

# **Bank Management System (BMS)**



*A project  
submitted to the department of Computer Science and Engineering  
in partial fulfillment of the requirements  
for the degree Bachelor Science by*

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## **Abstract**

The Bank Management System is an application for maintaining a person's account in a bank. In this project, I tried to show the working of a banking account system and cover the basic functionality of a Bank Management System. To develop a project for solving financial applications of a customer in the banking environment to nurture the needs of an end banking user by providing various ways to perform banking tasks. Also to enable the user's workspace to have additional functionalities that are not provided under a conventional banking project. The main aim of this project is to develop software for the Bank Management System. This project has been developed to carry out the processes easily and quickly, which is not possible with the manual systems, which are overcome by this software. This project is developed using Visual Studio (C#) language, and MYSQL use for a database connection. Creating and managing requirements is a challenge of information technology, and product development projects or indeed for any activity where you have to manage a contractual relationship. Requirements definition and management is an activity that can deliver a high, fast return on investment. The project analyzes the system requirements and then comes up with the requirements specifications. It studies other related systems and then comes up with system specifications. The system is then designed by specifications to satisfy the requirements. The system design is then implemented with MYSQL and PHP. The bank management system deals with data entry, validation confirmation, and updating while the interactive system deals with system interaction with the administration and users. Thus, the above features of this project will save transactions and therefore increase the efficiency of the system.

## Declaration

We declare that this project and the work presented in it are our own and has been generated by us and hereby declare that the project entitled “Bank Management System” submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering in the Faculty of Computer Science and Engineering of Bangladesh University of Business and Technology, is our own work and that it contains no material which has been accepted for the award to the candidate(s) of any other degree or diploma, except where due reference is made in the text of the project. To the best of our knowledge, it contains no materials previously published or written by any other person except where due reference is made in the project.

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## Certificate

This is to certify that Akash Kumar Nondi (ID:19202103325), Md. Shafiul Alam (ID:19202103327), A.N.M. Liazur Rahman (ID:19202103344), Md. Raju Raihan (ID:19202103351), were belong to the department of Computer Science and Engineering, have completed their project work titled Bank Management System satisfactorily in partial fulfillment for the requirement of Bachelor of Science in Computer Science and Engineering of Bangladesh University of Business and Technology in the year 2024.

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We pay profound regard to all of our teachers of the department for their very valuable directives and special attention. Our parents are very much keen and hopeful in the best performance of the dissertation we are going to submit. We wish we could fulfill their aspiration. We also pay regards to our friends in the department who, through their interest and work, are our contestant source of inspiration.

## DEDICATION

Dedicated to our parents for all their love and  
inspiration.

## **APPROVAL**

The project work entitled Contact Management System is submitted by Akash Kumar Nondi (ID:19202103325), Md.Shafiul Alam (ID:19202103327), A.N.M. Liazur Rahman (ID:19202103344), Md.Raju Raihan (ID:19202103351) under the department of Computer Science and Engineering of Bangladesh University of Business and Technology is accepted in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering.

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## Abbreviation & Nomenclature

Abbreviation	Description
BMS	<b>B</b> ank <b>M</b> anagement <b>S</b> ystem
BAMS	<b>B</b> ank <b>A</b> ccount <b>M</b> anagement <b>S</b> ystem
HTML	<b>H</b> yper <b>T</b> ext <b>M</b> arkup <b>L</b> anguage
PHP	<b>H</b> yper <b>T</b> ext <b>P</b> reprocessor
SQL	<b>S</b> tructured <b>Q</b> uery <b>L</b> anguage
ATM	<b>A</b> utomated <b>T</b> eller <b>M</b> achine
OOP	<b>O</b> bject <b>O</b> riented <b>P</b> rogramming
HTTPS	<b>H</b> ypertext <b>T</b> ransfer <b>P</b> rotocol <b>S</b> ecure
RAM	<b>R</b> andom <b>A</b> ccess <b>M</b> emory
A/C NO	<b>A</b> ccount <b>N</b> umber
PIN	<b>P</b> ersonal <b>I</b> dentification <b>N</b> umber
SMS	<b>S</b> hort <b>M</b> essage <b>S</b> ervice
DFD	<b>D</b> ata <b>F</b> low <b>D</b> iagrams
ID	<b>I</b> ntity <b>D</b> ocument
URL	<b>U</b> niversal <b>R</b> esource <b>L</b> ocator

