ATM SIMULATION SYSTEM

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In partial fulfilment of the requirements of the course
'COMPETITIVE PROGRAMMING' .

- Lovely Professional University ,Phagwara

TABLE OF CONTENTS

Acknowledgement

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We are obliged to the project team members for the valuable information provided by them in their respective fields. Thanks to all for their cooperation in this project.

Introduction

The Automated Teller Machine ATM Banking System is a banking application developed to perform different banking services through the Automated Teller Machines. The all functions include the regular transactions like cash deposits, cash withdrawals, balance enquiry, balance statements, savings account, and current account; change PIN Number and so on. The application design maintains the information of the accounts of various customers including the information of the ATM cards, their types Credit cards, Debit Cards and the transactions done by the customers through the ATM machine centres with correlation of the Banking Services. The stored details also include the information of the various centres in and around the ATM services, which help in the relational maintenance of every transaction in the ATM Machine by the customers with their concerned branch operations.

We tried to perform the same operations in our project with the help of C++ . It contains almost all functionalities which an ATM has . All those things have been done with the help of a class and separate functions have been assigned for those functionalities .

Project Objectives

We as a team have tried our best to achieve team goals by creating a project in C++ which is similar to an ATM machine . At this point of time we are not looking to build a major project which can be useful to society or something like that .

But with the help of basic concepts which we learnt in the summer training course ,we tried to implement all those things in our program.

A beginner can easily understand all the things by looking at the code . There are different functions which have different functionalities . with the help of switch cases respective functions have been called which are inside a class ,and they return the outputs .

So, as a team ,our main objective in this project is to use basic programming knowledge and create something out of it which encourages and motivates us to move ahead in our journey ,teaches time management, teamwork and which shows we are on the right path .

Modularization Details

```
1. Check Balance
```

It checks the user’s available balance and displays it on the screen.

```
2. Cash withdraw
```

It deducts the withdrawal amount from the user's bank account .

```
3. Show User Details
```

It displays all the details of the user which includes Account no. ,Name,Balance and Mobile no.

```
4. Update Mobile no.
```

Users can update their Mobile number .

