



ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY

College of Electrical and Mechanical Engineering

Department of Software Engineering

Software Requirement Engineering Project

Internet Banking System: Phase I

Section: C

Group 2

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Submission date: 5-May-2022

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Introduction

Our project is on internet banking system. We try to reach some problems that we believe it can be fix by online banking so that there will be improved user experience and service.

In this phase we put the project (Internet banking) Elicitation and Inception in detail so that it will be helpful and starting for Requirement analysis.

Also, this Phase is needed so that we can easily collect stakeholders Requirement.

Requirement Inception

Here we first define the current problem that we think there is in current system. So, after getting this problem we have to define the scope of the system so that it cannot be too broad or too narrowed and do not cover the problem properly. Then there is a product vision statement.

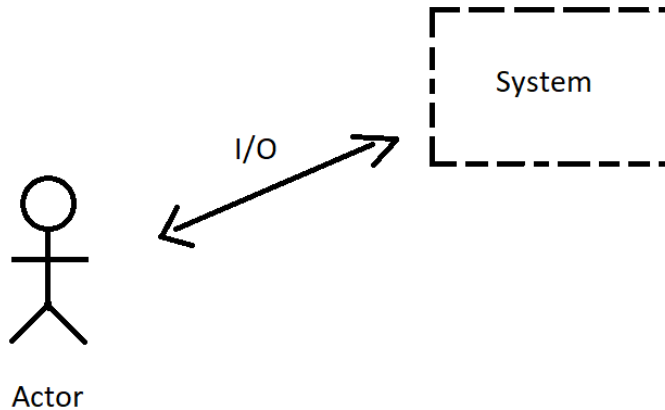
Problem Analysis

The traditional way of banking is becoming very obsolete as the world is becoming digitized. The problem this system tries to solve is the inability of accessing your bank account without going to the bank physically as it wastes one's time and can be inconvenient if your bank's branch is not around.

The problem of...	Inability to access bank account without going physically
Affects...	Customers, the bank, outside business owners
Results in...	Time wastage, customer dissatisfaction, decreased profit
Benefits of solution....	Saves time, improves speed, improves customer satisfaction, accessible 24x7, accessible without physically being present at a bank

- The stakeholders are the customers of the bank with a bank account and the bank itself.

Solution System Boundary



Constraints

Technology: the internet, smart devices needed

Hardware: system hardware must be able to contain & process huge amounts of data

Environment: security of the system

PURPOSE OF THE STUDY

The aim of this project is to develop a secured online banking system with the following objectives:

- Create a banking system that is easily accessible by customers from the comfort of their homes, offices etc.
- Reduce the flow of human traffic and long queues at banks
- Reduce the time wasted in going to banks to stay on queues.
- Promote efficient and effective banking for the banks by focusing on those services that still require physical presence at the banking hall.

SCOPE OF THE STUDY

The scope of this project is limited to the activities of the operations unit of the banking system which include opening of Account, Deposit of funds, Withdrawal of funds and transfer.

VISION

Vision: To be the best, easily accessible anywhere, customer-centric, fast, simple, responsive and problem-solving online banking system.

Vision statement: For bank users who want to access their account where ever they are, the online banking system is a system that is simple to use and enables to access no matter where you are.

Unlike going to a bank for every service, online banking system creates a way to get services without going anywhere, reduces human interaction, and reduces the time wasted in going to banks.

Requirement Elicitation

This is the second big part of the phase. Here we prepare a questionnaire and brainstorming to get the exact requirement of stakeholders. And prototype has been prepared so that may be the stakeholders may not know what they want exactly so from the prototype they can add other requirements (it is as a starter). The last one is a use case and scenario which goes side to side with the prototypes defined.

QUESTIONNAIRE

- This survey is designed to understand Internet users' perspectives on Internet banking, their experience with Internet banking, and their expectations on Internet banking services. Only summary measures and conclusions from this survey will be reported. Your participation in this survey is greatly appreciated.

1. Do you use Internet Banking?

☐ Yes

☐ No

2. Tell us about your frequent weekly banking activity:

☐ atm withdrawals

☐ cashless transactions

☐ visits to the bank branch

3. Tell us about your average weekly banking activity frequency:

☐ 0 to less than 1 times a week

☐ 1-2 times a week

☐ 3-4 times a week

☐ 5 and more times a week

4. Tell us about your daily Internet usage purpose:

☐ fun/play

☐ work

☐ school

☐ social media

5. Tell us about your average daily Internet usage time:

- ☐ 0 hour
- ☐ 1-2 hours
- ☐ 3-4 hours

6. What is your preferred communication with your bank? (You can choose many)

- ☐ online via personal computer
- ☐ online via smart phone
- ☐ call center
- ☐ visit to the bank
- ☐ atm

