

ATM SIMULATOR

By

DEV PATEL (19IT092)

POOJAN SHAH (19IT133)



INTRODUCTION

- In this project we have tried to provide the experience of an ATM by using the concepts of OOPS(object oriented programming) in C++ programming language.
- Here we have used the CodeBlocks IDE as the coding platform.

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CONCEPTS USED

- Class and Object
- Conditional Statements(if(), else and else if())
- Manipulators
- Loops (while() and for())
- Switch
- Recursion of function
- File Handling

SPECIAL FEATURES

- Set the buffer time between the processes to have realistic experience by using the functions of header file "time.h".
- Used a special character " \xB2 " for formatting of the output.
- Created a function which opens the disk drive when cash is to be withdrawn or deposited.

SOURCE CODE

```
#include<time.h>
#include<stdlib.h>
#include<fstream>
#include<iomanip>
#include<windows.h>

using namespace std;

class Atm
{
    float main_balance = 100000;           //private data member which stores balance
    int pin;                               //private data member which stores pin number
public:
    void getpin()                          //member function to get the pin when program starts
    {
        cout<<" \t\t\t \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2 Welcome to ATM SIMULATOR \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2" <<endl;
        cout<<"\n \t\t\t \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2 Account number:1007533192\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2" <<endl;

        cout<<"\n \t\t\t \xB2\xB2\xB2\xB2\xB2 Enter pin(Personal Identification Number) 4 digits only \xB2\xB2\xB2\xB2\xB2";
        cin>>pin;
        while(pin<999 || pin>9999)         //this loop checks whether the pin number is of 4 digits or not
        {
            cout<<"\n \t\t\t Invalid pin. Please try again";
            cout<<"\n \t\t\t Enter your pin";
            cin>>pin;
        }
    }
}
```



```

        system("cls"); //clears the output screen
    }
    void showMenu(); //declaration of all member function and all are defined outside the class
    void choice();
    void withdrawal();
    void deposit();
    void checkbalance();
    void fund_transfer();
    void statement();
    bool checkpin();
};

//as class is defined under the namespace stimulator so there is no need of using the scope resolution operator
//while calling the member functions
//but scope resolution operator is required while defining the member functions

void cashoutlet() //this function opens the cd drive
{
    mciSendString("set cdaudio door open",0,NULL,NULL);
}

void waiting(unsigned int mseconds) //this function sets the desired buffer time in between the processes
{
    clock_t goal = mseconds + clock();
    while (goal > clock());
}

int totalcount=4; //this variable is used to check that if wrong pin is entered
                  //more than 5 five times than program will terminate

bool Atm::checkpin() //this function checks whether entered pin is correct or not
{
    int pin1;
    x:cout<<"\n\n\t\t\t Enter your pin";
    cin>>pin1;

    if(totalcount==0)
        exit(0);

    else
    {
        if(pin1 == pin)
            return true;
    }
}

```



```

else
{
    cout<<"\n\n\t\t\t Incorrect Pin !";
    totalcount--;
    checkpin();
}
}

void Atm::showMenu()           //this function prints the menu when called and calls the choice function to select one of the given function
{
    cout << endl << " \t\t\t \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2 MAIN MENU TRANSACTION \xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2\xB2";
    cout << "\n\n\t\t\t [ 1 ] Withdrawal" << endl;
    cout << "\t\t\t [ 2 ] Deposit" << endl;
    cout << "\t\t\t [ 3 ] Check Balance" << endl;
    cout << "\t\t\t [ 4 ] Funds Transfer" << endl;
    cout << "\t\t\t [ 5 ] Statement" << endl;
    cout << "\t\t\t [ 6 ] Exit ATM" << endl;
    cout << "\t\t\t _____" << endl;
    cout << "\t\t\t Enter your choice: ";
    choice();
}

void Atm::choice()
{
    int c;           //c is used to select the desired option by inputting the number of desired option
    x: cin>>c;
    if(c>6 || c<1)   //this if statement checks whether the input is within the range of 1-6
    {
        cout<<endl<<"Please enter a valid option";
        goto x;
    }
    switch(c)        //switch statement is used to go to the desired option's function
    {
    case 1:
        withdrawal(); //function having the logic/code of withdrawal option

    case 2:
        deposit();    //function having the logic/code of deposit option

    case 3:
        checkbalance(); //function having the logic/code of check balance option

    case 4:
        fund_transfer(); //function having the logic/code of fund transfer option

    case 5:
        statement();   //function having the logic/code of statement option

    case 6:
        exit(0);
    }
}

