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1. Introduction

We will work with the Sonali Bank Limited (Bahaddarhat Branch) UML use case diagram in this part of the System Analysis and Design Sessional project. Object-oriented analysis and design is a technical method that uses object-oriented programming and visual modeling to look at and design an app, system, or business. The system requirements, classes, and how the classes interact are all developed during the object-oriented analysis (OOA) phase of software development. The conceptual model is improved using object-oriented design following the analysis stage, making it an object-oriented model (OOM). In order to create a model for the solution domain, the technology-neutral concepts from the analytical model are mapped onto implementing classes, restrictions are discovered, and interfaces are developed in OOM.

2. UML Diagram

The Unified Modeling Language (UML) is a type of static structural diagram that illustrates the structure of a system by presenting the system's classes, their attributes, actions (or methods), and the connections between objects in order to facilitate system change, documentation, and comprehension. Here, a modern approach to program documentation is applied. It serves as the entire program's implementation design. Although there are thirteen distinct types of UML diagrams, they all fall into two broad categories. Each of the structural and behavioral UML diagrams. In the structural (or static) view, the system's static organization using objects, attributes, actions, and relationships is highlighted. The behavioral (or dynamic) perspective emphasizes the dynamic activity of the system by emphasizing interactions between items and changes in the internal states of objects.

3. Use case Diagram

Even though use cases started out as a diagram for object-oriented UML, they are now used in all system development methods. It could be applied to the SDLC or agile modeling. A use case model, which represents a system logically, shows what a system does without going into detail about how it does it. The system's appearance to a user who is not a part of it is shown in the use case model. The use-case model

enables effective collaboration between the development team and the business team. A use case model divides the functionality of the system into actions, services, and responses (the use cases) that matter to the system's users. High-level functionality and how a user would utilize the system are represented by use cases. Use-cases are the fundamental concepts of modeling in the Unified Modeling Language.

The common notations used in a use-case diagram are:

a) Use-case: An approach used in system analysis to locate, describe, and arrange system requirements is called a use-case.

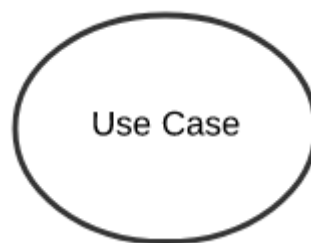


Figure 01: UML use-case Notation

b) Actor: Actors exist outside of the system, much like external entities. Actors are users of the system who play a certain role. For instance, an actor may work there while simultaneously shopping at the corporate store. The same individual is represented as two distinct symbols on a use case diagram even if they interact with the system in different ways in the actual world. The actor has a distinct interaction with the system even if they are separate entities.



Figure 02: UML Actor Notation

3.1. Account Section

There are three actors and ten use cases in the account section. The actors are the customer, manager, and general officer. In this section, firstly, customers will submit the account opening or closing request. The manager will approve the request or he can deny the request. But before that, the request will be verified by the General Officer (GO). As a result, the two use-case diagrams included a relationship. The General Officer (GO) will create or close the account. However, before the account is created or closed, the database must be updated to complete the process. In case of account closing, if any remaining amount is left in the customer's account, the general officer will give it back to the customer. The general officer will inform the customer about the application status by giving feedback. Here, the customer can also ask for feedback, or the general officer himself will provide it regardless of the customer's request.