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# CHAPTER 1

## INTRODUCTION

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### 1.1 Introduction

The main objective of the project is to develop an online Banking system for banks. In the present system, all banking work is done manually. Users have to visit a bank to Withdrawal or Deposit the amount. In the present bank system, it is also difficult to find the account information of the account holder. In this bank management system, we will automate all the banking processes. In our bank management system, users can check their balance online and they can also transfer money to other accounts online. In this Software, you can keep a record of daily Banking transactions. The main purpose of developing a bank management system is to design an application, which could store bank data and provide an interface for retrieving customer-related details with 100% accuracy. This bank management system also allows the user to add a new customer account, delete an account and the user can also modify existing user account information. Using this system users can also search for any individual account in a few seconds. Using our bank management system users can also check any translation in any account. Our system also provides security checks to reduce fraud. The system will check the user's existence in the database and provide the set of services for the role of the user.

### 1.2 Synopsis

The Bank Management System keeps the day-to-day tally record as a complete banking system. It can keep the information of Account type, account opening form, Deposit fund, Withdrawal, and Searching the transaction, Transaction reports, Individual account opening

form, Group Account. The existing part of this project is; it displays Transaction reports, a Statistical Summary of Account type, and Interest Information.

### **1.3 Getting Started**

If you want to try out banking without committing, select our Banking. You don't have to register in any way, so it's a good way to check it out first before registering. Once you register, you'll have the choice of doing just basic banking and viewing your balance or doing more involved transactions like bill payments and transfers. The choice is yours. It depends on how you like to bank. You will get a confirmation number after each transaction and you can always check the session summary to see what you've done. If you make a mistake, customer service is always available for your good kind help.

### **1.4 Main Purpose**

The traditional way of maintaining details of a user in a bank was to enter the details and record them. Every time the user needs to perform some transactions he has to go to a bank and perform the necessary actions, which may not be so feasible all the time. It may be a hard-hitting task for the users and the bankers too. The project gives a real-life understanding of the Banking System and activities performed by various roles in the supply chain. Here, we provide automation for banking systems through the Internet. The Banking System project captures activities performed by different roles in real-life banking which provides enhanced

techniques for maintaining the required information up-to-date, which results from inefficiency. The project gives a real-life understanding of the Banking System and activities performed by various roles in the supply chain.

## **1.5 What to expect:**

Here are some of the features available through online or manual banking:

- 1. View balances:** Firstly login your account to your account number and password. Then checking your balance doesn't require much work. You simply select Account balances and take a look at your balance and past transactions. If you have more than one account, you can also do transfers between accounts.
- 2. Transfer funds:** When you select Transfer Funds, you'll be asked where to transfer the money to and from, when, and the amount.
- 3. Set up recurring bill payments or transfers:** If you make a regular payment every month, it might be convenient to set up an automatic withdrawal from your account.
- 4. Order Cheques:** We don't need them much anymore due to online banking and debit purchases, but if you still use cheques, you can order them directly from the BAMS website.

## **1.6 Take control**

Online banking helps you become more of a banker, running your accounts like a small business that you control every day. Once you get started, you'll be hooked. Soon enough you'll be checking your bank account as often as your email.

## **1.7 Features of BMS**

- ❖ User Login Interface
- ❖ Adding a Beneficiary account by the customer.
- ❖ Easiest way to deposit and withdraw money without any risk.
- ❖ Transferring amount to the local customer account number.
- ❖ Customers can check all transactions made with their accounts.
- ❖ Customers can check their account statement within a date range.
- ❖ Admin can add/edit/delete customer account
- ❖ Admin can change their password.
- ❖ Admin Login pages are hidden from customers for security purposes.
- ❖ Passwords are stored as encrypted hashes with an additional random salt for added security.

## **1.8 Goals and Objectives**

### **1. Main Goals:**

- ❑ Our motto is to develop a software program for managing the entire bank process related to Administration accounts, customer accounts and to keep track of their property and their various transaction processes efficiently.
- ❑ Hereby, our main objective is the customer's satisfaction considering today's faster in the world.