```


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Scanned with CamScanner



```
int main()
```

{

Atm a;

```
a.getpin();
```

```
a.showMenu();
```





USE OF THE FUNCTIONS

Function	Use
getpin()	It enters the pin when program starts and also checks whether it is of 4 digits or not
system("cls")#	This function is defined in "stdlib.h" header file. It is used to clear the screen.
showmenu()	This function is used to display the main menu of the program.
choice()	This function is used to select the desired option from main menu using switch
withdrawal()	This function contains the code of withdrawal option which is used to withdraw money from given account.

Function	Use
deposit()	This function contains the code of deposit option which is used to deposit money in the given account
checkbalance()	This function contains the code of check balance option which is used to check balance in the given account.
fund_transfer()	This function contains the code of fund transfer option which is used to transfer money from given account to the entered account.
statement()	This function is used to print the statement of given account i.e. it prints the transaction history of the account
checkpin()	Verifies that entered pin is correct or not

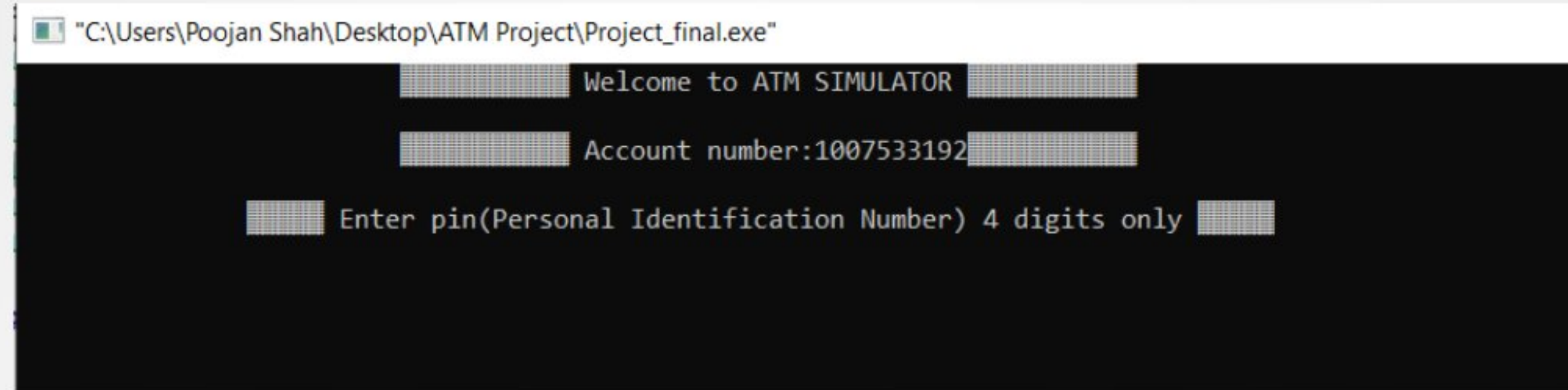
Function	Use
cashoutlet() *	This function opens the CD drive to withdraw or deposit the cash
waiting() *	This function sets the desired buffer time to have a realistic experience of the ATM simulator
fputdata() *	This function stores the required data of transaction in the file using file handling.
_strdate() # _strtime() #	This function returns current data and time of the system and store them in the variable which is passed as argument

