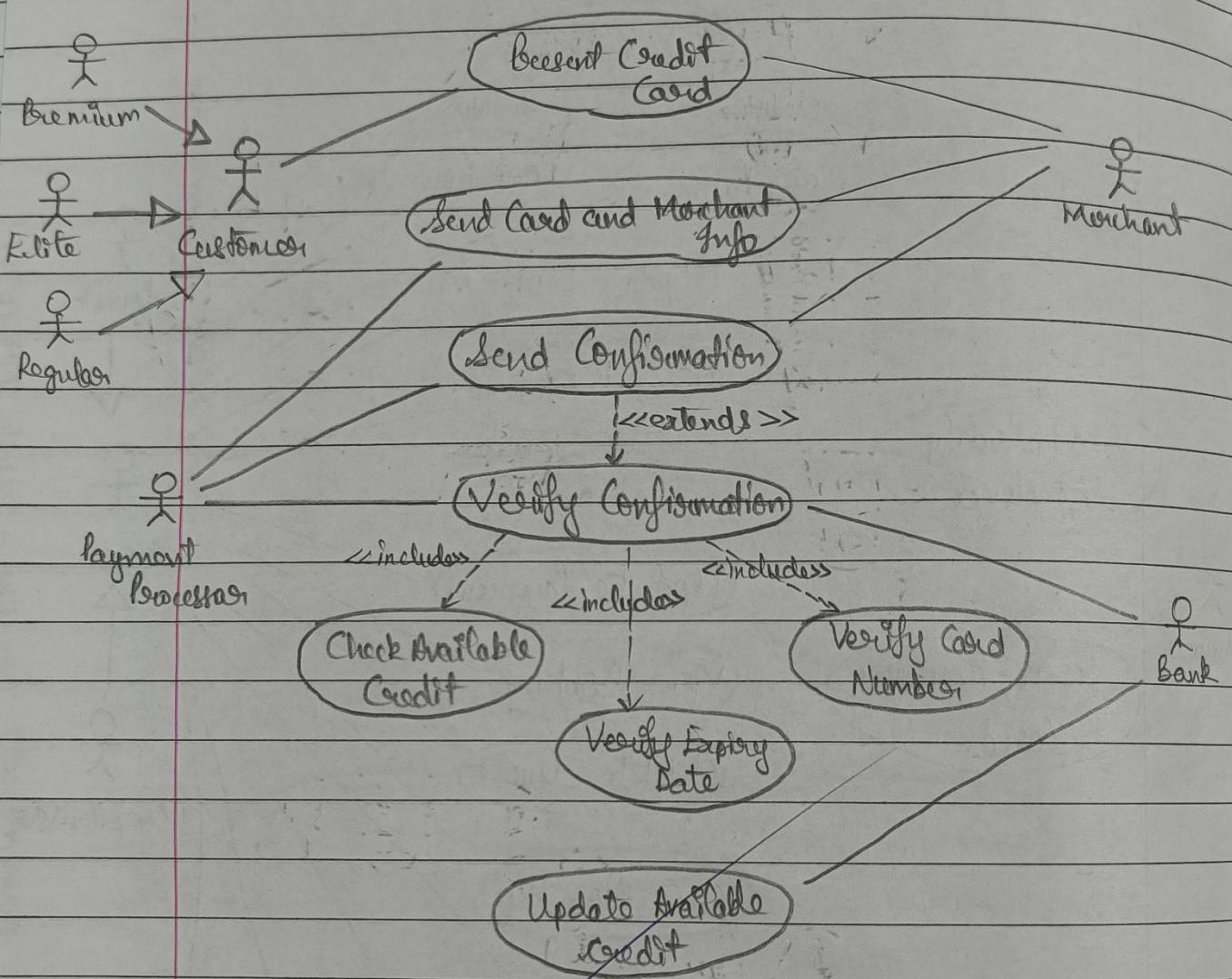
STATE DIAGRAM



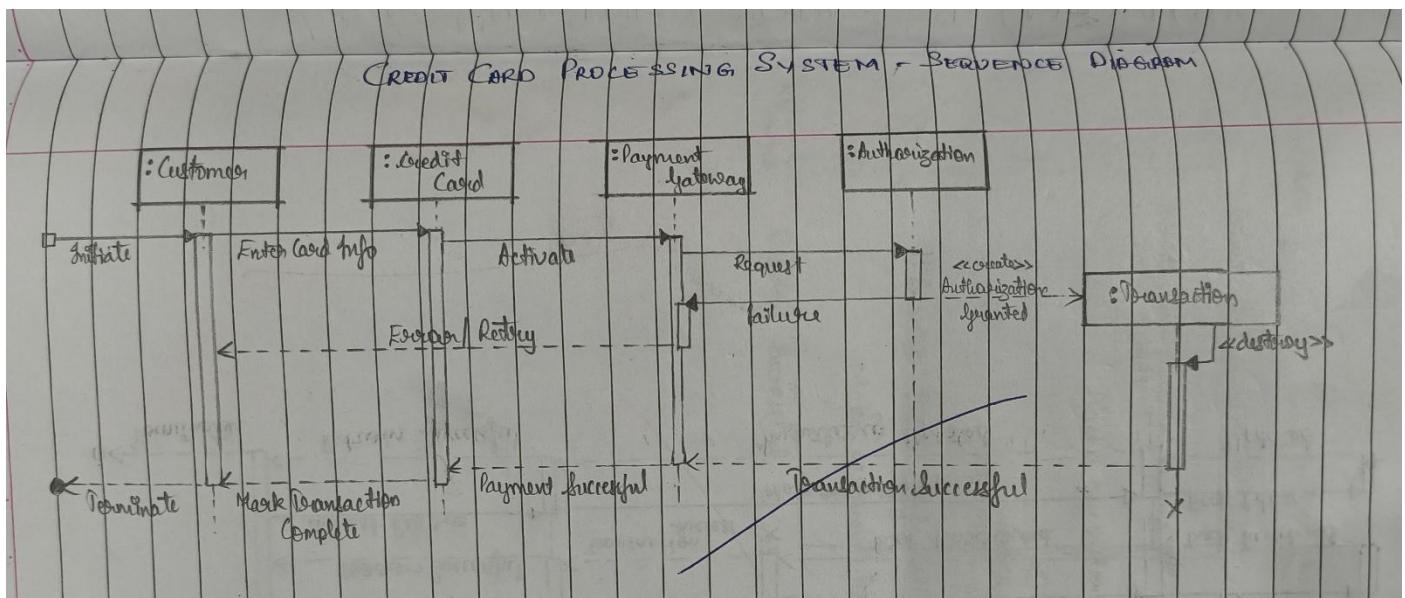