### **2. Customer Satisfaction:**

- ❑ The client can do his operations comfortably without any risk of losing his privacy.



- ☐ Our software will perform and fulfill all the tasks that any customer would desire.

### **3. Saving Customer Time:**

- ☐ The client doesn't need to go to the bank to do a small operation.

### **4. Protecting The Customer:**

- ☐ It helps the customer to be satisfied and comfortable in his choices, this protection contains the customer's account, money, and privacy.

## CHAPTER 2

### Modules and Requirements

---

#### 2.1. Modules Description

The Modules description of the Bank Management System project. These modules will be developed in Visual Studio source code and the MYSQL database.

1. **Create New Account:** A customer who has an account in the world can create a virtual account through this module. This module receives the customer profile details and the bank account details with the proof of ownership of the bank account.

2. **Login:** Virtual account holders can log in to the system using this module. Thus this is the secured login page for the customers on the website.

3. **Virtual Account:** After the approval of the new virtual account creation, the customer is assigned a unique virtual account number to make the online money transactions. This module views the details of the logged customer's virtual account.

4. **Bank Accounts:** A customer may have more than one bank account in various banks, in this case, the customer is prompted to decide which bank account should reflect in the account debit or amount credit. For these operations, customers can add their owned bank accounts here and it will be approved by the administrations of the system.

5. **Fund Transfer:** This is the module to make a fund transfer to the virtual bank account holders or the usual bank account holders from the customer's specific bank account.

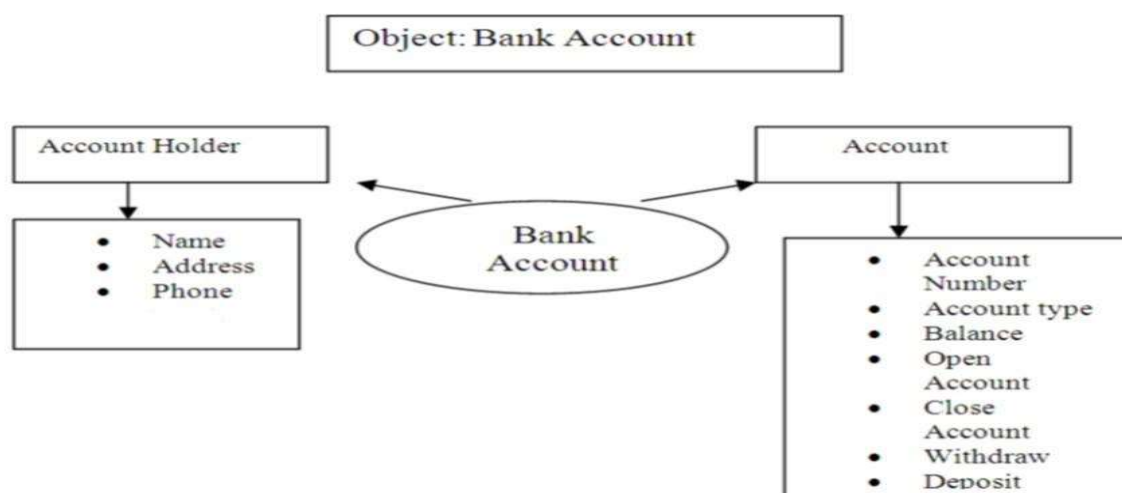
6. **Beneficiary:** A beneficiary is a person who receives money. Here the customer can add the beneficiaries to make fund transfer in the future.

7. **Transactions:** This module displays the transactions made by the customer on a particular date with the transaction details.

8. **Administrative Control:** This module contains administrative functions such as viewing all virtual accounts, transactions, approving bank accounts, approving virtual accounts, etc.

Some other features and actions can be performed on a bank account but we are not going to look at bank accounts in their entirety only the basics, this way we avoid overcomplicating the exercise. The purpose of this whole exercise is to show the usefulness of object-oriented programming as opposed to wanting to create a banking system.

