Software Requirements Specification
Version 1.1
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ATM system for SBI Bank

A San

Submitted in partial fulfillment
Of the requirements of
CS2357 OOAD LAB

Table of Contents

1.0. Purpose

1.1. Introduction

This Software Requirements Specification provides a complete description of all the functions and specifications of the ATM system of SBI bank. The expected audience of this document is the faculty of the SBI, including the faculty who will use this system, and the developer.

1.2. Scope

The ATM system of SBI is designed to run for 24 hours and to allow bank clients to withdraw amount from their account, check for balance amount, and change their pin number. It also generates a ministatement. The data will be held in a bank database. The system is connected to the bank database using a modem or POTS.

1.3. Glossary

Term	**Definition**
Bank clients	Customers of the SBI bank, who have an ATM card, and possess either savings account or current account.
Ministatement	The receipt, which has the process details formulated by the system.
SBI	State Bank Of India
IEEE	Institute Of Electrical And Electronics Engineers.
SRS	Software Requirements Specification
POTS	Plain old telephone services
ADSL	Asymmetric Digital Subscriber Line

1.4. References

[IEEE] The applicable IEEE standards are published in “IEEE Standards Collection,” 2001 edition.

1.5. Document overview

The remainder of this document is two chapters, the first providing a full description of the project for the chief executive of SBI bank. It lists all the functions performed by the system. The final chapter concerns details of each of the system functions and actions in full for the software developers’ assistance. These two sections are cross-referenced by topic; to increase understanding by both groups involved.

2.0. Overall description

The ATM system encompasses various GUI menus, card reader, pin pad and a printer to produce a receipt. It provides secure access to the account of a customer. The system is connected to the bank database using ADSL or POTS.

2.1. System environment

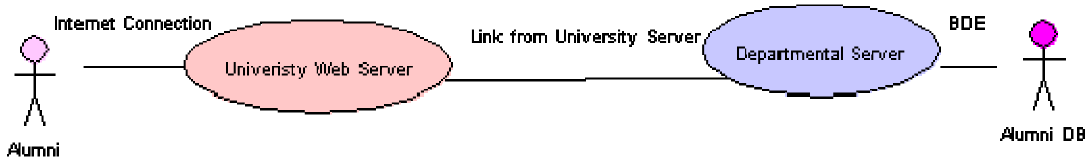

Figure 1 System Design

The ATM system operates for 24 hours from the bank server. When a bank client selects a menu,the control goes to the bank database.The database will then interact with the bank client, using the modem.

2.2. Functional requirements definitions

Functional Requirements are those that refer to the functionality of the system, i.e., what services it will provide to the user. Nonfunctional (supplementary) requirements pertain to other information needed to produce the correct system and are detailed separately.

2.3. Use cases

The system will consist of a screen that displays various options for the bank clients to select from. The system must get the user's pin number and card. It must read the card number, validate the card number and pin number using the data stored in the bank database. The system queries the customer for the type of accounts either savings account or current account. After getting the type of account, the system shows the amount left, and generates a ministatement.

2.3.1. Use Case: Insert card

Figure 2 customer inserts the card

Brief Description:

The client inserts the card in order to access his account.

Initial step-by-step description:

For this use case to be initiated, the system prompts the user to insert card.

1. The user is prompted to insert the card.
2. The user inserts the card in proper direction.
3. The secret code encrypted in the magnetic strip of the card is read by the system and is passed to the bank database for authentication.

Use Case Name:	Insert Card
Priority	Essential
Trigger	On prompting
Scope	ATM system
Level	User goal level
Precondition	None
Basic Path	1. the customer enters the ATM system 2. the system prompts the user to insert the card
Alternate Path	If the card is damaged the system will not

	read the card properly, and the system displays an error message stating invalid card.
Post condition	If the use case was successful, the user is now allowed to access is bank account.
Exception Path	If the ATM system undergoes a sudden failure, the user card number must not be read.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The authentication response should be given within 10secs.

2.3.2. Use Case: Balance Enquiry

Brief Description:

The client chooses to check the balance amount.

Initial step-by-step description:

For this use case to be initiated the user must be authenticated with his card and pin number.

1. The user is now authenticated.
2. The user enters the type of account.
3. The user selects the option of checking the balance amount.
4. The control is passed to the database.
5. The database finds the balance amount and passes to the system.
6. The system displays the balance amount and generates a ministatement.

