CREDIT CARD PROCESSING SYSTEM

SOFTWARE REQUIREMENTS SPECIFICATION

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FOR CREDIT CARD PROCESSING SYSTEM

1. Introduction

1.1 Purpose of this Document : This document defines the requirements for a software system's functionality, performance expectations, and design constraints, serving as a comprehensive guide for the development team.

1.2 Scope of this Document : This document encompasses the functional and non-functional requirements for the credit card processing system, including UI specifications, transaction processing details, security protocols, and interface requirements for interacting with external systems like payment gateways and banks.

1.3 Overview : 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)

2. General Description :

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.

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.

2.3 Features :

- 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.

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.

3. Functional Requirements :

3.1 Transaction Processing : The system shall support various card types, shall perform real-time authorization requests to appropriate card networks.

3.2 Security : The system shall encrypt all sensitive cardholder data at rest and in transit, shall use tokenization to replace actual card number 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 SDKs for integration with other business systems, ensuring seamless operation.

4. Interface Requirements :

4.1 User Interface : The system shall provide a web-based UI accessible through both desktop and mobile devices.

4.2 External System Interfaces :

- Payment Gateways : For secure communication and transaction routing.
- Acquiring Banks : To facilitate the receipt of funds for processed transactions.
- Card networks : For transactions authorization and settlement.

5. Performance Requirements

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, targetting 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.

6. Design Constraints :

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 :

7.1 Security

7.2 Reliability

7.3 Usability

7.4 Maintainability

8. Preliminary Schedule and Budget

8.1 Schedule : The project is estimated to take 6 months, broken into key phases :

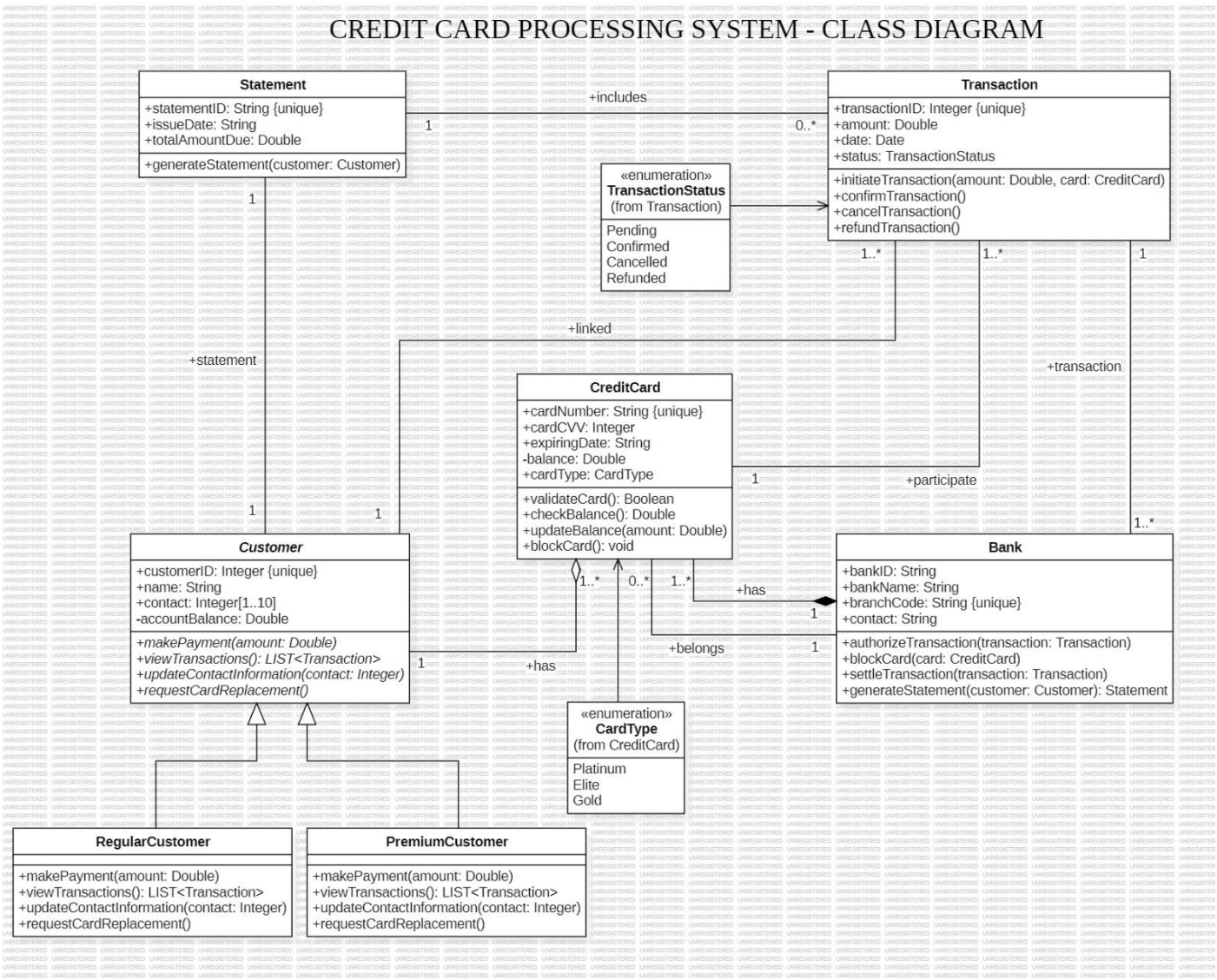
- Requirements gathering (2 weeks).
- Design Phase (1 month)
- Development Phase (3 month)
- Testing Phase (1 month)
- Deployment and training (2 weeks)
- Post - deployment support (2 weeks).