Translating the above points into software is easy when you think of a bank account as an object:



**Figure 2.1 : Bank Account System**

## **2.2.Methods**

➡ We need to be able to generate an account number

➡ Account types: Savings or Current Account

➡ Maintain/update Balance

➡ Open/Close Account

➡ Withdraw/Deposit

The next thing we need to look at is where to store the information about the account. The best place to store information relating to bank accounts is in a database. To work with a database (from an OOP point of view) will require the following methods:

➤ Inserting account details

➤ Updating the balance on any withdrawal or deposits made

Our class will then be called Accounts and we will have a constructor method with the same name that will help us initialize some variables.

## **2.3.Administrative Modules**

Here is my project, there are two types of modules. This module is the main module that performs all the main operations in the system. The major operations in the system are:

## **2.4.Admin Module**

Admin can access this project and there is an authorization process. If you log in as an Admin then you will be redirected to the Admin Home Page and if you are a simple user you will be redirected to your Account Home Page. This performs the following functions: Create Individual

Accounts, Manage existing accounts, View all transactions, Balance inquiry, Delete/close account, etc.

- ➡ Admin login
- ➡ Add/delete/update account
- ➡ Withdrawal/deposit
- ➡ Account Information
- ➡ User details list

## **2.5 User Module**

A simple user can access their account by using an ATM card and can withdraw money from their account. Users can see their balance inquiry too.

- User login, use PIN system
- View statements transaction
- User account details

## **2.6 Hardware Requirements Specification**

Processor	:	Intel Core i3 or later
Main Memory(RAM)	:	4096 MB
Cache Memory	:	512 KB
Monitor	:	14 inch Color Monitor
Keyboard	:	108 Keys
Mouse	:	Optical Mouse
Hard Disk	:	512 GB

## **2.7 Software Requirements Specification**

Front End/Language : C#

Back End/Database : MYSQL

Additional Tools : XAMPP server

Server Operating System : Windows 7, 8, 9, 10

## CHAPTER 3

### System & Database Design

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#### 3.1. System Design

Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is key to an effective system. The term “design” is defined as “the process of applying various techniques and principles to define a process or a system in sufficient detail to permit its physical realization”. It may be defined as a process of applying various techniques and principles to define a device, a process, or a system in sufficient detail to permit its physical realization. Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm that is used. The system design develops the architectural detail required to build a system or product. As in the case of any systematic approach, this software has undergone the best possible design phase fine-tuning all efficiency, performance, and accuracy levels. The design phase is a transition from a user-oriented document to a document to the programmers or database personnel.

**System design goes through two phases of development:**

- Logical Design and
- Physical Design.

## 3.2 Logical Design

The logical flow of a system and define the boundaries of a system. It includes the following steps:

- Reviews the current physical system – its data flow, file content, volumes, etc.
- Prepares output specifications – that is, determines the format, content, and frequency of reports.
- Prepares input specifications – format, content, and most of the input functions.
- Prepares edit, security, and control specifications.
- Specifies the implementation plan.
- Prepares a logical design walk-through of the information flow, output, input, controls, and implementation plan.
- Reviews benefits, costs, target dates, and system constraints.

## 3.3 Physical Design

The physical system produces the working systems by defining the design specifications that tell the programmers exactly what the candidate system must do. It includes the following steps.

- Design the physical system.
- Specify input and output media.
- Design the database and specify backup procedures.
- Design physical information flow through the system and a physical design Walkthrough.
- Plan system implementation.
- Prepare a conversion schedule and target date.
- Determine training procedures, courses, and timetable.
- Devise a test and implementation plan and specify any new hardware/software.
- Update benefits, costs, and conversion date, and system constraints.