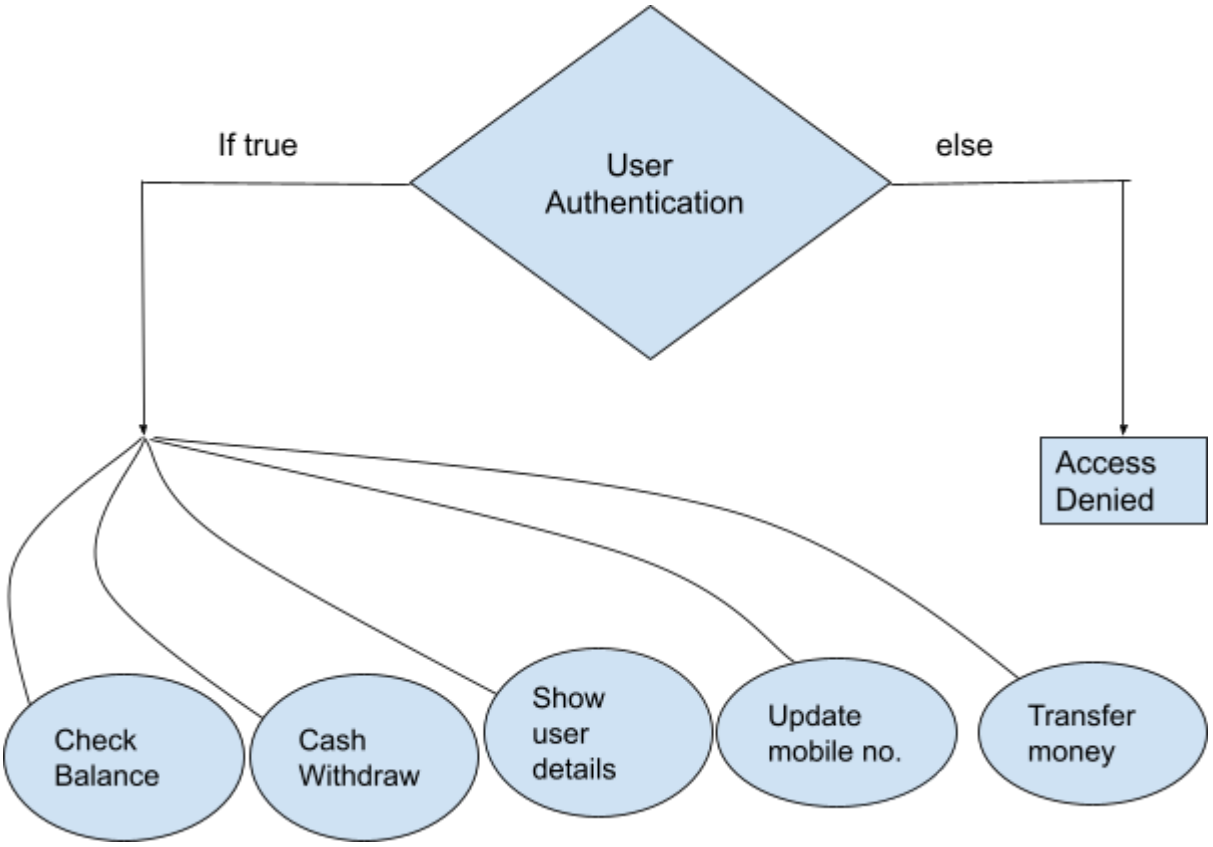
```
5. Transfer Money
```

We can transfer money from one user to another user with the help of this .

