**PROJECT USING C:**

**Submitted by**

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Under the supervision of

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**DEPARTMENT OF BASIC SCIENCE AND HUMANITITES**

**INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA**

**Project Report: ATM Machine Program**

**Introduction**

The purpose of this project is to design a program in C that simulates an ATM machine. The program allows users to perform basic banking operations such as deposits and withdrawals, check their account balance, and change their PIN.

The program was developed using the C programming language and runs on a command-line interface. It is intended for educational purposes only and does not include advanced security measures or error handling.

**Project Scope**

The scope of this project includes the following features:

* User authentication using a PIN code
* Check account balance
* Deposit money
* Withdraw money
* Change PIN code

**Program Design**

The program is designed using a simple menu-based interface. When the program is started, the user is prompted to enter their PIN code. If the PIN code is incorrect, the user is prompted to try again. If the PIN code is correct, the user is presented with a menu of options.

The menu options are as follows:

1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Change PIN
5. Exit

The program uses a switch statement to execute the appropriate code for each option selected by the user.

**Program Implementation**

The program consists of three files:

* **main.c**: This file contains the main function that controls the flow of the program and implements the menu-based interface.
* **atm.c**: This file contains the implementation of the functions used in the program.
* **atm.h**: This file contains the function prototypes for the functions used in the program.

The program uses the following functions:

**int authenticate\_user(int pin)**

This function takes an integer argument **pin** and returns an integer value. It checks if the entered PIN is correct and returns 1 if the PIN is correct, otherwise it returns 0.

**void check\_balance(int balance)**

This function takes an integer argument **balance** and returns nothing. It simply prints the user's account balance to the console.

**void deposit\_money(int \*balance)**

This function takes a pointer to an integer argument **balance** and returns nothing. It prompts the user to enter an amount to deposit and adds the amount to the user's account balance.

**void withdraw\_money(int \*balance)**

This function takes a pointer to an integer argument **balance** and returns nothing. It prompts the user to enter an amount to withdraw and subtracts the amount from the user's account balance.

**void change\_pin(int \*pin)**

This function takes a pointer to an integer argument **pin** and returns nothing. It prompts the user to enter a new PIN and updates the **pin** variable.

**Variables**

1. **pin** - an integer variable that stores the user's PIN number.
2. **balance** - an integer variable that stores the user's account balance.
3. **deposit** - an integer variable that stores the amount to be deposited.
4. **withdraw** - an integer variable that stores the amount to be withdrawn.
5. **new\_pin** - an integer variable that stores the new PIN entered by the user.
6. **choice** - an integer variable that stores the menu option selected by the user.
7. **is\_authenticated** - a boolean variable that stores whether or not the user has been authenticated.

**Files**

1. **main.c** - the main file that contains the main function and implements the menu-based interface.
2. **atm.c** - the implementation file that contains the functions for various ATM transactions.
3. **atm.h** - the header file that contains the function prototypes for the ATM functions.

**Functions**

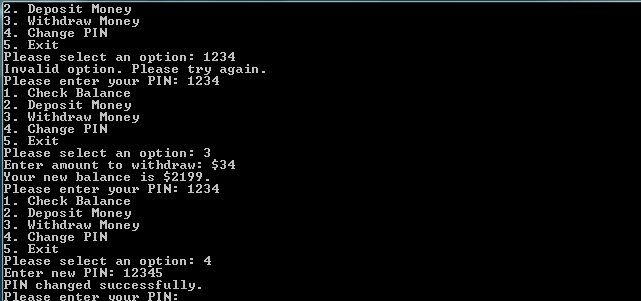
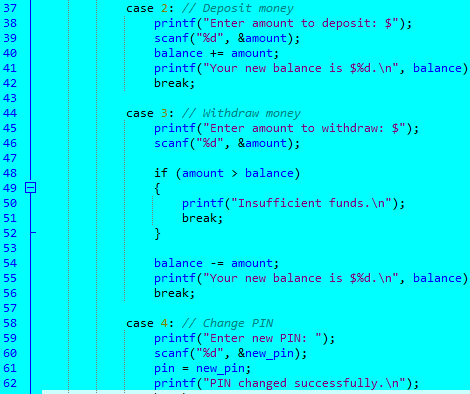
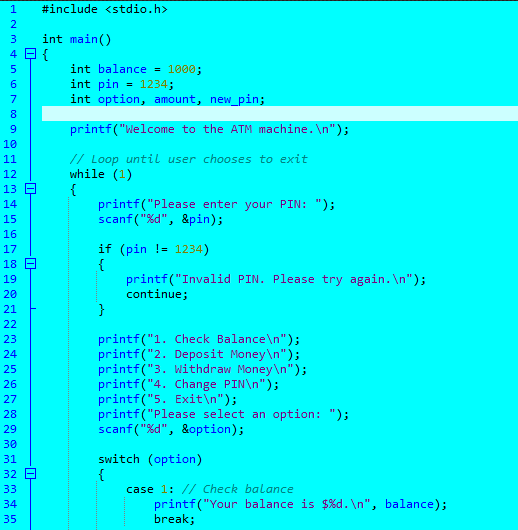
1. **int authenticate\_user(int pin)** - a function that takes the user's PIN as an input and returns an integer value indicating whether or not the user is authenticated.
2. **void check\_balance(int balance)** - a function that takes the user's account balance as an input and displays it on the screen.
3. **void deposit\_money(int \*balance, int deposit)** - a function that takes the user's account balance and the amount to be deposited as inputs and updates the account balance.
4. **void withdraw\_money(int \*balance, int withdraw)** - a function that takes the user's account balance and the amount to be withdrawn as inputs and updates the account balance.
5. **void change\_pin(int \*pin, int new\_pin)** - a function that takes the user's current PIN and the new PIN as inputs and updates the user's PIN.

**Databases**

The ATM machine program does not use any external databases to store user information. Instead, the program stores the user's PIN number and account balance as variables in memory.

**Features**

1. User Authentication - The program prompts the user to enter their PIN number to authenticate them.
2. Check Balance - The program allows the user to check their account balance.
3. Deposit Money - The program allows the user to deposit money into their account.
4. Withdraw Money - The program allows the user to withdraw money from their account.
5. Change PIN - The program allows the user to change their PIN number.

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