Other (please specify)

7. How do you connect to the Internet? (You can choose many)

- ☐ broadband connection at home
- ☐ broadband connection at school
- ☐ broadband connection at work
- ☐ mobile phone with internet access (mobile internet)

Other (please specify)

8. Please state whether you agree or not with the following statements

	Strong	Neither agree or disagree	Strongly disagree
• online banking makes banking cheaper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• online banking gives account access 24/7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• online banking saves time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• online banking is secure way of dealing with bank	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• walk-in contact with bank (in branch) is essential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- I would never open up an account
in a bank without walk-in branch ☐ ☐ ☐
- If I could do all I need online,
I would never visit the bank ☐ ☐ ☐

9. How often do you use On-line Banking for the following?

- | | Never | Sometimes | Often |
|---------------------------------|-----------------------|-----------------------|-----------------------|
| • online transfers | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • standing orders | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • checking account balance | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • operations history | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • paying bills | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • mobile top-up | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| • applying for banking services | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

10. What is the main reason that you typically visit your bank branch (please choose the single most important reason)?

- ☐ to make a deposit
- ☐ to get advice for investment options
- ☐ to inquire about a balance
- ☐ to withdraw cash
- ☐ other

11. Tell us about yourself:

- ☐ Male (under 25)
- ☐ Male (25-35)
- ☐ Male 35+
- ☐ Female (under 25)
- ☐ Female (25-35)
- ☐ Female 35+

12. Occupation of chief income earner in the family:

- ☐ Higher managerial/professional/administrative
- ☐ Intermediate managerial/professional/administrative

- ☐ Supervisory or clerical/junior managerial/professional
- ☐ Skilled manual worker
- ☐ Semi or unskilled manual work
- ☐ Unemployed/casual work
- ☐ Farmer 50+ acres, farm manager
- ☐ Farmer under 50 acres, farm labor

BRAINSTORMING

Did you know that 40% of the World Uses Online Banking? Internet banking was used by more than 2 billion people across the world in 2018, that's around 40% of the world's entire population.

Whether you're on vacation or it's the middle of the night, you can manage your banking. That includes holidays when your bank is closed. Do you think that is possible without Internet banking?

Did you know that security of transactions is a big issue in Internet banking? Your account information might get hacked by unauthorized people over the internet.