*** - Normal Functions # - Builtin functions**
Other functions are member functions of the class

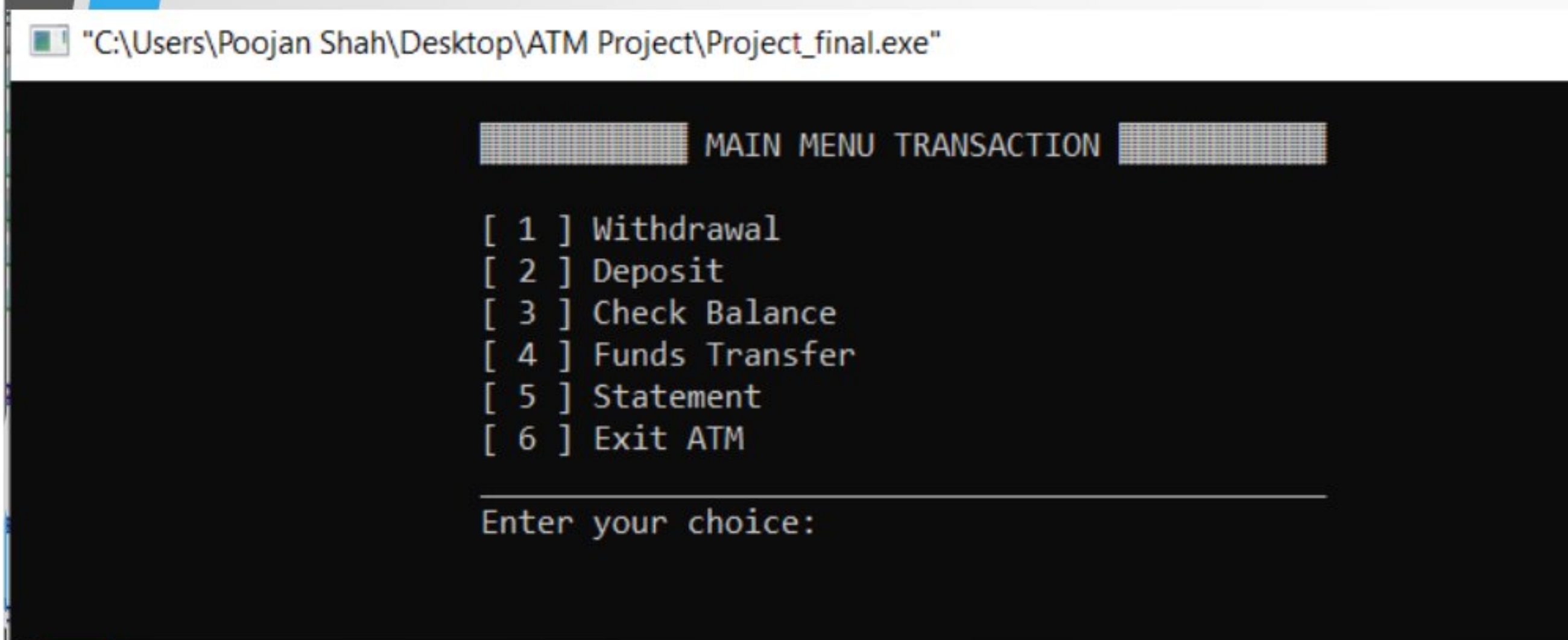


Snapshots of program

Snapshots of program



Welcome Screen



Main Menu Display

WITHDRAWAL TRANSACTION

Enter your pin1254

Incorrect Pin !

Enter your pin1221

WITHDRAWAL TRANSACTION

AVAILABLE BALANCE :103232

Enter the amount : 1000000

Cannot deduct more than availabe balance
Please enter the amount again.

Enter the amount : 12000

"C:\Users\Poojan Shah\Desktop\ATM Project\Project_final.exe"

RECEIPT

ATM TRANSACTION RECORD

DATE:	03/31/20
TIME:	16:16:09
TRANSACTION:	SAVINGS WITHDRAWAL
AMOUNT:	21225.00
CURRENT BAL:	54006

Output of withdrawal option

DEPOSIT TRANSACTION

Enter your pin100

Incorrect Pin !