### 3.4 Data flow diagram

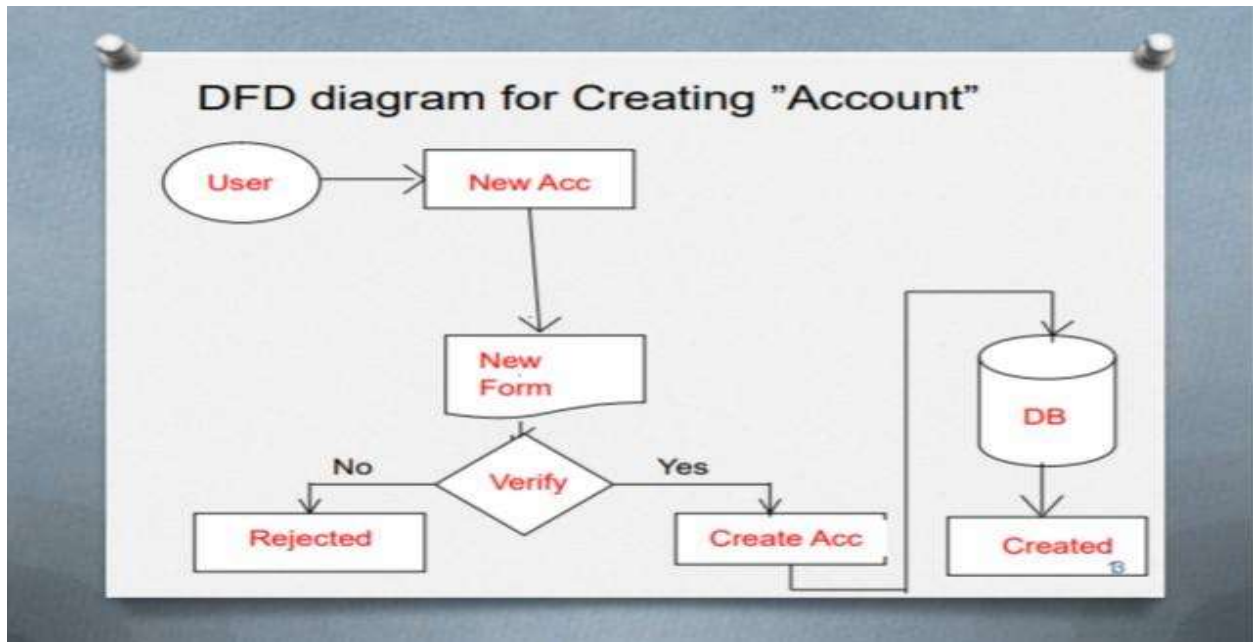


Figure-3.1: Create new account DFD

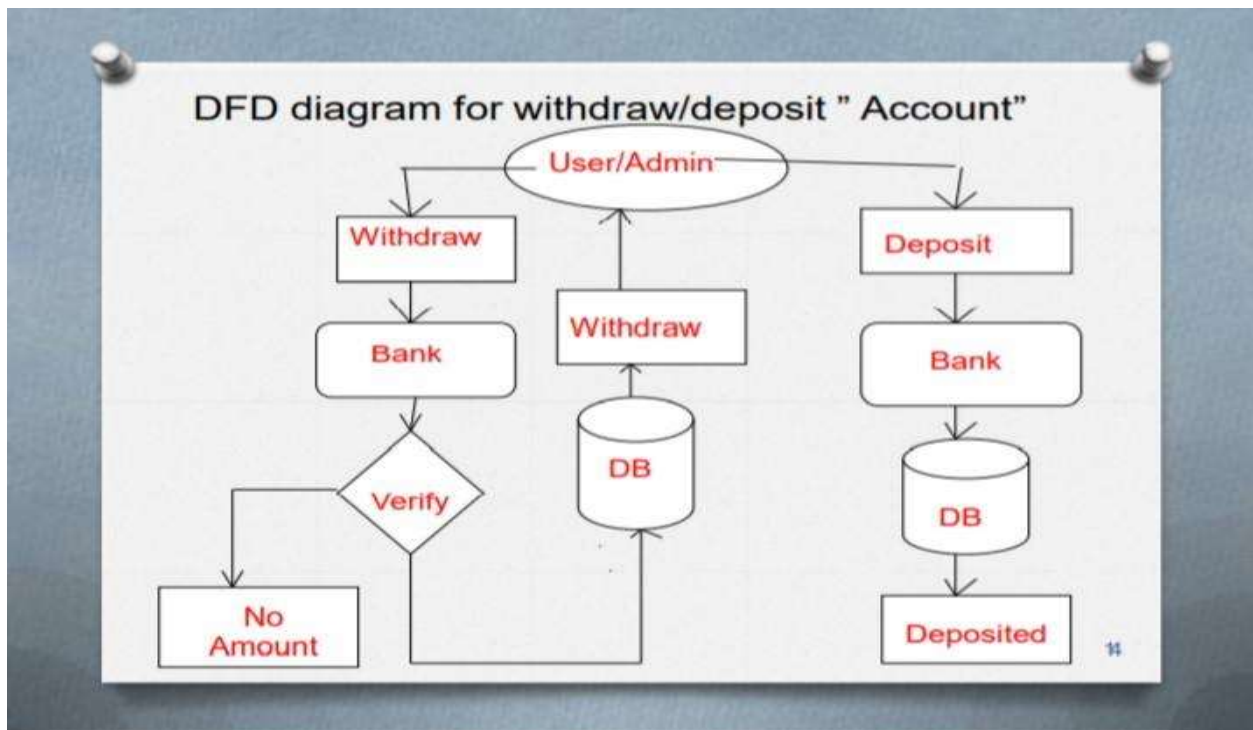


Figure-3.2: Withdraw/deposit account DFD

## DFD diagram for deleting an "A/C"

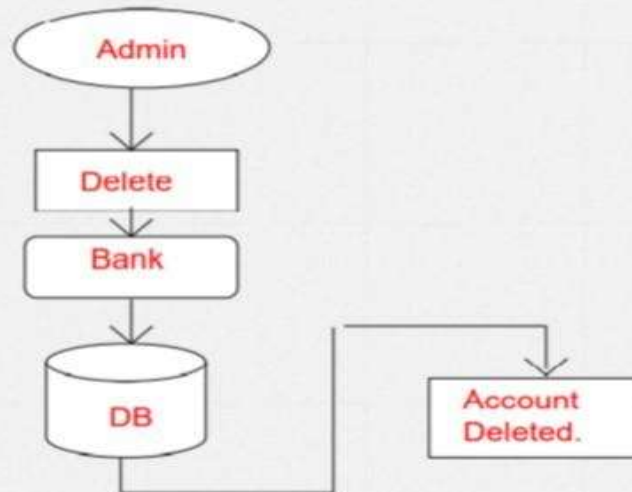


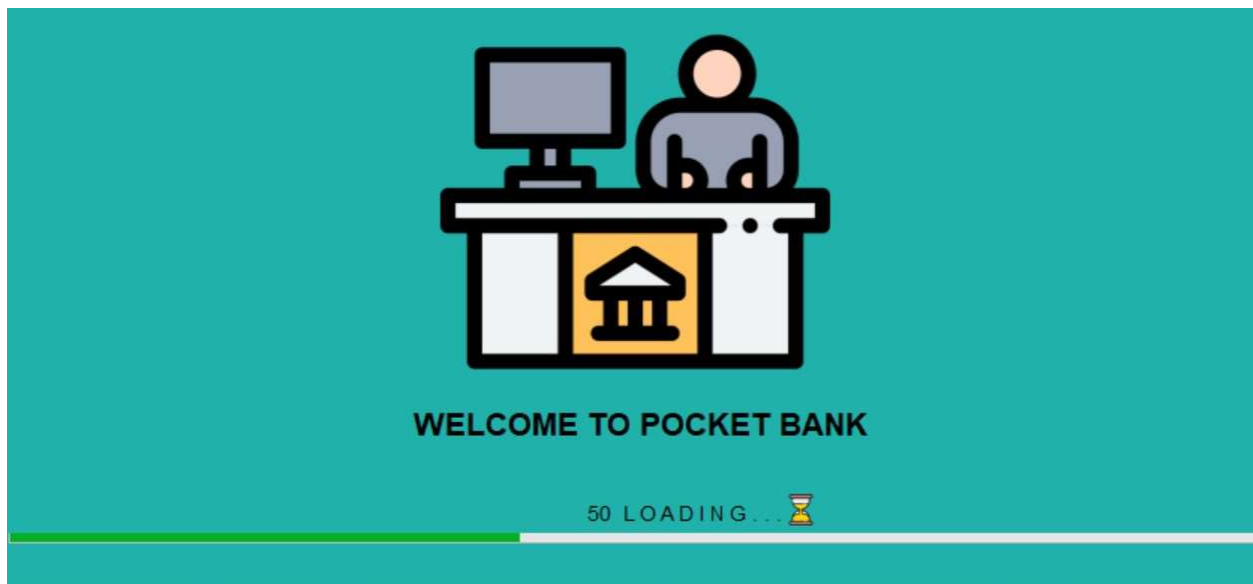
Figure-3.3: Deleting an account DFD

## CHAPTER 4

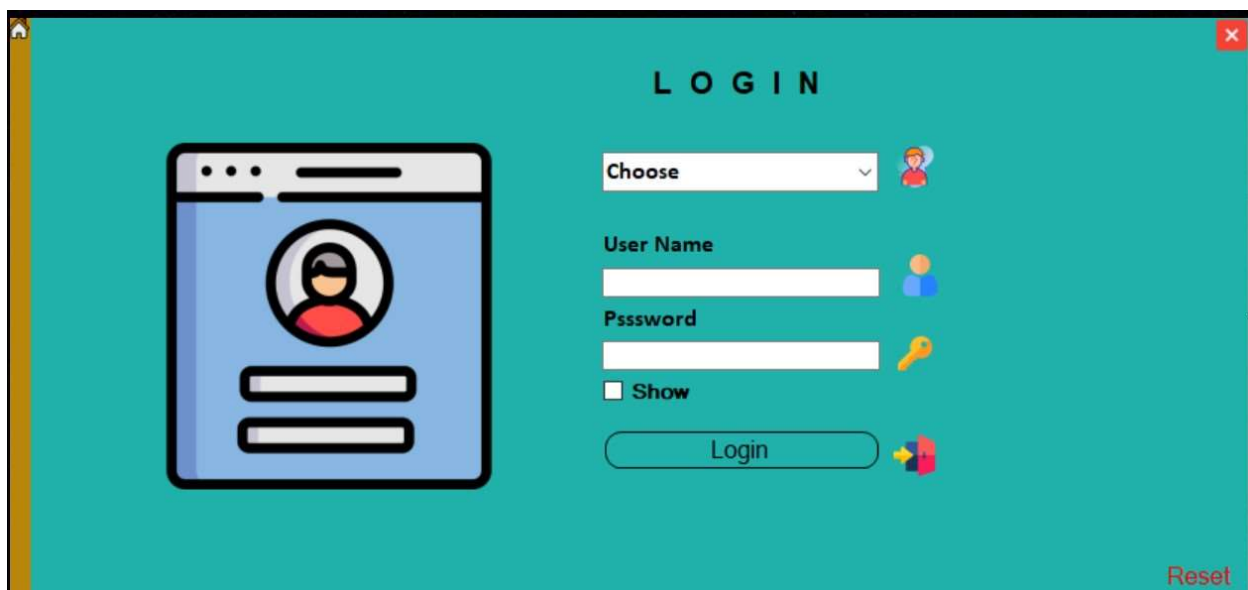
### Sample Screenshot of Project

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#### 5.1 Welcome Page




#### 5.2 Login Section



### 5.3 Admin home page

Setting

MANAGE AGENTS



Name

Address

Password

Phone

4	Raju	1234	+8801743270715	Vola
8	Sajid Alom	1234	+88017777	Dhaka
9	Akash Nondi	3456	+8801724536783	Vola

Edit


Delete

Submit

Back

### 5.4 Settings Page

Setting



Admin New Password

Theme

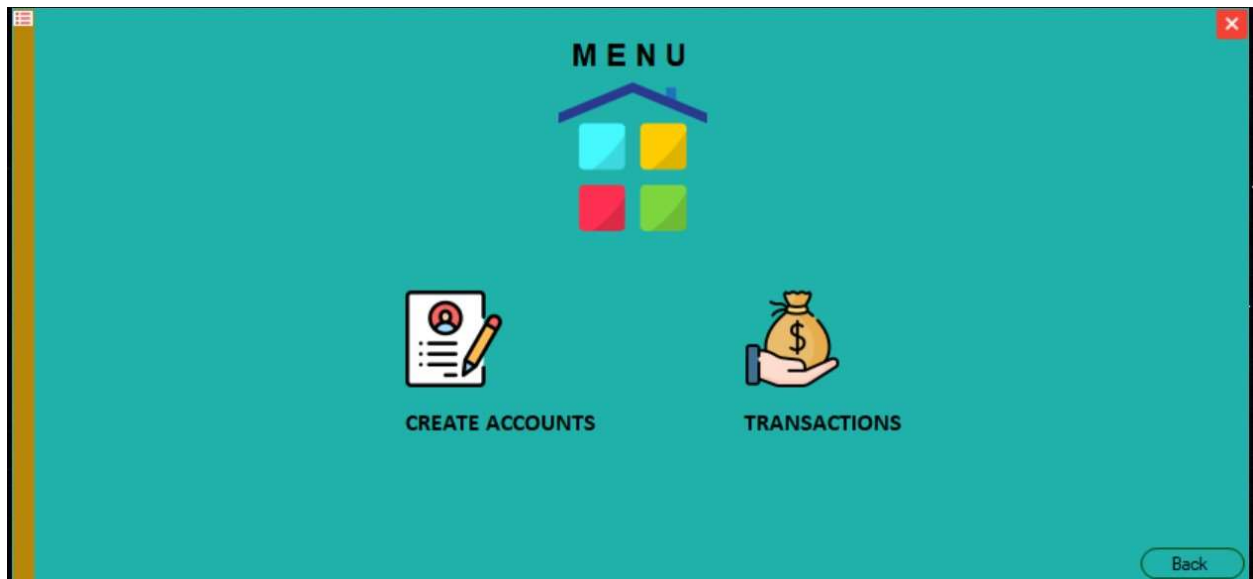
Show

Apply

Apply

Back

## 5.5 Menu for agent



## 5.6 Create Account

**New Account Form**

Name  Gender

Phone  Address


Income

Occupation  Education