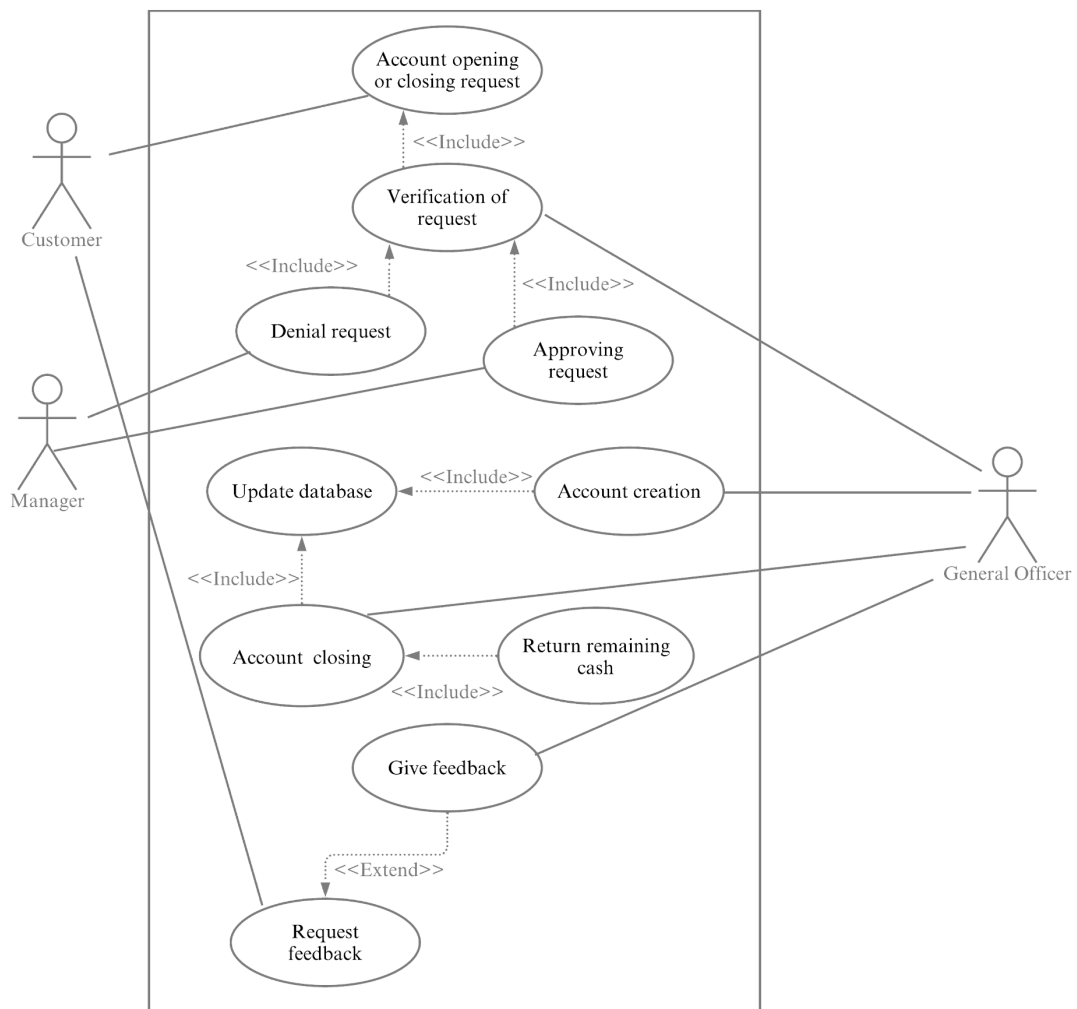


Figure 03: Use-Case Diagram of Account Section

3.2. Cash Section

There are two actors and eight use cases in the account section. The actors are the customer and the cash officer. The customer can provide a cheque, slip, or cash when he comes to the cash section. He can withdraw cash from the bank or he can deposit cash. For withdrawal purposes, the provided cheque will be checked by the Cash Officer. The customer will receive a bounced check if the Cash Officer found any fault during the verification of the cheque. When a customer wants to deposit cash, he must fill out a deposit slip, and at the same time, the Cash Officer will verify his account information in order to accept the transaction.

