OOSE Practical File

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PROBLEM STATEMENT

- Bank Management System will help to develop a software for solving financial applications of customer in banking environment, in order to fulfil the needs of end user by providing various ways to perform banking tasks.
- The system will maintain a user's account in a bank.
- Bank Management System will help the customer to access the accounts by creating an account, deposit the money from his account, withdraw the money from his account, and view reports in efficient manner.
- Create an account will help the customer to create a new account with the attributes like personal information (name, address, DOB, phone no. etc.), then account number will be generated.
- Deposit the money in the account will help to add the given amount to the balance with the help of user id.
- Withdraw the money from the account will help to subtract the given amount from the balance with the help of user id.
- View Reports will help to view the current status of the bank account of the user that is, it will help to review the current balance of the account of different users using user id.
- Delete an account will help the customer to delete the respective account from the bank database.
- This Bank Management System in whole will help to create an efficient way to regulate between different aspects of banking.

Initial Requirement Document

Title of Project	Bank Management System
Stakeholders involved in capturing requirements	Administrator, Bank Manager, Customers, Staff
Techniques used for requirement capturing	● Interviewing ● Brainstorming
Name of the persons along with designation	● Mrs. Kusum Lata Ma'am ● Aakash Singh ● Anisha Gupta
Date	September 2016
Version	1.0

Consolidated List of Initial Requirements:

- A system is to be implemented which can manage accounts of different users and provide different functionalities like Deposit, Withdrawal etc.
- A user friendly interface should be used to facilitate the process of deposit, withdrawal or check status.
- There are four types of members in the system: Administrator, Manager, Staff and Customer/Account Holder.
- The administrator should be able to maintain details of all account holders.
- The Bank Manager keeps track of all the important decisions to be taken and keep track of the staff.
- The system should be secured so that no false activities could affect people's accounts without their knowledge.
- The system should be abstract and should have different views as per the user of the system.
- If any change is made into the account then the account should be notified via a mail or message.
- This Bank Management System in whole will help to create an efficient way to regulate between different aspects of banking.

Software Requirement Specification (SRS)

1. Introduction

1.1 Purpose:
This document describes the software requirements for a Bank Management system. It is intended for the designer, developer and maintainer of the accounts in the bank.

1.2 Scope:
The function of the system is to support a computerized banking network.

1.3 Overview:
The remainder of this document is organized as follows: There will be some definitions of important terms. Section 2 contains a general description of the Bank Management System. Section 3 identifies the specific functional requirements, the external interfaces and performance requirements of the system.

1.4 Definitions:
Account:
A single account in a bank against which transactions can be applied. Accounts may be of various types with at least checking and savings. A customer can hold more than one account.

Bank:
A financial institution that holds accounts for customers and that issues cash cards authorizing access to accounts over the system.

Bank computer:
The computer owned by a bank that interfaces with the accounts present on network and the banks own cashier stations. A bank may actually have its own internal network of computers to process accounts but we are only concerned with the one that interacts with the network.

Loan:
A loan is the act of giving money, property or other material goods to another party in exchange for future repayment of the principal amount along with interest or other finance charges. A loan may be for a specific, one-time amount or can be available as an open-ended line of credit up to a specified limit or ceiling amount.

Customer:
The holder of one or more accounts in a bank. A customer can consist of one or more persons or corporations the correspondence is not relevant to this problem. The same person holding an account at a different bank is considered a different customer.

Transaction:
A single integral request for operations on the accounts of a single customer. We only specified that ATMs must dispense cash but we should not preclude the possibility of printing checks or accepting cash or checks. We may also want to provide the edibility to operate on accounts of different customers although it is not required yet. The different operations must balance properly.

1.5 REFERENCES:

› Object Oriented Software Engineering by Yogesh Singh and Ruchika Malhotra.
>www.slideshare.net/vinothrethnam/bank-management-system
>www.scribd.com/bank_management
>www.wikipedia.org/wiki/BankManagement

2. Overall Descriptions

2.1 Product Perspective:

Banks are just one part of the world of financial institutions, standing alongside investment banks, insurance companies, finance companies, investment managers and other companies that profit from the creation and flow of money. As financial intermediaries, banks stand between depositors who supply capital and borrowers who demand capital. Given how much commerce and individual wealth rests on healthy banks, banks are also among the most heavily regulated businesses in the world.

