BANKING SYSTEM PROJECT REPORT

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Abstract

This project is a simple command-line banking system built in the C programming language. It supports basic operations like creating an account, depositing money, withdrawing money, and viewing balance.
The program uses **file handling** to save and load account data from a text file, allowing the system to retain information between runs.

Problem Definition

A small bank wants a simple terminal-based system to manage basic customer transactions. The system should allow multiple accounts and store all data permanently.

Objectives

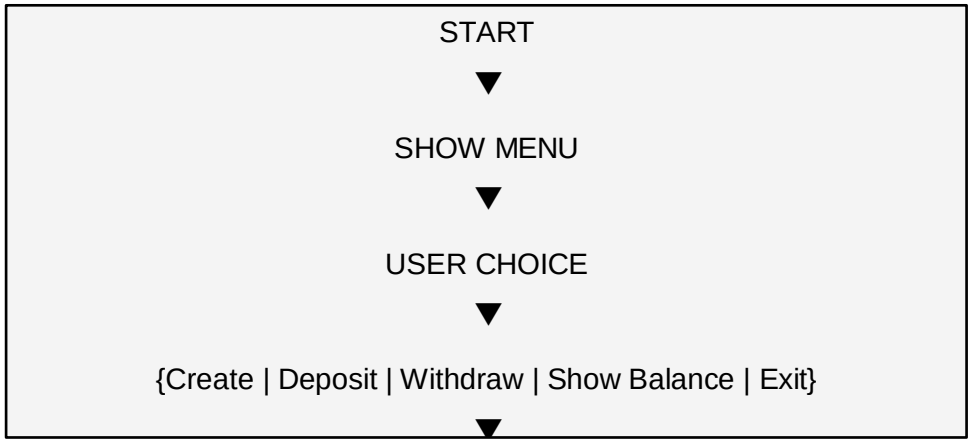
- Create a simple and understandable banking application
- Use structures in C to represent accounts
- Implement file handling to save account data
- Provide user interaction using a menu system

System Requirements

- C compiler (GCC)
- VS Code or any code editor
- Linux/Windows

System Design

Flowchart



Algorithm

Create Account

1. Ask user for name
2. Generate new account number
3. Store account in array
4. Save array to file

Deposit

1. Enter account number
2. Search account
3. Add amount
4. Save changes

Withdraw

1. Enter account number
2. Check balance
3. Deduct amount
4. Save changes

Show Balance

1. Enter account number
2. Display name and balance

File Load

1. Open accounts.txt
2. Read each line
3. Fill array

File Save

1. Open file in write mode
2. Write all accounts

Implementation

Language and Approach

The project is made in C using a menu-driven program.
Functions are used for each banking operation and file handling is used to save accounts.

Structure Used

```
typedef struct {
   int accountNumber;
   char name[50];
   float balance;
} Account;
```

Files in the Project

- **bank.h – declarations**
- **bank.c – functions**
- **main.c – menu + calling functions**
- **accounts.txt – file where data is saved**

File Handling

Two main functions handle permanent storage:

Load accounts at program start:

```
int loadAccounts(Account a[]) {
   FILE *f = fopen("accounts.txt","r");
   if(!f) return 0;
   int c=0;
   while(fscanf(f,"%d %s %f",&a[c].accountNumber,a[c].name,&a[c].balance)==3)
      c++;
   fclose(f);
   return c;
}
```

Save accounts after any change:

```
void saveAccounts(Account a[], int n) {
   FILE *f = fopen("accounts.txt","w");
   for(int i=0;i<n;i++)
      fprintf(f,"%d %s %.2f\n",a[i].accountNumber,a[i].name,a[i].balance);
   fclose(f);
}
```

Menu Logic

1. Create Account

2. Deposit

3. Withdraw

4. Show Balance

5. Exit

Each choice calls its respective function.