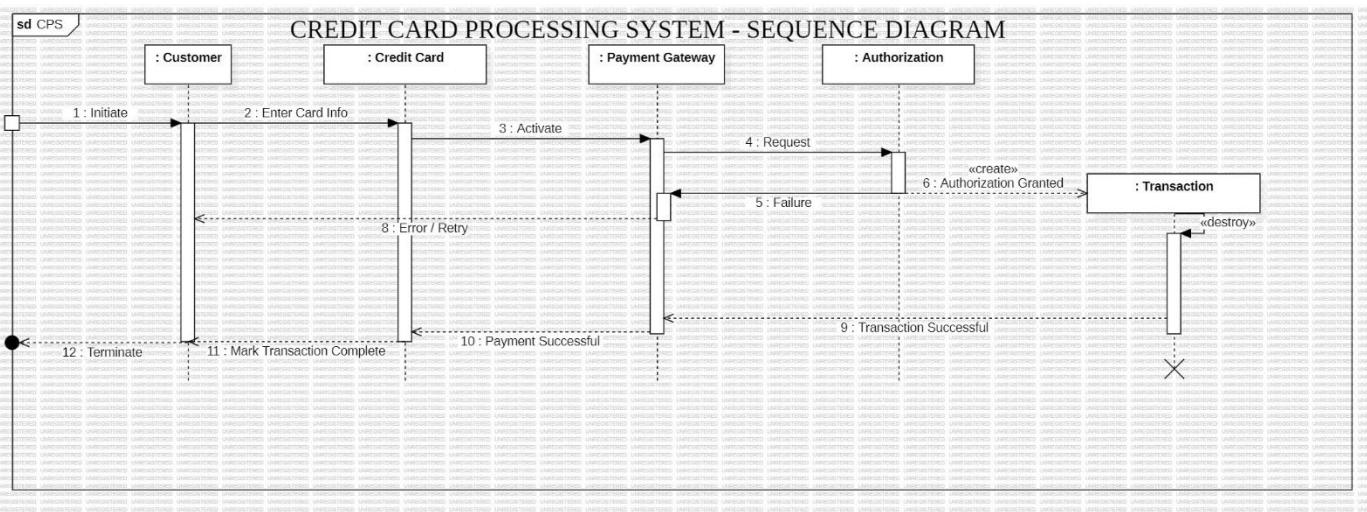
USE CASE DIAGRAM