Use Case Name:	Balance Enquiry
Priority	Essential

Trigger	Menu selection
Scope	ATM system
Level	User goal level
Precondition	1.The user must be authenticated 2.User enters the type of account
Basic Path	1. The user selects the option of checking the balance amount. 2. The control is passed to the database. 3. The database finds the balance amount and passes to the system. 4. The system displays the balance amount and generates a ministatement
Alternate Path	N/A
Post condition	The balance is displayed and the user can proceed with further transaction.
Exception Path	If the system encounters a problem, further transactions must be stopped.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The balance must be displayed within 10secs.

2.3.3. Use Case: Withdraw Amount

Brief Description:

After authentication the user can enter the amount to be withdrawn.

Initial step-by-step description:

For this use case to be initiated the user must be authenticated with his pin number and must have a sufficient balance.

1. The user enters the type of the account and the amount to be withdrawn.

2. The system passes this information to the bank database.

3. The withdraw amount must be less than the balance amount. This validation is done in the bank account.

4. The valid message is passed to the ATM.

5. The system dispenses the required amount.

6. The account is updated.

Use Case Name:	Withdraw Amount
Priority	Essential
Trigger	Menu selection
Scope	ATM system
Level	User goal level
Precondition	1. The user is authenticated with his user name and password. 2. The amount to be withdrawn must be less than the balance amount.
Basic Path	1. The customer enters the withdraw amount. 2. The amount is verified with the balance. 3. The valid message passed to the system. 4. The system dispenses the cash amount. 5. The user picks the amount.
Alternate Path	1. If the amount to be withdrawn is greater than the balance amount, error message is passed to the system. 2. System displays insufficient balance message.
Post condition	1. The system dispenses cash and the user takes it. 2. The receipt is generated. 3. The user is queried as whether he wishes to proceed with further transaction or terminate the process.
Exception Path	If the system encounters a problem, further transactions must be stopped.

Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The cash must be dispensed within 10secs.

2.3.4. Use case: Generate ministatement

Brief Description:

The system generates the receipt that has the transaction details.

Initial step-by-step description:

For this use case the system must have a printer, and sufficient amount of papers.

1. The user must have performed some kind of transaction.

2. The details of this transaction are generated as a ministatement.

Use Case Name:	Generate ministatement
Priority	Essential
Trigger	On Completion of transaction
Scope	ATM system
Level	System goal level
Precondition	1.The user must be authenticated 2. The user must have performed some kind of transaction
Basic Path	The customer performs the transaction and the system generates the receipt containing transaction details.
Alternate Path	N/A
Post condition	The customer receives the receipt.
Exception Path	If the system encounters a problem, the receipt should be either generated completely or must not be generated.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The balance must be displayed within 10secs. 3. 15 meter long receipt must be

	generated, and the contents must be printed in black ink.

2.3.5. Use Case: Insufficient Balance

Brief description:

The system displays message as insufficient balance.

Initial step-by-step description:

For this use case to be initiated the system must be connected to the bank’s database using a Modem or POTS.

1. The user chooses the option withdraw amount

2. The system asks for the amount to be withdrawn.

3. The system passes this information to the bank’s database.

4. The bank database has the customer account balance.

5. The amount to be withdrawn is found to be greater than the balance.

6. The bank database passes the insufficient balance message to the ATM system.

7. The ATM system displays the message.

Use Case Name:	Insufficient Balance
Priority	Essential
Trigger	After entering the withdraw amount
Scope	ATM system
Level	System goal level
Precondition	1. The user must have entered the amount to be withdrawn.
Basic Path	1. The system passes this information to the bank’s database.

	2. The bank database has the customer account balance. 3. The amount to be withdrawn is found to be greater than the balance. 4. The bank database passes the insufficient balance message to the ATM system. 5. The ATM system displays the message.
Alternate Path	If the balance is sufficient, then the system dispenses the required cash.
Post condition	The system asks the user whether he needs to continue the transaction or not.
Exception Path	If the system encounters a problem, further transactions must be stopped.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The message must be displayed within 10secs.

2.3.6. Use Case: Validate Pin No

Brief Description:

The user enters the pin number, which is passed to the database for validation.

Initial Step-By-Step Description:

For this use case to be initiated the system must be connected to the bank's database using a Modem or POTS.

1. The customer enters the pin number, in the pin pad or touch screen.
2. The system passes this pin number to the bank database.
3. The database checks whether the pin number is valid or not.