2.1.1 User Interfaces
The BMS will have the following functions:

a) Login
b) Account Details
c) Account Creation
d) Withdraw Money
e) Deposit Money
f) Maintain Account
g) Delete Account

2.1.2 Hardware Interfaces

a) Screen Resolution of atleast 640 X 480 and above.
b) Support for printer

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2.1.3 Software Interfaces
It should have MS- Windows OS

2.1.4 Communication Interfaces

It Should have LAN connected to the system to be operated.

2.1.5 Memory Constraints

Atleast 512 MB RAM and 500 MB hard disk

2.2 Product Functions:

Using a BMS, Banking Staff can access customer's bank accounts in order to make cash withdrawals, deposit money and check their account balances. The functions of the system are:

- Login
- Get Account Information
- Withdraw Cash
- Deposit Money

2.3 User Characteristics

There are several users of the BMS

-*Customer*

The customer interacts with the BMS via the account no. and pin. It must be very easy for them to use the BMS. They should be supported by the system in every possible way.

-*Staff*

It should be easy to maintain the whole system. The maintainer should be the only person that is allowed to add a new account to the system.

-Qualifications: The user must be comfortable with English.

-Elementary knowledge of computers

2.4 Constraints

- There will be only one administrator.
- The delete operation is not available to the customer, and the customer can only view the details.
- The user can't update the primary key.

3. Specific Requirements

3.1 Functional Requirements

The functional requirements are organized in two sections .First requirements of the ATM and second requirements of the bank.

- Maintain Account Details
- Maintain Customer Details
- Deposit Money

- Withdraw Money
- Login to system
- Generate Report

3.1.1 Withdraw Money

A. Use Case Description

1. Brief Description

This use case describes how a Bank Customer uses a BMS to withdraw money from a bank account.

2. Actors

Admin, Bank Staff (maintainer)

3. Preconditions

Network connection is active.
Customer and Staff has logged in successfully.

4. Post condition

The Customer has got the money and the account details have been updated.

5. Basic Flow of Events

5.1 Enter and Account no. and name

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

5.2 Check details

The system reads the bank account no. and pin.

5.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

5.4 Select Withdrawal

The customer tells the staff member to withdraw money from his account..

5.5 Input Amount

The staff member asks for the amount to be withdrawn.

5.7 Display

The system records a transaction log entry for the withdrawal and displays the output.

6. Alternative Flows

6.1 Customer is not validated.

6.1.a System displays error message.

6.2 Customer Inputs invalid amount**.**

6.2.a BMS prompts user to re-enter valid amount.

6.3 Customer has insufficient funds.

6.3.a BMS displays error message.

B. Validity Checks

1. Every customer has a unique Account no.
2. Account number should be integer type.
3. name should be string type.
4. Account number can't be blank.
5. Name can't be blank.

3.1.2 Deposit Money

A. Use Case Description

1. Brief Description

This use case describes how BMS customer uses the system to deposit the funds in it.

2. Actors

Staff, Admin

3. Precondition

- Network connection is active.
- Admin & Staff has logged in successfully.

4. Post-condition

The Customer has deposited the money and the account details have been updated.

5. Basic Flow of Events

5.1 Enter and Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

5.2 Check details

The system reads the bank account no. and pin.

5.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

5.4 Select Deposit

The customer tells the staff member to deposit money to his account.

5.5 Select Amount

The staff member asks for the amount to deposit.

5.6 Print Details

The system gives a printed details of updated balance to the maintainer.

5.7 Update Log

6. Alternative Flows

6.1 Customer is not validated.

6.1.a System displays error message.

*6.2 Customer selects invalid amount**.***

6.2.a BMS prompts user to re-enter valid amount.