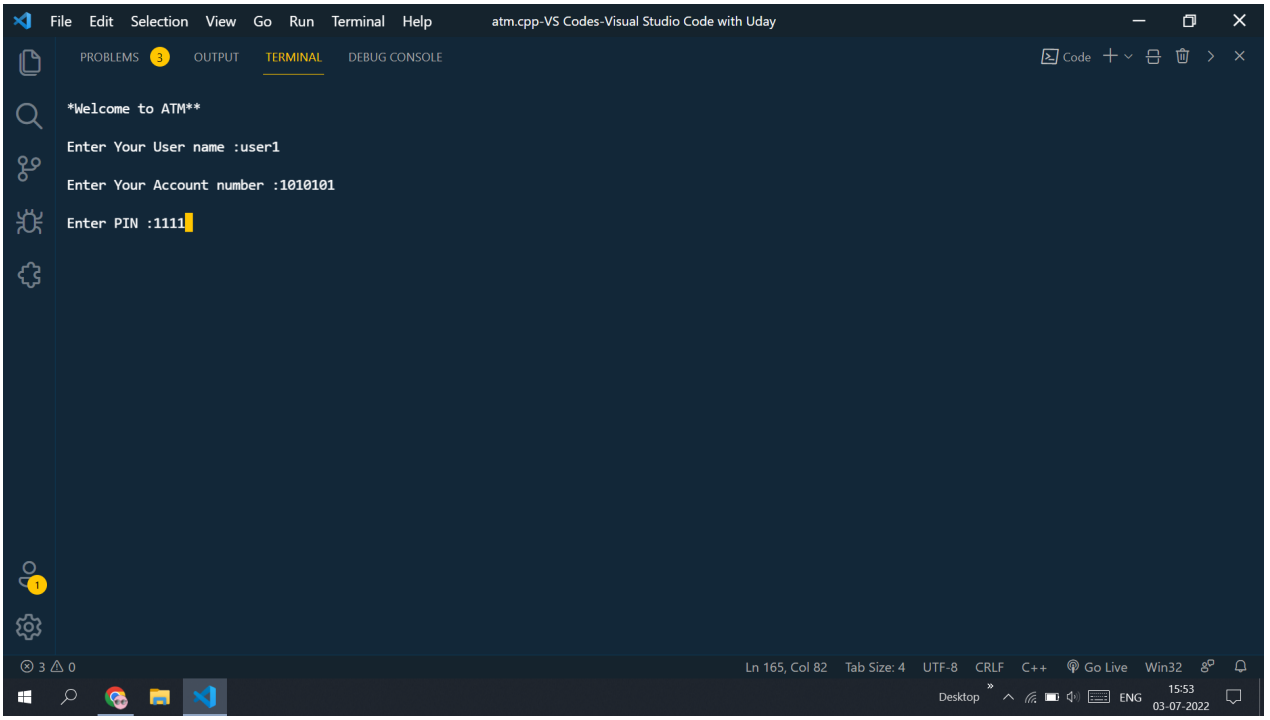
Hardware/Software requirements

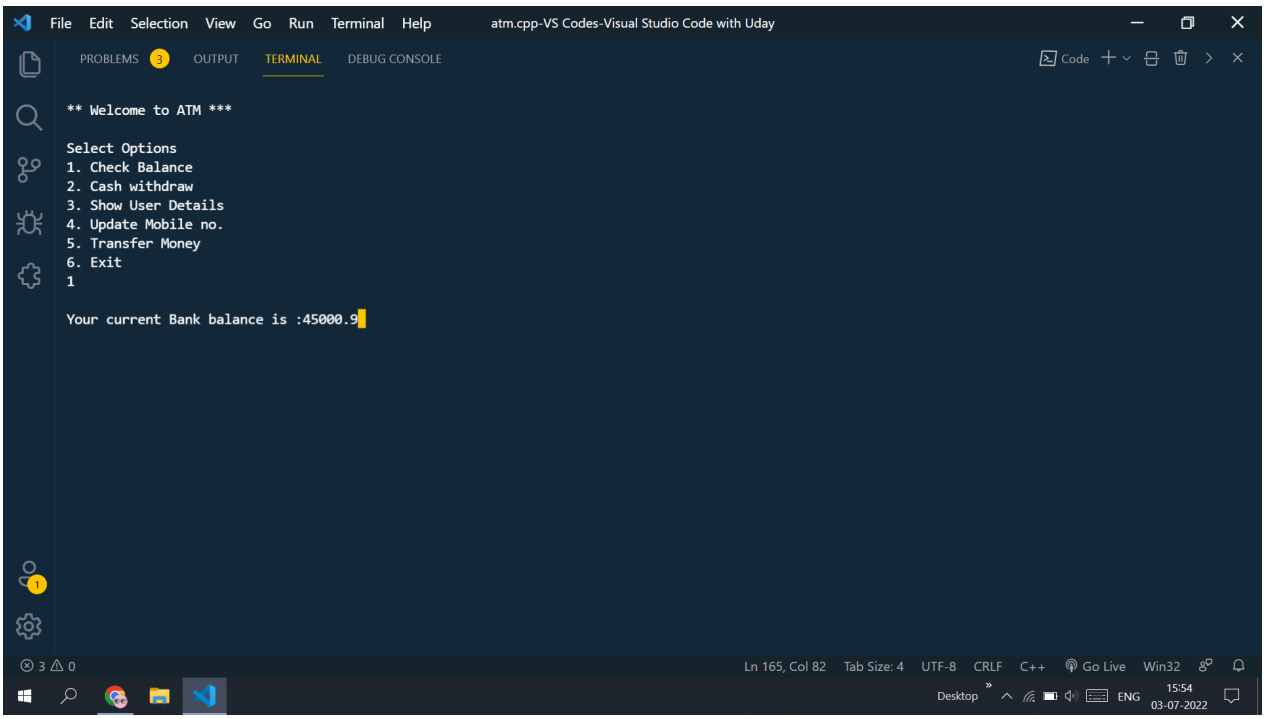
- *4 GB RAM*
- *1024 x 768 Minimum Screen Resolution*
- *VS Code or any other editor*