Prototyping

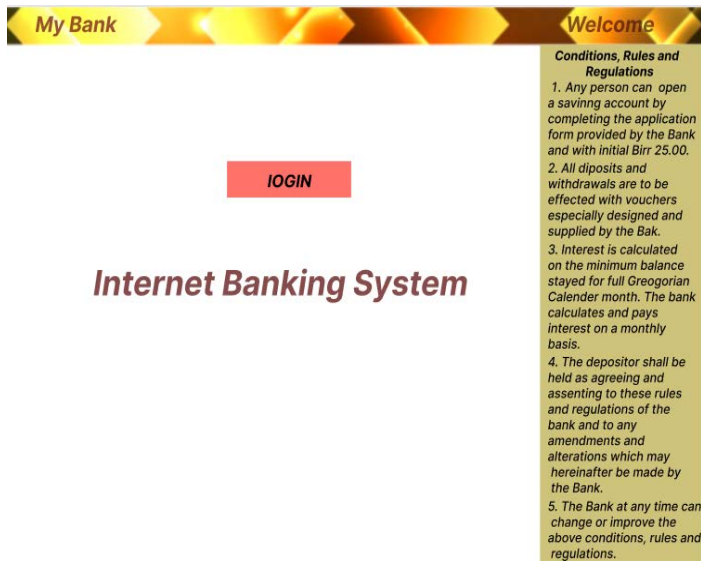


Fig. 1 User Interface – First page or Landing page

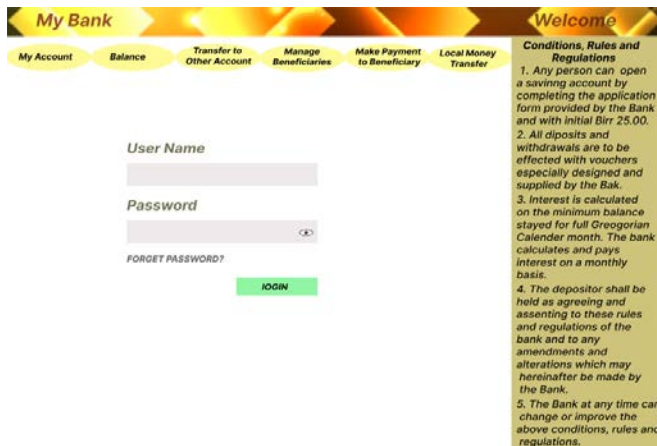


Fig. 2 User Interface – Login page

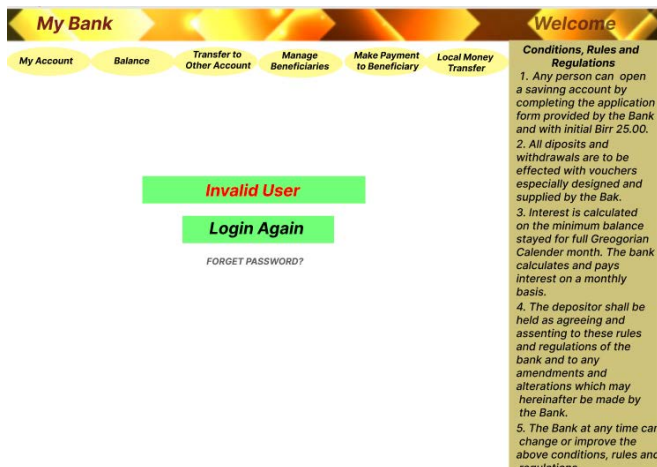


Fig. 3 User Interface – Invalid user If Username and Password are Incorrect

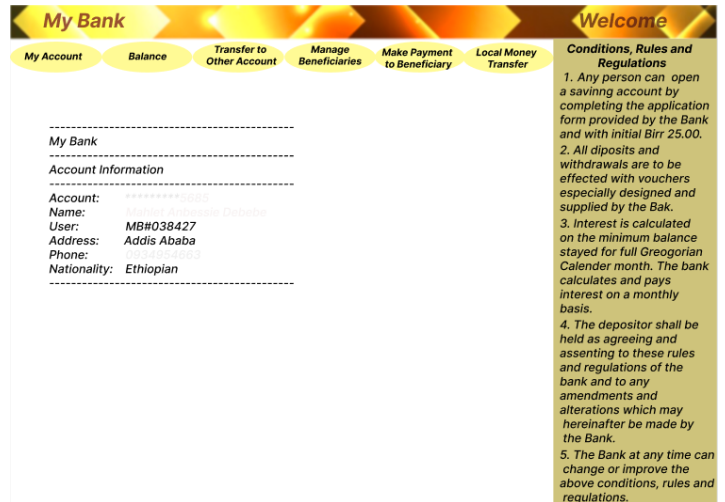


Fig. 4 View Account – Account information

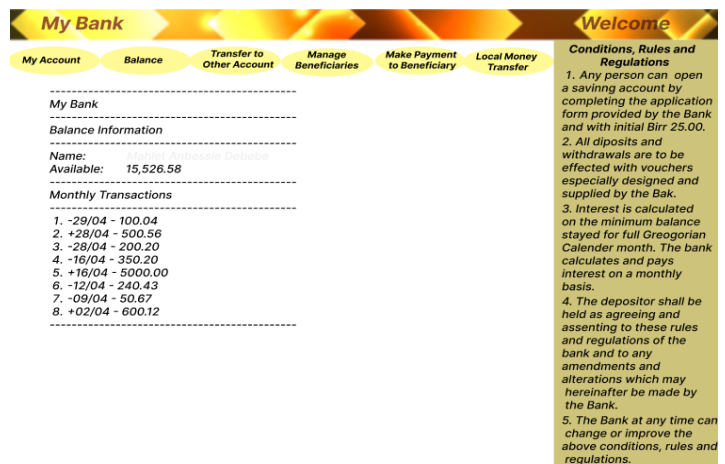


Fig. 5 View Balance – Account Balance and Transaction History of the Account

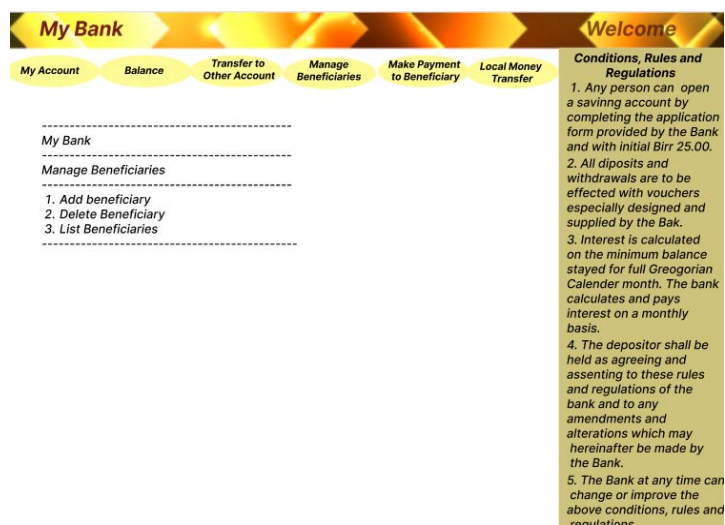


Fig. 6 Beneficiary – Manage Beneficiary; Add, Delete and view existing Beneficiaries