1003	Akash	+880172453...	Kalkini , Mad...	Male	Student	HSC or High...	7830	1000
1004	Saiful	+880167893...	Madaripur	Male	Student	PSC	19000	5000
1006	Asad	+880168912...	Barisal	Male	Farmar	JSC/JDC	25000	2000
1008	D	8806756124	M	F	Student	HSC or High...	8888	1000

Edit Delete Submit Back

## 5.7 Transaction




DEPOSIT

Account Number

Amount

Deposit




WITHDRAW

Account Number

Amount

Withdraw



TRANSFER


From

Balance

To

Amonut

Transfer




Check Balance

Enter Account Number

Check

Your Balance



Back

## **CHAPTER 5**

### **Conclusion**

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#### **6.1 Conclusion**

This project is developed to nurture the needs of a user in the banking sector by embedding all the tasks of transactions taking place in a bank. The future version of this project will still be much enhanced than the current version. Writing and depositing checks are perhaps the most fundamental ways to move money in and out of a checking account, but advancements in technology have added ATM and debit card transactions. All banks have rules about how long it takes to access your deposits, how many debit card transactions you're allowed in a day, and how much cash you can withdraw from an ATM. Access to the balance in your checking account can also be limited by businesses that place holds on your funds. Banks are providing internet banking services also so that the customers can be attracted. By asking the bank employees we came to know that maximum numbers of internet bank account holders are youth and businessmen. Online banking is an innovative tool that is fast becoming a necessity. It is a successful strategic weapon for banks to remain profitable in the volatile and competitive marketplace of today. If proper training should be given to a customer by the bank employees to open an account will be beneficial secondly the website should be made friendlier from where the first-time customers can directly make and access their accounts. Thus the Bank Management System is developed and executed successfully.

## 6.2 Future works

The “Bank Management System is a big and ambitious project. I am thankful for being provided this great opportunity to work on it. As already mentioned, this project has gone through

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extensive research work. Based on the research work, we have successfully designed and implemented a banking system. To know what the future of banking looks like, it’s probably worth looking at the present – banking isn’t new. The most valuable future looks are below:

- More branches of the bank, maybe it will be international, that means more ATMs outside.
- Customer issues are developed based on their needs, so the help desk will be aware of their needs and easy to use.
- Developing a mobile App for a banking system that helps users to obtain their operations without going to the bank only he needs to sign in using his A/C NO. And password and then use your PIN. Finally, the system will update automatically.



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