Group Project
Node 4

Overview

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Introduction :

Bank Customer Management System is a console-based bank management system designed to handle and organize customer data in a simplified banking environment.

```
****************************************
*       Bank Management System         *
****************************************
*                                      *
*       1. Add New Customer            *
*       2. Edit Customer               *
*       3. View Customer Details       *
*       4. Delete Customer             *
*       5. Deposit                     *
*       6. Withdraw                    *
*       7. Transfer Money              *
*       8. Exit                        *
*                                      *
****************************************
```

Code Structure :

our project has these files:

- **main.c →** shows the menu and handles user input.
- **functions.c →** contains all the features (add, edit, transfer...).
- **functions.h →** defines the customer and all function headers.
- **customers.txt →** saves customer data permanently.

Main Functions

1. Create customer
2. Edit customer
3. Find customer
4. Print customer data
5. Delete customer
6. Transfer money()
7. Deposit / Withdraw

Main Functions :

Create customer

Adds a new customer by collecting their name, phone number, and initial balance. Assigns a unique ID and stores the customer in the system.

Edit customer

Allows updating an existing customer's details (name, phone, or balance) by entering their ID.

print customer data

Displays customer information (ID, name, phone, balance) by searching with their ID.

delete customer

Removes a customer from the system by ID. It shifts the array to maintain correct indexing.

Main Functions :

Find customer

Searches for a customer by ID and returns their index in the array (used internally in other functions).

transfer money

Transfers money from one customer to another by using both IDs. Checks if sender has enough balance.

deposit

Increases a customer’s account balance by a specified amount after verifying the ID.

withdraw

Decreases a customer’s balance after checking sufficient funds and valid ID.

Save Data

Purpose:

To store all customer records permanently by writing them to a file (customers.txt).

How it works:

- Opens the file in write mode using fopen("customers.txt", "w").
- Loops through the customers array.
- For each customer, it writes their details (ID, name, phone, balance) using fprintf() in formatted text form

Load Data

Purpose:

To read previously saved customer data from the file into memory when the program starts.

How it works:

- Opens the file in read mode using fopen("customers.txt", "r").
- Reads each line using fscanf() and fills the customers array with the loaded data.

Error Handling :

To make the system user-friendly and avoid crashes or incorrect operations, we implemented proper **error handling:**

- No negative balance allowed
- Customer must exist
- Sufficient balance check before withdrawal/transfer
- Invalid ID input

```
Enter your phone number: 3ads6
Invalid phone.
```

```
Enter customer ID for withdrawal: 41
Enter amount to withdraw: 49876521
Insufficient balance.
```

```
Enter your balance: -3000
Balance cannot be negative. Try again.
```

```
Enter customer ID for withdrawal: 948
Customer not found.
```

```
Enter your choice (1-8): 3
Enter Customer ID to display: 41
Customer Data:
ID: 41
Name: asvk
Phone: 01234567893
Balance: 3216549.00
```