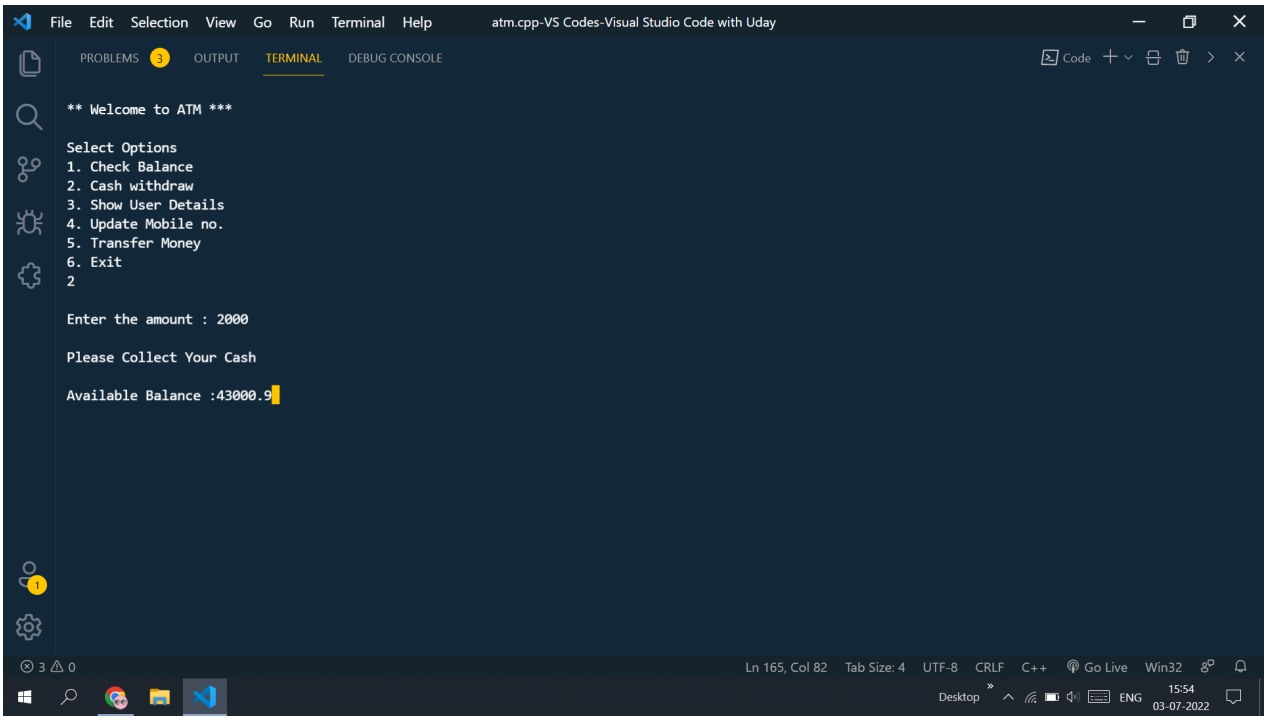
Project Workflow

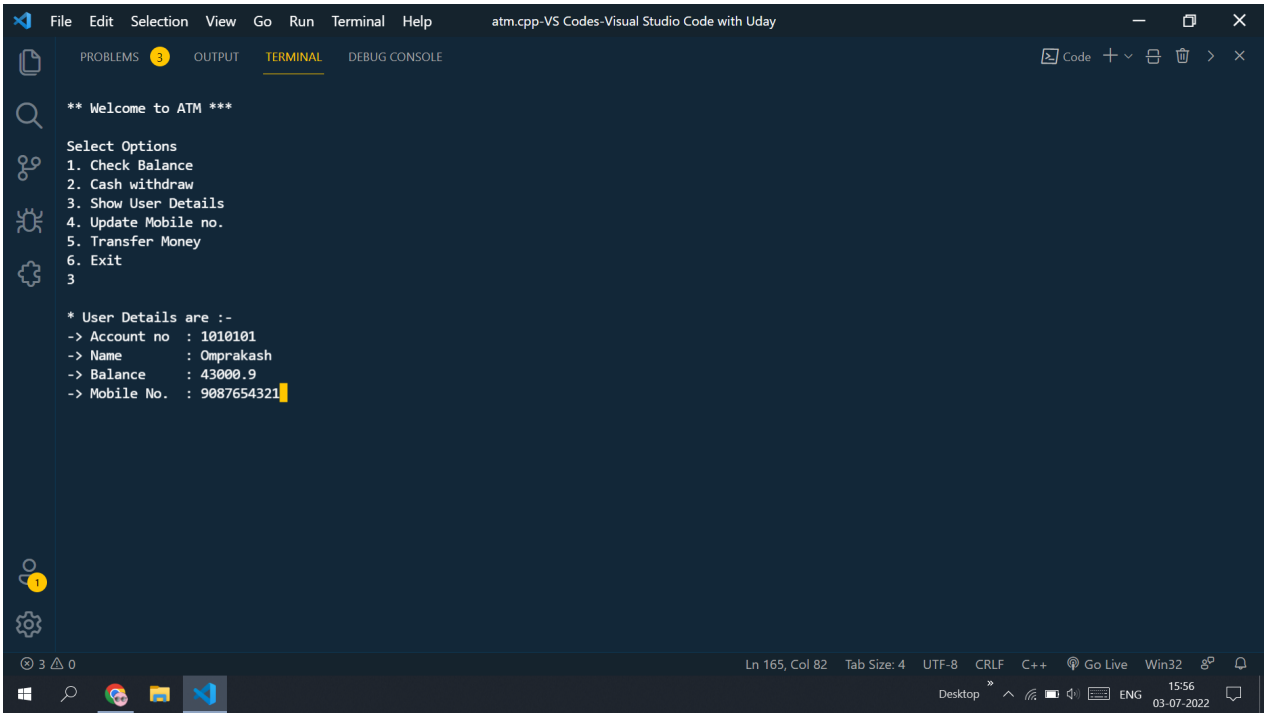


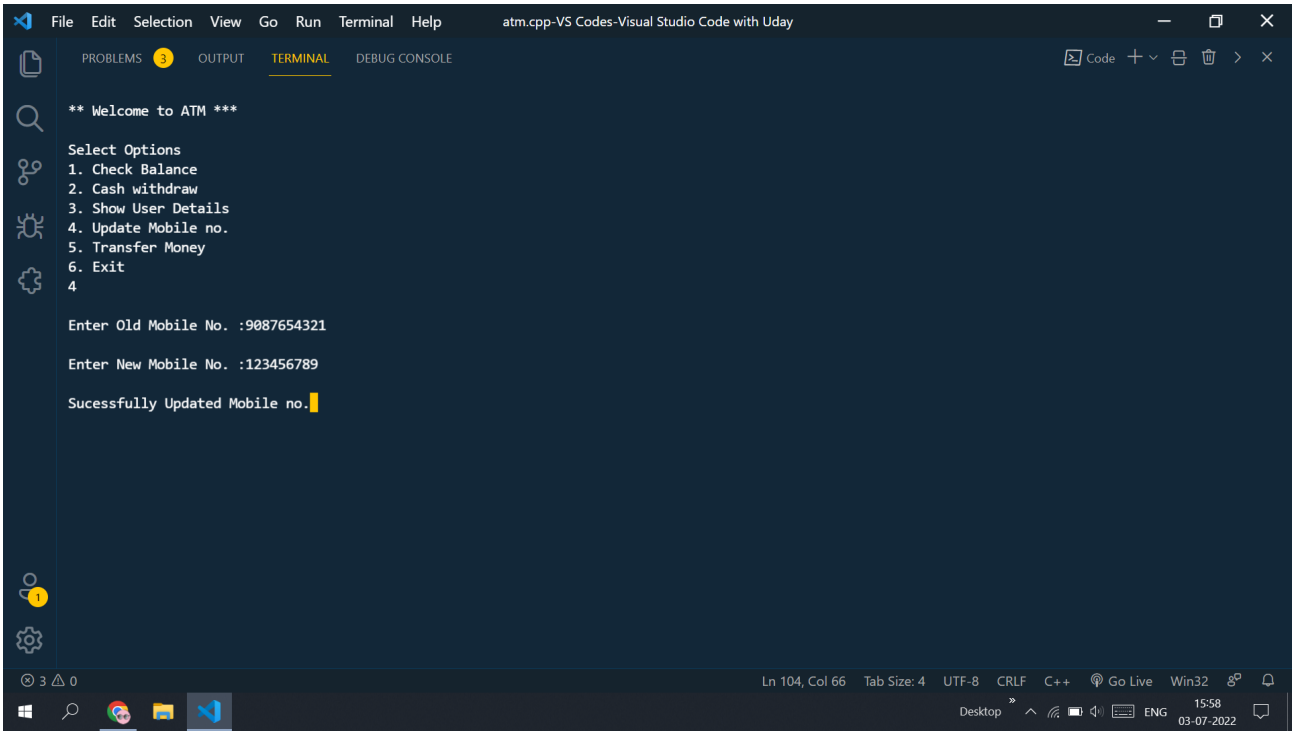
Screenshots

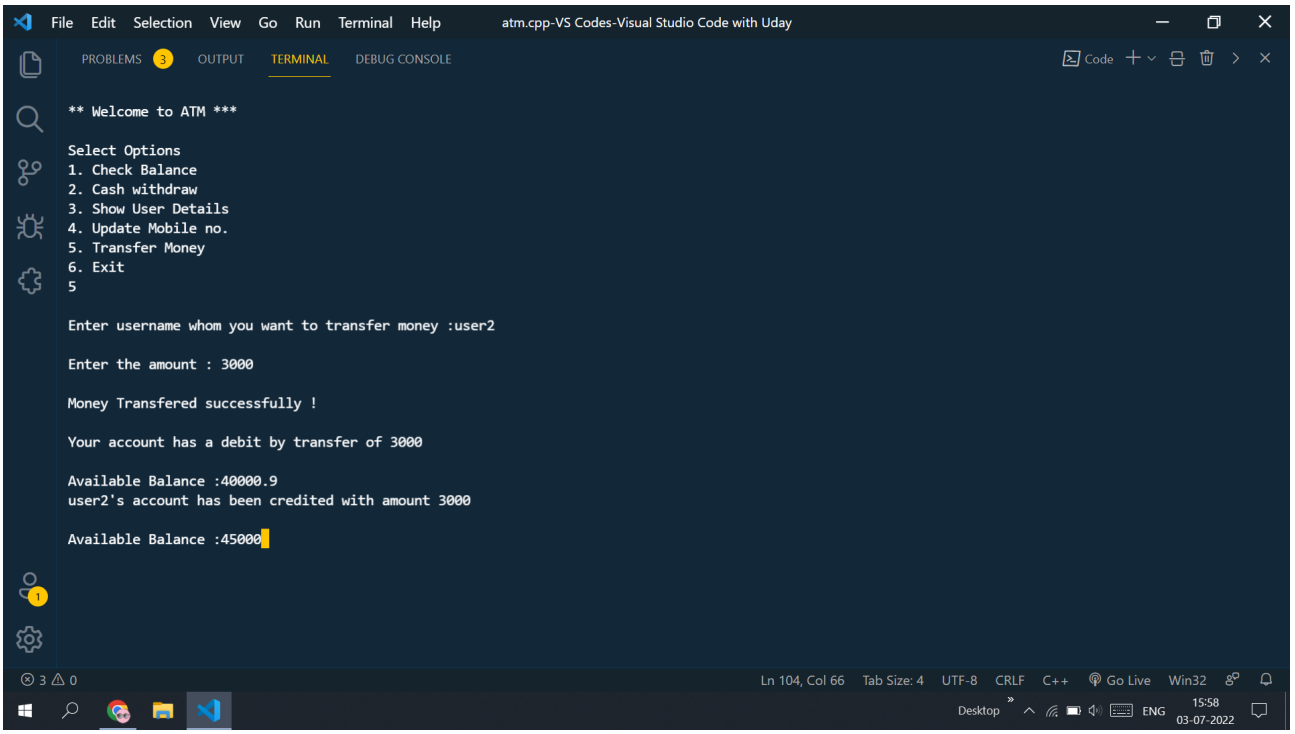



File Edit Selection View Go Run Terminal Help
atm.cpp-VS Codes-Visual Studio Code with Uday
PROBLEMS 3 OUTPUT TERMINAL DEBUG CONSOLE
Code
** Welcome to ATM ***
Select Options
1. Check Balance
2. Cash withdraw
3. Show User Details
4. Update Mobile no.
5. Transfer Money
6. Exit
1
Your current Bank balance is :45000.9
Ln 165, Col 82 Tab Size: 4 UTF-8 CRLF C++ Go Live Win32
Desktop ENG 15:54 03-07-2022


File Edit Selection View Go Run Terminal Help
atm.cpp-VS Codes-Visual Studio Code with Uday
PROBLEMS 3 OUTPUT TERMINAL DEBUG CONSOLE
Code
** Welcome to ATM ***
Select Options
1. Check Balance
2. Cash withdraw
3. Show User Details
4. Update Mobile no.
5. Transfer Money
6. Exit
2
Enter the amount : 2000
Please Collect Your Cash
Available Balance :43000.9
Ln 165, Col 82 Tab Size: 4 UTF-8 CRLF C++ Go Live Win32
Desktop ENG 15:54 03-07-2022