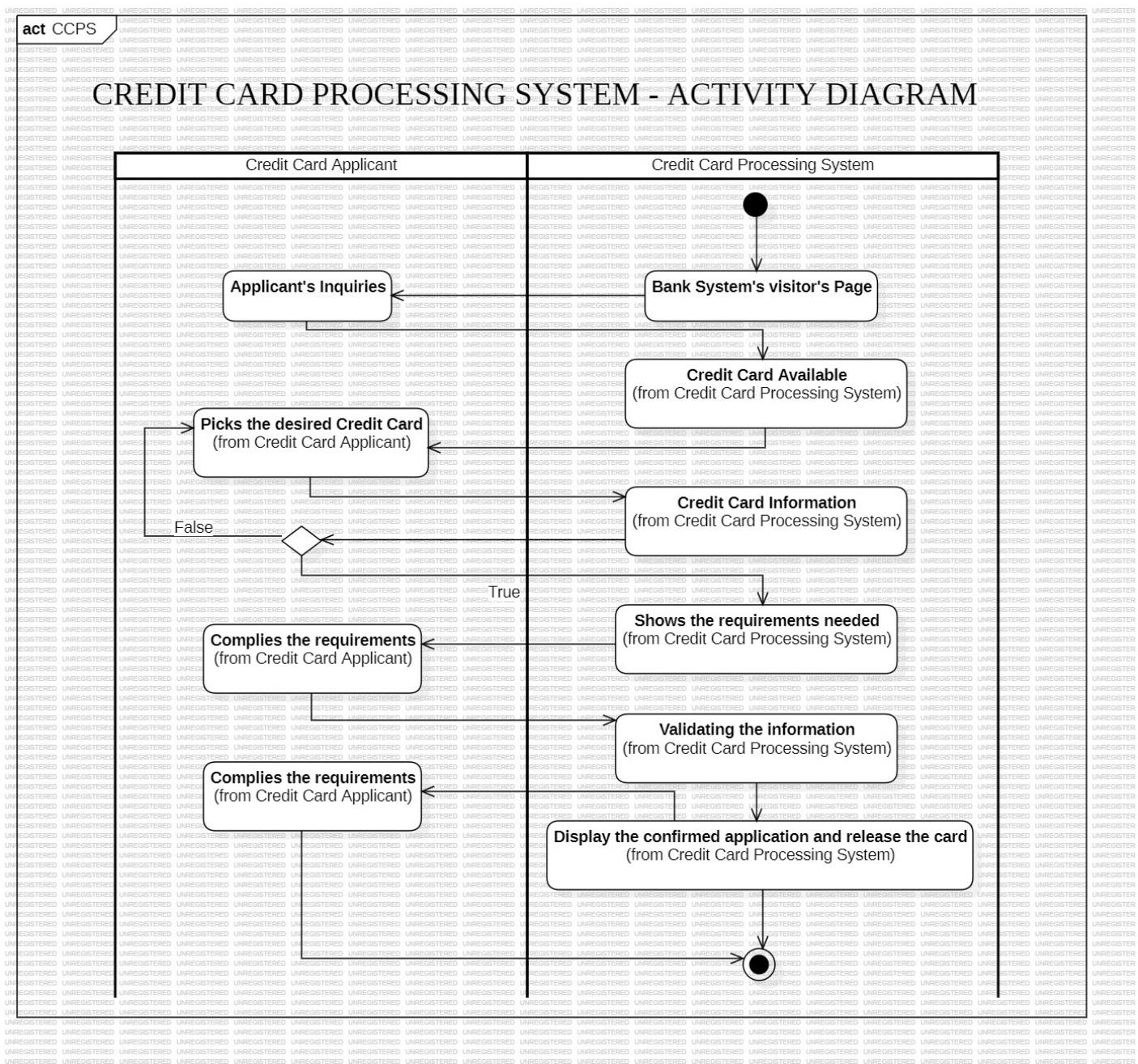
CREDIT CARD PROCESSING SYSTEM - USE CASE DIAGRAM



SEQUENCE DIAGRAM



ACTIVITY DIAGRAM



CREDIT CARD PROCESSING SYSTEM - ACTIVITY DIAGRAM

MISSION STATEMENT - METAV2 PROJECT TEAM