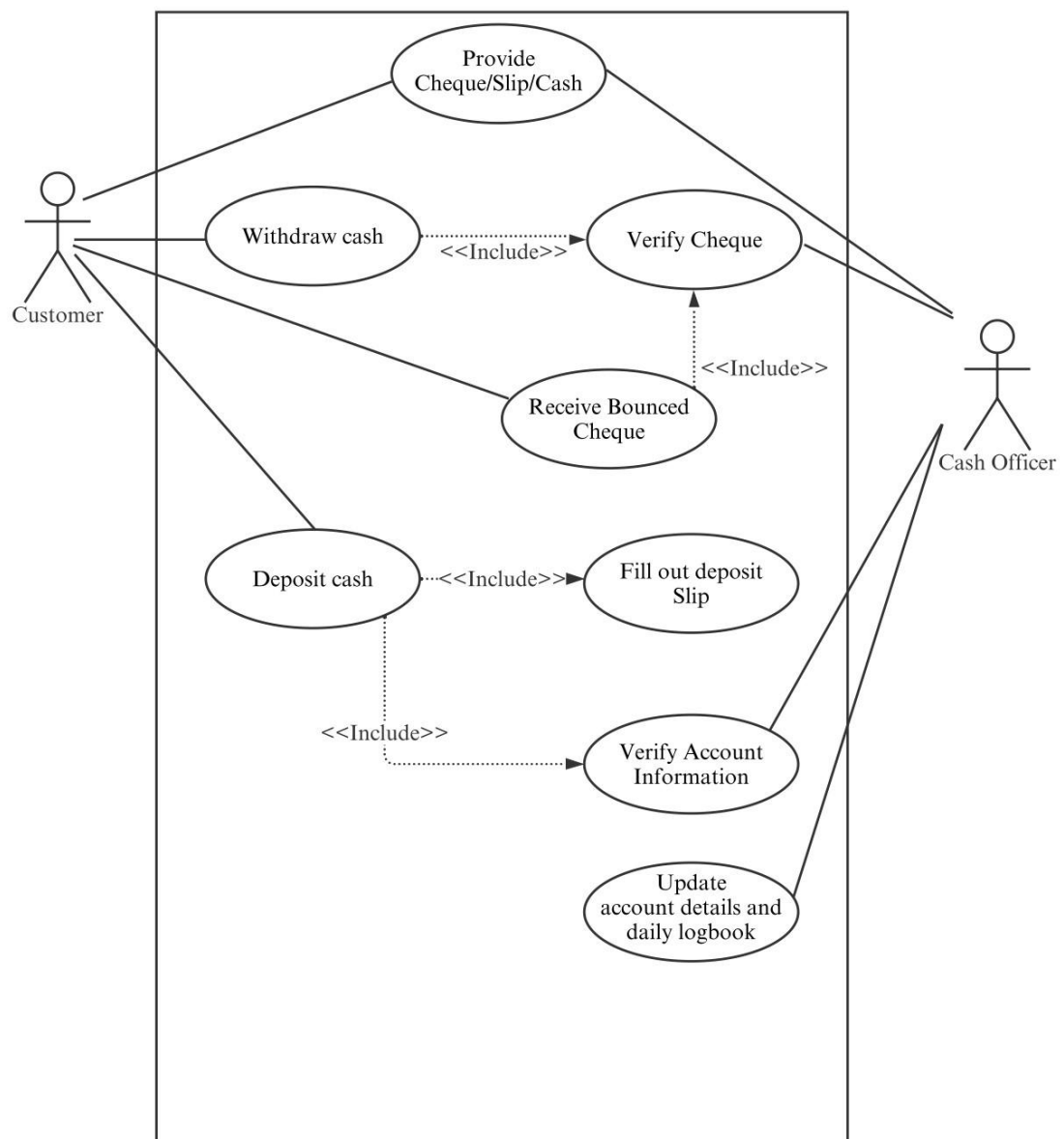


Figure 04 : Use-Case Diagram of Cash Section

3.3. Loan Section

In the use case diagram for the loan section, there are three actors: the customer, the manager, and the general officer. There are ten use cases used for explaining the operations of use cases with actors in the loan system. A customer can ask for a loan and also ask for loan vouchers at the same time. Before applying for the loan, the customer will provide the necessary documents and information. Due to the included relationship, the general officer will check the customer's information to put together the loan file. The manager will decide whether or not to approve the loan application in question. But first, he needs the general officer to prepare the loan file, so having another relationship with the general officer is also required. Based on the approval decision of the manager, customers will receive one of two types of sanction letters: a denial letter or an approval letter. After all, the general will update the database to store the loan information.