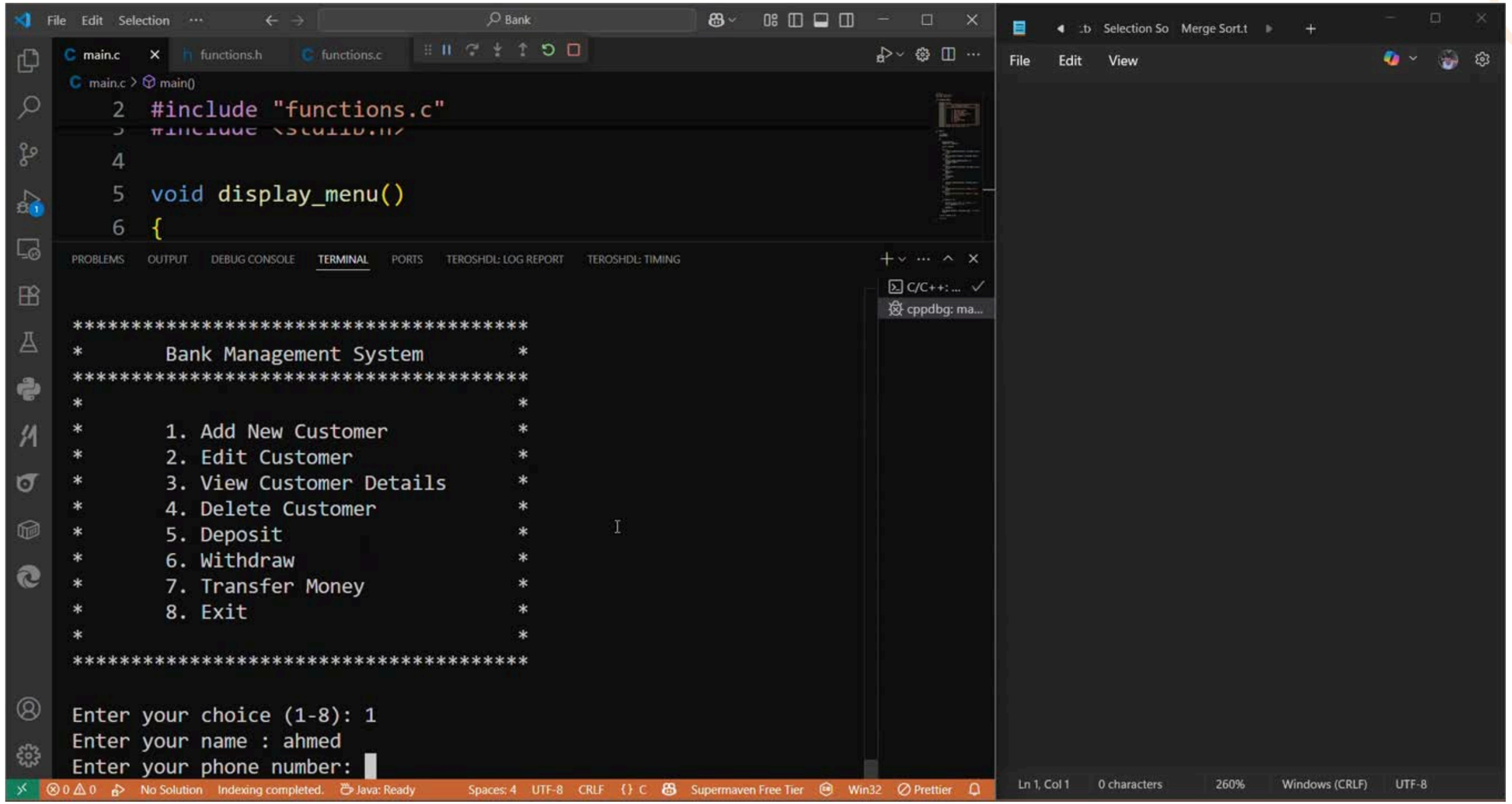
```
Enter your choice (1-8): 7
Enter sender ID: 6541223
Enter recipient ID: 41
Enter amount to transfer: 65106
Customer not found

Press Enter to continue...
```

```
Enter your choice (1-8): 6
Enter customer ID for withdrawal: 41
Enter amount to withdraw: 600
Withdrawal completed successfully.

Press Enter to continue...
```

Demo :


File Edit Selection
Bank
main.c
functions.h
functions.c
main.c > main()
#include "functions.c"
void display_menu()
{
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS TEROSHDL: LOG REPORT TEROSHDL: TIMING
C/C++: ...
cppdbg: ma...
Bank Management System
1. Add New Customer
2. Edit Customer
3. View Customer Details
4. Delete Customer
5. Deposit
6. Withdraw
7. Transfer Money
8. Exit
Enter your choice (1-8): 1
Enter your name : ahmed
Enter your phone number:
No Solution Indexing completed. Java: Ready Spaces: 4 UTF-8 CRLF C Supermaven Free Tier Win32 Prettier
Selection So Merge Sort.t
File Edit View
Ln 1, Col 1 0 characters 260% Windows (CRLF) UTF-8

Thank You