Use Case Name:	Validate Pin No

Priority	Essential
Trigger	After entering the pin number
Scope	ATM system
Level	System goal level
Precondition	The user must have entered the pin number
Basic Path	1. The customer enters the pin number, in the pin pad or touch screen. 2. The system passes this pin number to the bank database. 3. The database checks whether the pin number is valid or not.
Alternate Path	N/A
Post condition	1. The validation result is passed to the system. 2. The user can perform further transactions.
Exception Path	If the system encounters a problem, further transactions must be stopped.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The validation result must be displayed within 10secs.

2.3.7. Use Case: Invalid Pin No

Brief Description:

The user enters the pin number, which is passed to the database for validation.

Initial Step-By-Step Description:

For this use case to be initiated the system must be connected to the bank's Database using a modem or POTS.

1. The user enters the pin number in the pin pad or touch screen.

2. The system passes this pin number to the bank database.

3. The database checks whether the pin number is valid or not.

4. The system finds that the pin no is invalid.

5. It passes the error message to the ATM system.

6. The ATM system displays the error message stating invalid pin number.

Use Case Name:	Invalid Pin number
Priority	Essential
Trigger	After entering the pin number
Scope	ATM system
Level	System goal level
Precondition	The user must have entered the pin number
Basic Path	1. The customer enters the pin number, in the pin pad or touch screen. 2. The system passes this pin number to the bank database. 3. The database checks whether the pin number is valid or not. 4. The system finds that the pin no is invalid. 5. It passes the error message to the ATM system. 6. The ATM system displays the error message stating invalid pin number.
Alternate Path	1. The database finds that the pin number is valid. 2. The system allows the user to proceed further with his transactions.
Post condition	The user enters the valid pin number or can terminate the process.
Exception Path	If the system encounters a problem, further transactions must be stopped.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The validation result must be displayed within 10secs.

2.3.8. Use Case: Update Balance

Brief Description:

The withdrawn amount is deducted from the account balance.

Initial Step-By-Step Description:

For this use case to be initiated the system must be connected to the bank’s Database using a modem or POTS.

1. The user is authenticated using card number and pin number.
2. The user enters the type of account.
3. The client then chooses the withdraw option.
4. The client enters the withdraw amount.
5. The System passes this information to the bank database.
6. The bank software then checks for sufficient balance.
7. The withdraw amount is then deducted from the balance.

Use Case Name:	Update balance
Priority	Essential
Trigger	After withdraw transaction
Scope	ATM system
Level	System goal level
Precondition	The withdraw amount must be less than the balance amount
Basic Path	1. The user is authenticated using card number and pin number. 2. The user enters the type of account. 3. The client then chooses the withdraw option. 4. The client enters the withdraw amount. 5. The System passes this

	information to the bank database. 6. The bank software then checks for sufficient balance. 7. The withdraw amount is then deducted from the balance.
Alternate Path	The bank database finds that the withdraw amount is greater than the balance amount and the error message is displayed on the screen.
Post condition	The system dispenses the cash.
Exception Path	If the system encounters a problem, further transactions must be stopped and no updation must be made.
Special Requirement	1. Touch screen UI on a large flat panel monitor. Text must be visible from 1 meter. 2. The updation must be done within 10secs.

2.4. Non-functional requirements

There are requirements that are not functional in nature. Specifically, these are the constraints the system must follow. They are often called qualities of a system. Other terms for non-functional requirements are “constraints”,” quality attributes”,” quality goals”, ” quality of service requirements” and “non-behavioral requirements”.

Qualities, that is, non-functional requirements, can be divided into two main categories:

1. Execution qualities, such as security and usability, which are observable at run time.

2. Evolution qualities, such as testability, maintainability, extensibility and scalability, which are embodied in the static structure of the software system.

3.0. Requirement specifications

3.1. External interface specifications

None

3.2. Detailed non-functional requirements

(i) Functionality: one customer at a time can process their account in the ATM machine.

(ii) Usability: The desktop user interface shall be Windows 95/98/2000 XP complaint.

(iii) Reliability: The ATM machine must be able to scan or read the card properly and identify the customer account. The specified amount must be available to the customer.

(iv) Performance: The ATM machine support only one customer at a time. The speed and accurate transaction decides the performance factor. The screen must be clearly visible to the user. The system must record the transaction.

(v) Security: The pin number and the secret code in the card guarantee the security of a customer's account. The ATM system must not store any of this data in its database. The customer with a pin number and a valid card is allowed to do all transactions.

(vi) Scope: The scope of this project is to allow the user to get access to their account through the ATM. The transaction that takes place often is withdrawal of amount.

3.3. System Evolution

In the future this system will be updated to allow customer of other banks to use this system. Deposits may also be performed. Database access speed can be increased further.

4.0. Index