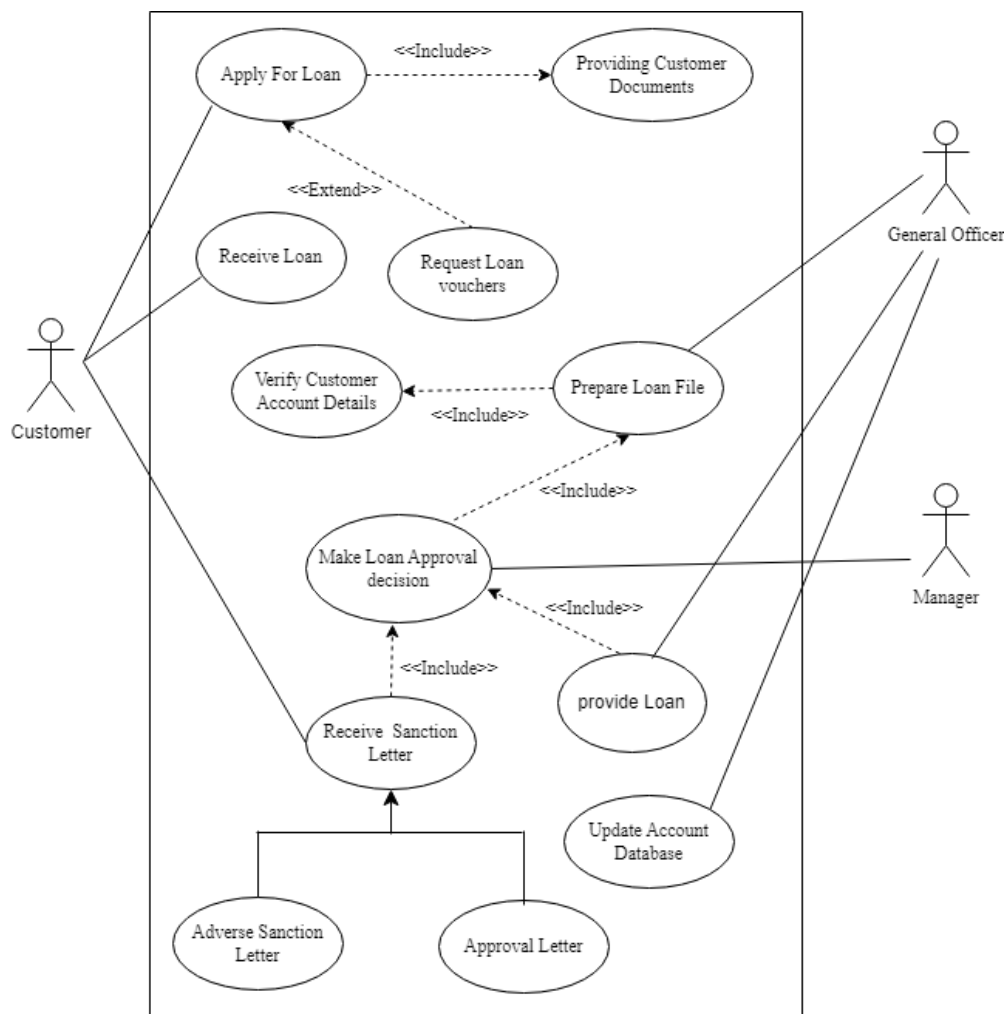


Figure 05: Use-Case Diagram of Loan Section

3.4. ATM Section

In the ATM system use-case diagram, we have two actors and ten use-cases to show how the ATM system works in terms of actors and their respective actions. Customers can use the ATM booth to check their balances, change their PINs, and get cash. By verifying the account, the ATM booth will let the customer in. The verified account is then linked to server access. Changing pins by the actor customer requires pin verification, which is done by the booth itself. Similarly, withdrawing cash from the booth requires the verification of the amount, which is also done by the booth. And if the cash withdrawal happens, then the receipt is generated. Finally, the ATM booth will update the balance.