File Edit Selection View Go Run Terminal Help
atm.cpp-VS Codes-Visual Studio Code with Uday
PROBLEMS 3
OUTPUT
TERMINAL
DEBUG CONSOLE
Code
** Welcome to ATM ***
Select Options
1. Check Balance
2. Cash withdraw
3. Show User Details
4. Update Mobile no.
5. Transfer Money
6. Exit
3
* User Details are :-
-> Account no : 1010101
-> Name : Omprakash
-> Balance : 43000.9
-> Mobile No. : 9087654321
Ln 165, Col 82
Tab Size: 4
UTF-8
CRLF
C++
Go Live
Win32
Desktop
ENG
15:56
03-07-2022


File Edit Selection View Go Run Terminal Help
atm.cpp-VS Codes-Visual Studio Code with Uday
PROBLEMS 3 OUTPUT TERMINAL DEBUG CONSOLE
Code
** Welcome to ATM ***
Select Options
1. Check Balance
2. Cash withdraw
3. Show User Details
4. Update Mobile no.
5. Transfer Money
6. Exit
4
Enter Old Mobile No. :9087654321
Enter New Mobile No. :123456789
Sucessfully Updated Mobile no.
Ln 104, Col 66 Tab Size: 4 UTF-8 CRLF C++ Go Live Win32
Desktop ENG 15:58 03-07-2022


File Edit Selection View Go Run Terminal Help
atm.cpp-VS Codes-Visual Studio Code with Uday
PROBLEMS 3 OUTPUT TERMINAL DEBUG CONSOLE
Code
** Welcome to ATM ***
Select Options
1. Check Balance
2. Cash withdraw
3. Show User Details
4. Update Mobile no.
5. Transfer Money
6. Exit
5
Enter username whom you want to transfer money :user2
Enter the amount : 3000
Money Transfered successfully !
Your account has a debit by transfer of 3000
Available Balance :40000.9
user2's account has been credited with amount 3000
Available Balance :45000
Ln 104, Col 66 Tab Size: 4 UTF-8 CRLF C++ Go Live Win32
Desktop ENG 15:58 03-07-2022

Future Scope of improvements

At this point of time, the project is built with the help of basic concepts i.e switch cases , functions , if-else , Array , and class , which makes it a well designed menu driven program which consists of many functionalities . But in the future there are many areas which we can work on and improve . Like we can make the same project with the help of GUI where an user can interact on the interface similar to an ATM machine . We can include a real time Database where all the data like balance and usage details will be stored .

In future we would love to modify and take this basic project into the next level .