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Welcome

Conditions, Rules and Regulations

1. Any person can open a saving account by completing the application form provided by the Bank and with initial Birr 25.00.
2. All deposits and withdrawals are to be effected with vouchers especially designed and supplied by the Bank.
3. Interest is calculated on the minimum balance stayed for full Gregorian Calendar month. The bank calculates and pays interest on a monthly basis.
4. The depositor shall be held as agreeing and assenting to these rules and regulations of the bank and to any amendments and alterations which may hereinafter be made by the Bank.
5. The Bank at any time can change or improve the above conditions, rules and regulations.

My Bank

1. Add beneficiary

Please Enter Account No

Fig. 7 Beneficiary – Add new Beneficiary

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

2. Delete Beneficiary

Please Enter Account No

Fig. 10 Beneficiary – Delete Beneficiary

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Welcome

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My Bank

1. Add beneficiary

Please Enter Account No

Successfully Added!

Fig. 8 Beneficiary – Successfully Added

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

1. Delete Beneficiary

Please Enter Account No

Successfully Deleted!

Fig. 11 Beneficiary – Successfully Deleted

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Welcome

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My Bank

1. Add beneficiary

Please Enter Account No

Error Found! please try again...

Fig. 9 Beneficiary – Error Found on Adding Beneficiary then try again

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Welcome

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My Bank

2. Delete Account

Please Enter Account No

Error Found! please try again...

Fig. 12 Beneficiary – Deletion Unsuccessful if some error existed

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Welcome

Conditions, Rules and Regulations

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My Bank

Transfer to Other Account

Enter reciever's Name: _____

Enter reciever's Account: _____

Enter Amount: _____

3. List Beneficiaries

1. Water
2. Elpa
3. Wi-Fi

Fig. 13 Beneficiary – View and list Existing Beneficiaries

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Transfer to Other Account

Enter reciever's Name: _____

Enter reciever's Account: _____

Enter Amount: _____

Error Found! Please try again...

Fig. 16 Transfer – Transfer Unsuccessful if some error Existed

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Transfer to Other Account

Enter reciever's Name: _____

Enter reciever's Account: _____

Enter Amount: _____

Fig. 14 Transfer – Money Transfer to Other Account

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Make Payment for Beneficiaries

[Beneficiary's name] _____

payment amount: _____

Fig. 17 Payment – Make Payment for the Beneficiaries

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Transfer to Other Account

Enter reciever's Name: _____

Enter reciever's Account: _____

Enter Amount: _____

Transfer Successfully Completed!

Fig. 15 Transfer – Transfer Successful

My Bank

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Make Payment for Beneficiaries

[Beneficiary's name] _____

payment amount: _____

Payment Successful!

Fig. 18 Payment – Payment Successful if some error existed

My Bank

Welcome

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Make Payment for Beneficiaries

[Beneficiary's name]

payment amount:

Error Found! please try again...

Fig. 19 Payment – Payment Unsuccessful if some error Existed

My Bank

Welcome

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Local Money Transfer

Enter reciever's Name:

Enter reciever's Phone No:

Enter Amount:

Error Found! Please try again...

Fig. 22 Local Transfer – Transfer Unsuccessful if some error Existed

My Bank

Welcome

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

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My Bank

Local Money Transfer

Enter reciever's Name:

Enter reciever's Phone No:

Enter Amount:

Transfer Successfully Completed!

Fig. 20 Local Transfer – Local Money Transfer by Phone Number for those who doesn't have an Account

My Bank

Welcome

My Account Balance Transfer to Other Account Manage Beneficiaries Make Payment to Beneficiary Local Money Transfer

Conditions, Rules and Regulations

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My Bank

Local Money Transfer

Enter reciever's Name:

Enter reciever's Phone No:

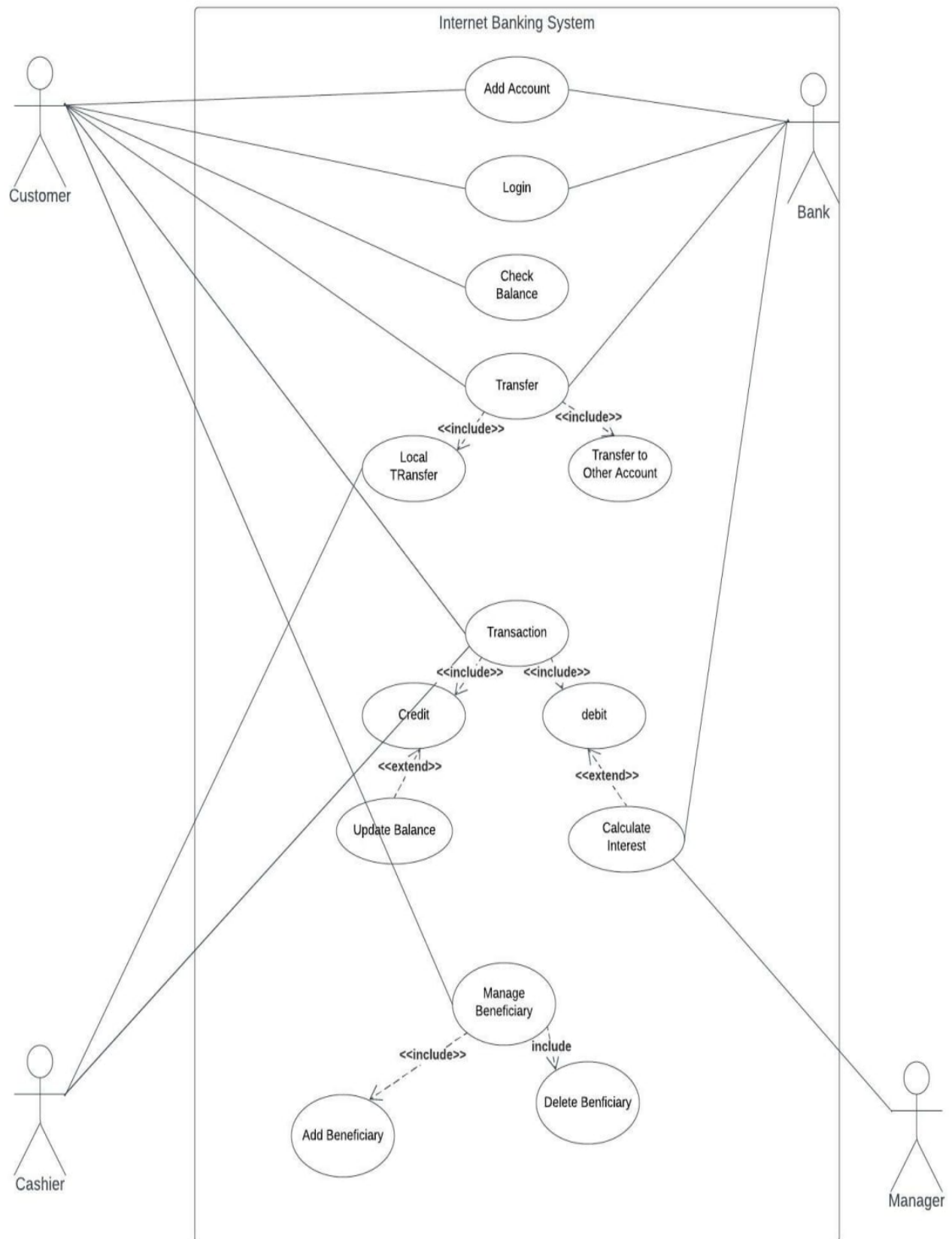
Enter Amount:

Transfer Successfully Completed!

The QR code is sent to the Reciever!

Fig. 21 Local Transfer – Transfer Successful then it will send the QR code to the receiver via the entered phone number

Use Case & Scenarios



Scenarios

1. A Customer is required to create an account to avail services offered by Bank. Bank verifies detail and creates new account for each new customer. Each customer is an actor for the Use-Case Diagram and the functionality offered by Internet Banking System to Add Account is Use-Case.
2. Each customer then must login to the system with the created credentials and can check the balance in bank account and initiate request to transfer an account across distinct branches of Bank (local transfer) or transfer to other account. Cashier is an employee at bank who supports service to the customer.
3. A customer can execute cash transactions where the customer must either add cash value to bank account or withdraw cash from account. Either of two or both that is credit as well as debit cash, might be executed to successfully execute one or multiple transactions.
4. After each successful transaction customer might or might not want to get details for action. Manager can calculate interest value for each account corresponding to transaction to ensure and authenticate details.
5. A customer can manage beneficiary (add and delete beneficiary).

Tools Used

=> **Star uml**

=> **Online Sketcher:** <https://www.figma.com/files/recent?fuid=1100771181000004722>