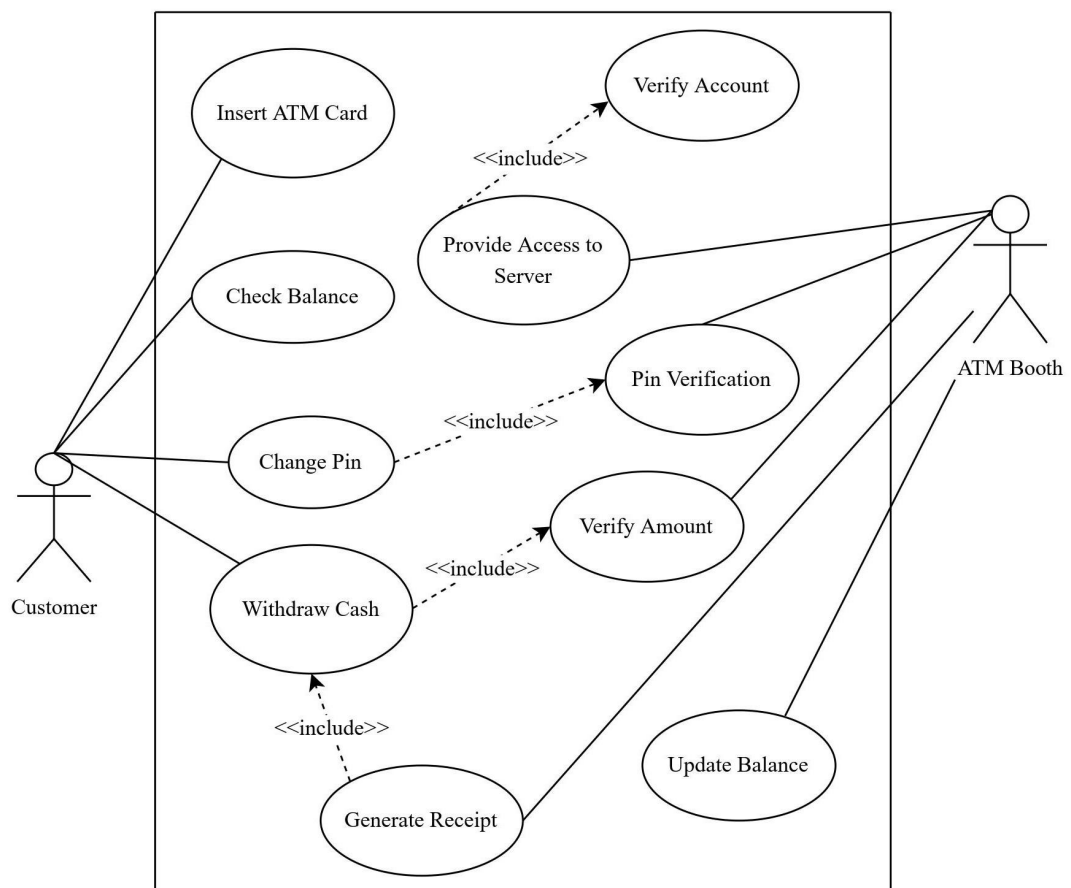


Figure 06: Use-Case Diagram ATM System

4. Conclusion

In this report, we've talked about UML diagrams that show different parts of the system that SONALI BANK LIMITED (BAHADDARHAT BRANCH) is running right now. Using use-case diagrams, we show in UML diagrams how the system works and what it needs. The UML diagrams assist programmers in visualizing and logically implementing the system. It is a very practical modeling language that developers can learn more quickly, and it makes it easier for us to comprehend the system.