Functions Implemented

- **createAccount() – stores name + acc number**
- **deposit() – adds amount**
- **withdraw() – deducts amount**
- **showBalance() – prints details**
- **saveAccounts() / loadAccounts() – file storage**

Code Snippets

Structure

```
typedef struct {
   int accountNumber;
   char name[50];
   float balance;
} Account;
```

File Save Function

```
void saveAccounts(Account accounts[], int count);
```

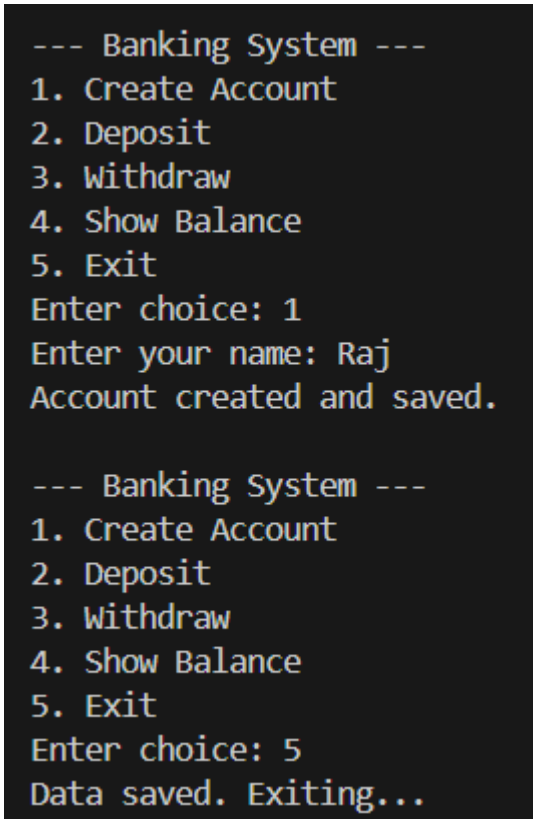
File Load Function

```
int loadAccounts(Account accounts[]);
```

Testing

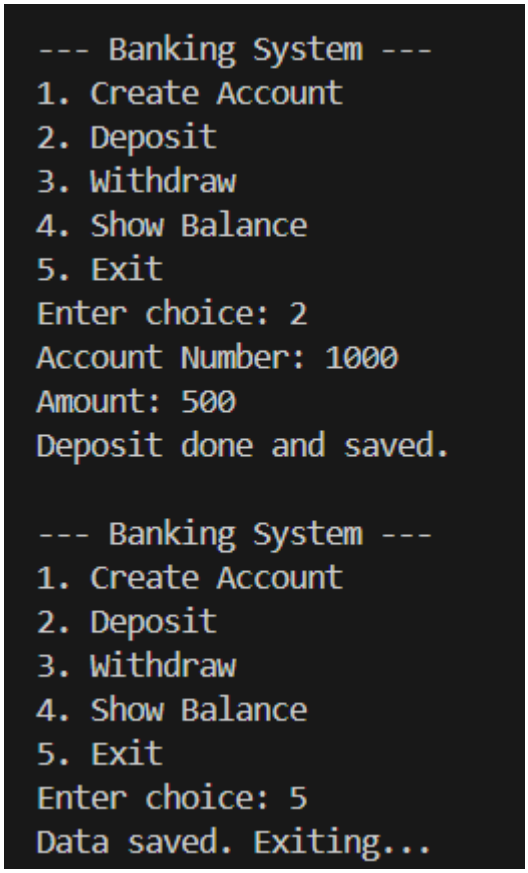
Test Case 1: Create Account

Input:
Name = Raj
Output: Account Created: 1000



Test Case 2: Deposit

Input:
Account: 1000
Amount: 500
Output: Deposit done.



Test Case 3: Withdraw

Input:
Account: 1000
Amount: 200
Output: Withdraw done.

```
--- Banking System ---
1. Create Account
2. Deposit
3. Withdraw
4. Show Balance
5. Exit
Enter choice: 3
Account Number: 1000
Amount: 200
If successful, changes saved.

--- Banking System ---
1. Create Account
2. Deposit
3. Withdraw
4. Show Balance
5. Exit
Enter choice: 5
Data saved. Exiting...
```

Sample File Output

Inside accounts.txt:

1000 Raj 200.00

Conclusion

The project successfully demonstrates how file handling, structures, and functions can be combined to create a functional banking system in C.
It is easy to extend and modify and gives a good understanding of basic C programming concepts.

References

- Class lecture notes
- GCC manual

- Basic C Programming Books