6.3 Customer's deposit limit reached

6.3.a BMS displays error message.

6.3.b BMS shows available deposit limit.

B. Validity Checks

1. Every customer has a unique Account no. and Pin.
2. Account number should be integer type.
3. Pin should be integer type.
4. Account number can't be blank.
5. Pin can't be blank.

3.1.3 Maintain Account Details

Use Case Description

1. Brief Description

This use case helps to maintain the Bank account of Customer.

2. Actors

DEO, Admin

3. Preconditions

Network connection is active.

User must be Logged in to the system.

4. Post condition

The BMS Updates the details of account in the log.

5. Basic Flow of Events

->The system displays for option and the selected flow is followed:

a) Add Account.
b) Update Account.
c) Delete Account.
d) View Account.

A)Add Account:

A.1 Enter Details

The use case begins when the actor Customer provides their details to the staff member in order to create a new account.

A.2 Check details

The details are verified and if no problem occurs, a new account is created.

A.3 Generate a unique account no. and pin.

The system displays the service options that are currently available on the machine.
The Customer selects apply for loan.

A.4 Database Updated

The system updates the account with newly validated account details.

A.5 Print Details

The customer is provided with printed details of validation with all the required details in it.

B) Update Account:

B.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

B.2 Check details

The system reads the bank account no. and pin.

B.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

B.4 Select Update Details

The system displays the service options that are currently available on the machine.
The Customer selects update details option.

B.5 Display Details

The system displays details of Customer's account.

B.6 Update Details

The system updates the log.

C) Delete Account:

C.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

C.2 Check details

The system reads the bank account no. and pin.

C.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

C.4 Confirm for deletion

The system displays the confirmation message.
The staff confirms the deletion.

C.5 Display Details

The system displays details of Customer's account deleted.

C.6 Update log

The system updates the log.

D) View Account:

D.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

D.2 Check details

The system reads the bank account no. and pin.

D.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

D.4 Print Details

The customer is provided with printed details of validation with all the required details in it.

6. Alternative Flows

6.1 Customer is not validated.

6.1.a BMS displays error message.

6.2 Customer inputs wrong data.

6.2.a BMS displays a error message.

B. Validity Checks

1. Every customer has a unique Account no. and Pin.
2. Account number should be integer type.
3. Pin should be integer type.
4. Account number can't be blank.
5. Pin can't be blank.
6. Name should be of character type and about 3 to 50 characters.
7. Address should be of character type with maximum 150 characters.
8. Phone number should be of integer type and should have maximum 12 digits .
9. Email should be of character type and must be valid.
10. DOB should be of type dd/mm/yyyy.
11. Name can't be blank.
12. Address can't be blank.
13. Phone number can't be blank.
14. Email can't be blank.
15. Date of birth can't be blank.

3.1.4 Maintain Customer Details

Use Case Description

1. Brief Description
This use case helps to maintain the Customer Details in Bank.

2. Actors
DEO, Admin

3. Preconditions
Network connection is active.
User must be Logged in to the system.

4. Post condition
The BMS Updates the details of customer in the log.

5. Basic Flow of Events
->The system displays for option and the selected flow is followed:

a) Add Customer details.
b) Update Customer details.
c) Delete Customer details.
d) View Customer details.

A)Add Customer Details

A.1 Enter Details
The use case begins when the actor Customer provides their details to the staff member in order to add new customer.

A.2 Check details
The details are verified and if no problem occurs, a new customer is added.

A.3 Database Updated
The system updates the log with newly validated customer details.

A.4 Print Details
The customer is provided with printed details of validation with all the required details in it.

B) Update Customer Details:

B.1 Enter Account no. and Pin
The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

B.2 Check details
The system reads the bank account no. and pin.

B.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

B.4 Select Update Details

The system displays the service options that are currently available on the machine.
The Customer selects update details option.

B.5 Display Details

The system displays details of Customer.

B.6 Update Details

The system updates the log.

C) Delete Customer Details:

C.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

C.2 Check details

The system reads the bank account no. and pin.