8.2 Budget : The total estimated budget is $150,000, allocated as follows:

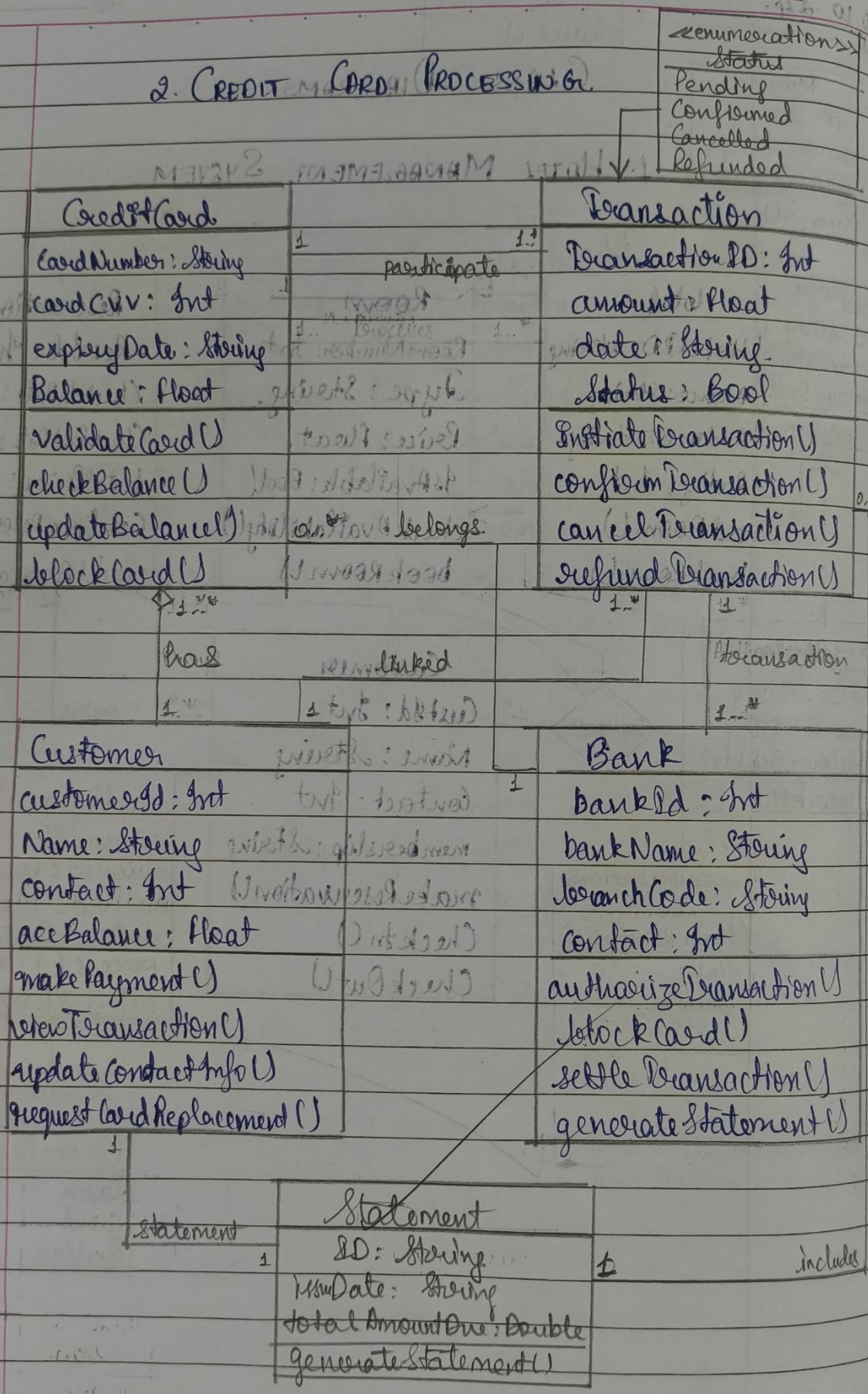
- Requirements gathering : $15000
- Design Phase : $25,000
- Development Phase : $80,000
- Testing Phase : $20,000
- Deployment and training : $7,500
- Post - deployment support : $2,500

UML DIAGRAMS

CLASS DIAGRAM



2. CREDIT CARD PROCESSING



STATE DIAGRAM