



# BANK MANAGEMENT SYSTEM

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# OBJECTIVES

- 1.To design a system that manages bank operations efficiently, such as account creation, transaction handling, and report generation.
- 2.To simplify and automate routine banking processes while maintaining data integrity and security.
- 3.To provide a user-friendly interface for customers and administrators.
- 4.To enhance scalability and maintainability of the banking system by implementing modular programming techniques.
- 5.To improve transaction recording and reporting accuracy.



# INTRODUCTION

- The **Bank Management System** is a software application developed using C++ to facilitate and manage everyday banking operations. It serves as an interface for users to perform essential tasks such as depositing and withdrawing money, viewing account details, and generating transaction reports. It also supports the creation and management of bank accounts. The system incorporates object-oriented programming principles to ensure efficiency and ease of maintenance.
- This project aims to provide robust functionality for both customers and administrators by integrating features like authentication, real-time balance updates, and detailed account history tracking. The focus is on optimizing performance and security while maintaining simplicity for

# KEY COMPONENTS OF THE SYSTEM

## **Account Management**

- Create and manage user accounts (e.g., savings or current accounts).
- Retrieve and update account details (e.g., name, account number, balance).

## **Transaction Handling**

- Deposit and withdraw money with automatic balance updates.
- Record transactions with timestamps and descriptions.

## **Authentication System**

- Secure login for administrators and customers.
- Password protection and account validation.

## **Report Generation**

- Generate summaries of account statements and transactions.
- Export data for auditing or customer reference.

## **Data Persistence**

- Save account details and transaction logs to files.
- Retrieve data upon application startup to maintain continuity.

## **User Interface**

- Text-based (Console) interface for basic interaction.
- Support for menus and error prompts.



# TECHNICAL SPECIFICATIONS

## Programming Language

C++, with focus on object-oriented principles such as encapsulation, inheritance, and polymorphism.

## Development Environment

Compiler: GCC (MinGW for Windows) or similar.

IDE: Visual Studio, Code::Blocks, or Dev-C++.

## File Handling

File Input/Output for data persistence (e.g., .txt or .csv files for storage).

## Key Libraries

<iostream>: For input/output operations.

<fstream>: For file handling.

<string>: For string manipulations.

<iomanip>: For formatted output.

## Performance Requirements

Memory-efficient algorithms to ensure smooth operation.

Response time for transactions should be less than 1 second.

## Operating System Compatibility

Cross-platform (Windows, macOS, Linux).

# OUTPUT

```
=== Bank Management System ===  
1. Create Account  
2. Login  
3. Deposit  
4. Withdraw  
5. View Transaction History  
6. Apply for Loan  
7. View Loan Details  
8. Create Fixed Deposit  
9. View Fixed Deposit Details  
10. View Balance  
11. Logout  
12. Exit  
Enter your choice: |
```

```
Enter your choice: 1  
  
Enter username: unknown  
Enter password: 123@123
```

```
Enter your choice: 2  
  
Enter username: unknown  
Enter password: 123@123  
  
Login successful!
```

```
Enter your choice: 3  
  
Enter amount to deposit: $400000  
  
Amount deposited successfully. New balance: $400000
```

```
Enter your choice: 4  
  
Enter amount to withdraw: $5000  
  
Amount withdrawn successfully. New balance: $395000
```



```
Transaction History:  
Deposit - $4000000.00  
Withdrawal - $5000.00
```

```
Enter your choice: 6
```

```
Enter loan amount: $3000000
```

```
Loan approved for $3e+006 at an interest rate of 5% annually.
```

```
Enter your choice: 7
```

```
Loan Amount: $3e+006  
Interest Rate: 5%
```

```
Enter your choice: 8
```

```
Enter amount for Fixed Deposit: $4500000
```

```
Enter tenure in years: 5
```

```
Fixed Deposit created for $4.5e+006 for 5 years at 7% interest rate.
```

```
Enter your choice: 9
```

```
Fixed Deposit Amount: $4.5e+006
```

```
Tenure: 5 years
```

```
Interest Rate: 7%
```

```
Enter your choice: 11
```

```
Logged out successfully!
```

The image features a blue gradient background with white circuit-like lines in the corners. These lines consist of straight segments and small circles, resembling a stylized electronic circuit or data network. They are positioned in the top-left, top-right, bottom-left, and bottom-right corners, framing the central text.

# THANK YOU