C.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

C.4 Confirm for deletion

The system displays the confirmation message.
The staff confirms the deletion.

C.5 Display Details

The system displays details of Customer deleted.

C.6 Update log

The system updates the log.

D) View Customer Details:

D.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

D.2 Check details

The system reads the bank account no. and pin.

D.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

D.4 Print Details

The customer is provided with printed details of validation with all the required details in it.

6. Alternative Flows

6.1 Customer is not validated.

6.1.a BMS displays error message.

6.2 Customer inputs wrong data.

6.2.a BMS displays a error message.

B. Validity Checks

1. Every customer has a unique Account no. and Pin.
2. Account number should be integer type.
3. Pin should be integer type.
4. Account number can't be blank.
5. Pin can't be blank.
6. Name should be of character type and about 3 to 50 characters.
7. Address should be of character type with maximum 150 characters.
8. Phone number should be of integer type and should have maximum 12 digits .
9. Email should be of character type and must be valid.
10. DOB should be of type dd/mm/yyyy.
11. Name can't be blank.
12. Address can't be blank.
13. Phone number can't be blank.
14. Email can't be blank.
15. Date of birth can't be blank.

3.1.5 View Transactions

A. Use Case Description

1. Brief Description

This use case helps to view the transactions of account in the Bank.

2. Actors

Customer, Staff, Manager.

3. Preconditions

- Network connection is active.
- Manager, Customer and Staff has logged in successfully.

4. Post-condition

The system displays the account details to the user.

5. Basic Flow of Events

5.1 Enter Account no. and Pin

The use case begins when the actor Customer provides their bank account no. and pin to the staff member.

5.2 Check details

The system reads the bank account no. and pin.

5.3 Authenticate Customer

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

5.4 Print Details

The customer is provided with printed details of validation with all the required details in it.

6. Alternative Flows

6.1 Customer is not validated.

6.1.a BMS displays error message.

B. Validity Checks

1. Every customer has a unique Account no. and Pin.
2. Account number should be integer type.
3. Pin should be integer type.
4. Account number can't be blank.
5. Pin can't be blank.

3.1.6 Login

A.)Use Case Description

1. Brief Description

This use case helps to Login in BMS.

2. Actors

DEO, Staff, Manager.

3. Preconditions

Network connection is active.

4. Post-condition

The user is successfully logged in.

5. Basic Flow of Events

5.1 Enter user name & password

The use case begins when the actor user provides their user name and password.

5.2 Check details

The system reads the bank account no. and pin.

5.3 Authenticate user

Perform Sub flow Authenticate Customer to authenticate the use of the account by the individual.

5.4 Login successful

The user is successfully logged in.

6. Alternative Flows

6.1 User is not validated.

6.1.a BMS displays error message.

B. Validity Checks

1. Every user has a unique ID and Password.
2. ID should be character type.
3. Password should be character type.
4. ID can't be blank.
5. Password can't be blank.

3.1.8 Generate Report

A.) Usecase Description

1. Introduction

This use case documents the steps that must be followed in order to generate a report of all customers who have been allocated account in the Bank and/or details of accounts in Bank.

2. Actors

Administrator

3. Pre-condition

The actor must be logged onto the system before the use case begins.

4. Post-condition

If the use case is successful the system is able to display the report of all the customers who have been allocated account in the Bank and/or details of accounts in Bank. No changes are made to database. Else, no report is displayed.

5. Basic Flow

i.) The system requests the administrator to specify the action he/she wishes to generate a report

ii.) Report of available accounts is generated.

6. Alternate Flow

Alternate Flow 1: User Exits

This allows actor to exit the use case anytime. The use case ends.

3.2 Performance Requirements

1. Software should run on 500 MHz, 512 MB RAM machine.
2. Response should be in 3 seconds.

3.3 Software System Attributes

1. Usability : The application is User friendly.
2. Reliability: The software will be reliable.
3. Security: The BMS is password protected.
4. Maintainability: It is easy to maintain.

USE CASE DIAGRAM