1 Introduction

Automated Teller Machines (ATMs) have become an essential part of modern banking, providing convenient access to a wide range of financial services. The ATM system allows customers to perform various banking transactions, such as withdrawing cash, checking account balances, depositing funds, and transferring money between accounts. The system uses a combination of hardware and software components to facilitate these operations securely.

2 UML Sequence Diagram

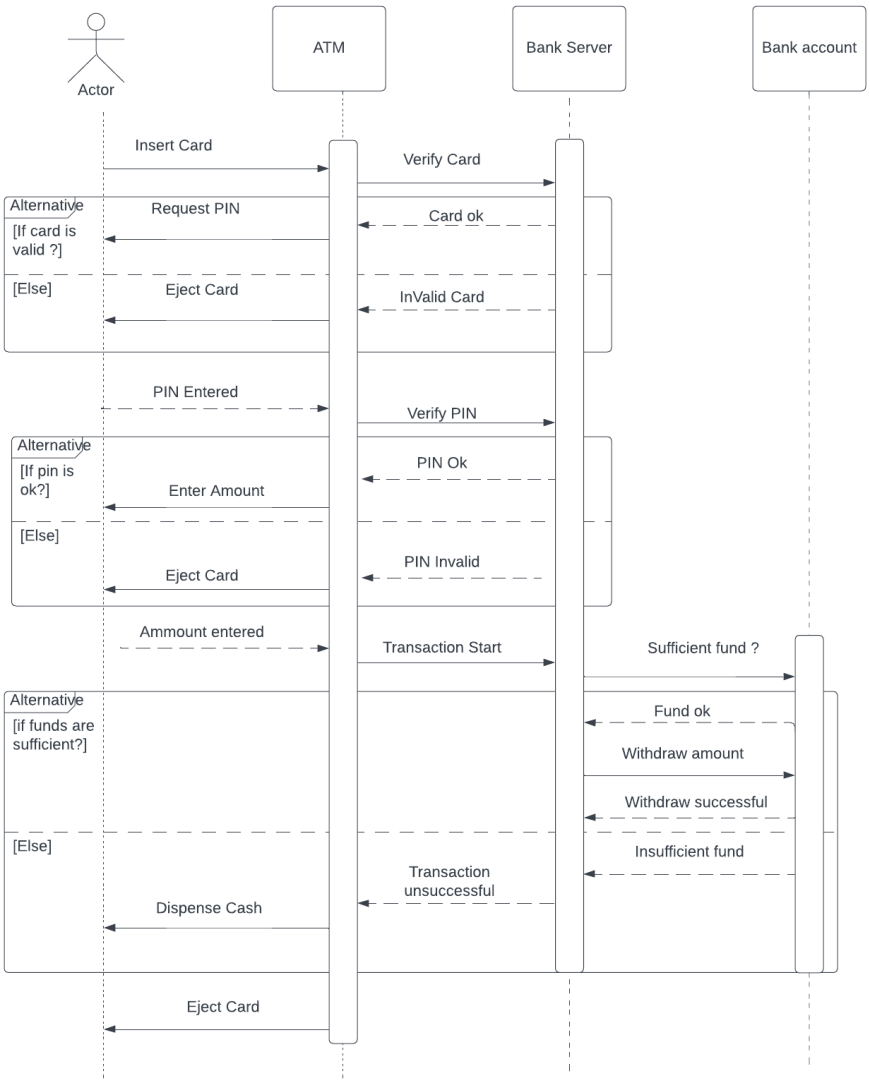

Figure 1: UML Sequence Diagram for ATM Withdrawal Operation

3 Operating Process of the ATM System

3.1 User Authentication

- The user inserts their ATM card into the card reader.
- The ATM system reads the card and prompts the user to enter their Personal Identification Number (PIN) using the keypad.
- The user enters their PIN, which is encrypted and sent to the authentication server.

3.2 Authentication

- The authentication server verifies the PIN against the database of authorized users.
- If the PIN is correct, the server sends an authentication confirmation to the ATM.

3.3 Transaction Selection

- The ATM presents a menu of transaction options to the user, such as balance inquiry, cash withdrawal, deposit, funds transfer, and more.
- The user selects the desired transaction.

3.4 Transaction Processing

- For a cash withdrawal, the user specifies the amount they wish to withdraw.
- The ATM communicates with the bank's core banking system to check the user's account balance and availability of funds.
- If the balance is sufficient, the requested amount is dispensed in cash.

3.5 Receipt Generation

- After a successful transaction, the ATM prints a receipt summarizing the details of the operation, including date, time, transaction type, account balance, and a unique transaction reference number.

3.6 Card Ejection

- The ATM ejects the user's card.

4 Conclusion

The proposed ATM system provides a secure and user-friendly platform for customers to access their bank accounts and perform various transactions. It integrates hardware components, software systems, and security measures to ensure the confidentiality, integrity, and availability of financial services. This technical report outlines the operational flow of the ATM system and highlights its significance in modern banking.