Code

```
#include<conio.h>
#include<bits/stdc++.h>

using namespace std;

class atm{
private:
    long int account_No;
    string name;
    int PIN;
    double balance;
    string mobile_No;
public:
    void setData(long int account_No_a, string name_a, int PIN_a,
double balance_a, string mobile_No_a){
        account_No = account_No_a;
        name = name_a;
        PIN = PIN_a;
        balance = balance_a;
        mobile_No = mobile_No_a;
    }

    long int getAccountNo(){
        return account_No;
    }

    string getName(){
        return name;
    }

    int getPIN(){
        return PIN;
    }

    double getBalance(){
        return balance;
    }
```

```
    string getMobileNo(){
        return mobile_No;
    }

    void setMobile(string mob_prev, string mob_new){
        if (mob_prev == mobile_No){
            mobile_No = mob_new;
            cout << endl << "Successfully Updated Mobile no.";
            _getch();               //getch is to hold the screen (
until user press any key )
        }

        else{
            cout << endl << "Incorrect !!! Old Mobile no";
            _getch();
        }
    }

    void cashWithDraw(int amount_a){
        if (amount_a > 0 && amount_a < balance){
            balance -= amount_a;
            cout << endl << "Please Collect Your Cash"<<endl;
            cout << endl << "Available Balance :" << balance;
            _getch();
        }
        else{
            cout << endl << "Invalid Input or Insufficient Balance";
            _getch();
        }
    }

    void moneyDebit(int amount_a){
        if (amount_a > 0 && amount_a < balance){
            balance -= amount_a;
            cout << endl << "Money Transfered successfully !"<<endl;
            cout << endl << "Your account has a debit by transfer of
"<<amount_a<<endl;
            cout << endl << "Available Balance :" << balance;
            _getch();
        }
        else{
            cout << endl << "Invalid Input or Insufficient Balance";
            _getch();
```

```
        }
    }

    void moneyCredit(string to ,int amount_a){
            balance += amount_a;
            cout << endl << to<<"'s account has been credited with
amount "<<amount_a<<endl;
            cout << endl << "Available Balance :" << balance;
            _getch();
    }
};

////////////////////////////////////////////////////////////////////////////
//////////////////////
int main(){
    vector<atm> v;
    int choice = 0, enterPIN,index,x,y;
    string username,whom;
    char c,d;
    long int enterAccountNo;
    system("cls");

    atm user1;
    user1.setData(1010101, "Omprakash", 1111, 45000.90, "9087654321");
    v.push_back(user1);
    atm user2;
    user2.setData(2020202, "Uday", 2222, 42000.00, "6370203478");
    v.push_back(user2);
    atm user3;
    user3.setData(3030303, "Aditya", 3333, 52000.75, "9885673421");
    v.push_back(user3);
    atm user4;
    user4.setData(4040404, "Simran", 4444, 50000.50, "8867046737");
    v.push_back(user4);

    do{
        system("cls");
        cout << endl << "*Welcome to ATM**" <<endl;
        cout << endl << "Enter Your User name :";
        cin >> username; // username to be entered as i.e user1
,user2,user3,user4
        c=username[4];
        x=c - 48 ;
```

```
        cout << endl << "Enter Your Account number :";
        cin >> enterAccountNo;
        cout << endl << "Enter PIN :";
        cin >> enterPIN;

        if ((enterAccountNo == v[x-1].getAccountNo()) && (enterPIN ==
v[x-1].getPIN())){
            do{
                int amount = 0;
                string oldMobileNo, newMobileNo;
                system("cls");
                cout << endl << "** Welcome to ATM ***" << endl;
                cout << endl << "Select Options ";
                cout << endl << "1. Check Balance";
                cout << endl << "2. Cash withdraw";
                cout << endl << "3. Show User Details";
                cout << endl << "4. Update Mobile no.";
                cout << endl << "5. Transfer Money";
                cout << endl << "6. Exit" << endl;
                cin >> choice;
                switch (choice){
                case 1:
                    cout << endl << "Your current Bank balance is :" <<
v[x-1].getBalance();
                    _getch();
                    break;
                case 2:
                    cout << endl << "Enter the amount : ";
                    cin >> amount;
                    v[x-1].cashWithDraw(amount);
                    break;
                case 3:
                    cout << endl << "* User Details are :- ";
                    cout << endl << "-> Account no  : " <<
v[x-1].getAccountNo();
                    cout << endl << "-> Name        : " <<
v[x-1].getName();
                    cout << endl << "-> Balance     : " <<
v[x-1].getBalance();
                    cout << endl << "-> Mobile No.  : " <<
v[x-1].getMobileNo();
                    _getch();
                    break;
```

```
                case 4:
                    cout << endl << "Enter Old Mobile No. :";
                    cin >> oldMobileNo;
                    cout << endl << "Enter New Mobile No. :";
                    cin >> newMobileNo;
                    v[x-1].setMobile(oldMobileNo, newMobileNo);
                    break;
                case 5:
                    cout<<endl<<"Enter username whom you want to
transfer money :";
                    cin>>whom;    // username to be entered as i.e user1
,user2,user3,user4
                    d=whom[4];
                    y=d - 48 ;
                    cout<<endl<<"Enter the amount : ";
                    cin >> amount;
                    v[x-1].moneyDebit(amount);
                    v[y-1].moneyCredit(whom,amount);
                    break;
                case 6:
                    exit(0);
                default:
                    cout << endl << "Enter Valid Data !!!";
                }

            } while (1);
        }
        else{
            cout << endl << "User Details are Invalid !!! ";
            _getch();
        }
    } while (1);
    return 0;
}
```

THANK YOU