Enter your pin1221

DEPOSIT TRANSACTION

Your main balance is:100000

Enter the deposit amount :

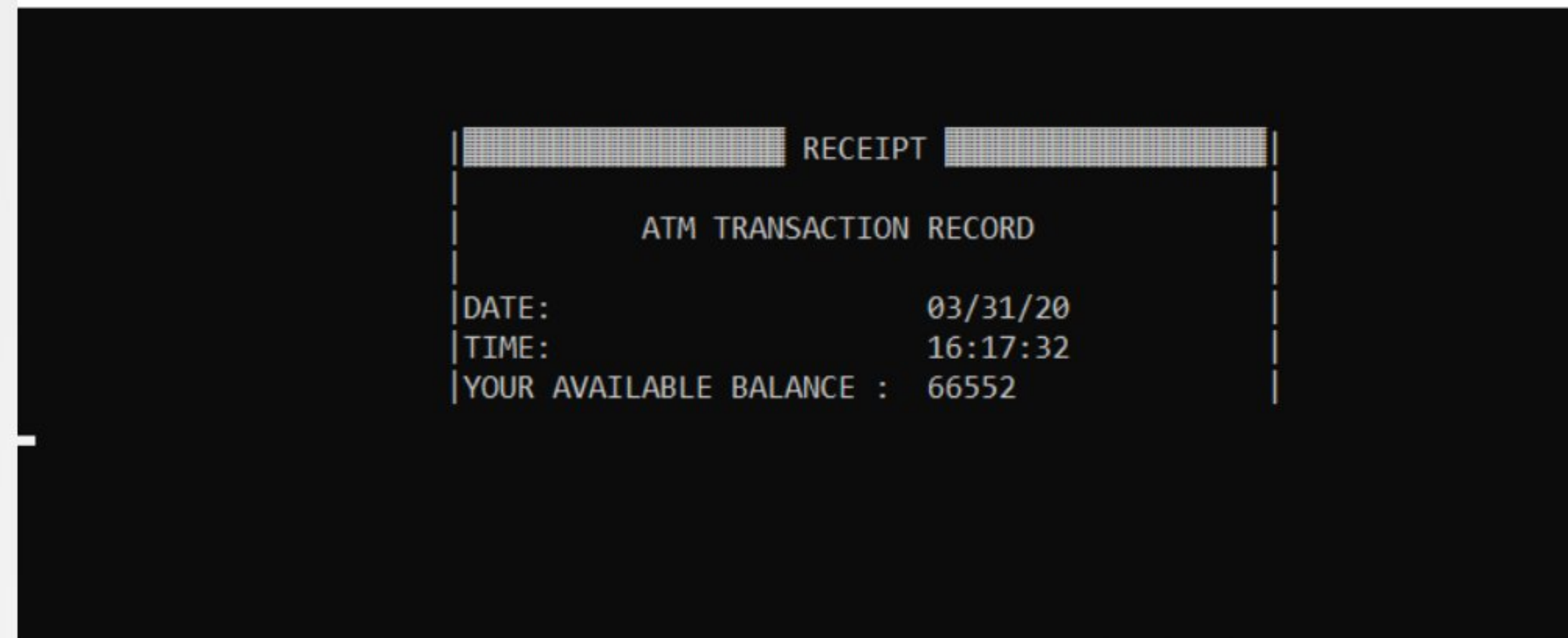
"C:\Users\Poojan Shah\Desktop\ATM Project\Project_final.exe"

RECEIPT

ATM TRANSACTION RECORD

DATE:	03/31/20
TIME:	16:17:01
TRANSACTION:	DEPOSIT TRANSACTION
AMOUNT:	12546.00
CURRENT BAL:	66552

Output of Deposit option



Output of Checkbalance option

19:50:00	03/28/20	deposit	2222	100000
19:50:48	03/28/20	fund transfer	12343	87657
19:52:19	03/28/20	fund transfer	2234	97766
19:58:10	03/28/20	withdrawal	2342	97658
20:00:42	03/28/20	withdrawal	2222	97778
20:01:10	03/28/20	deposit	3421	101199
20:04:09	03/28/20	fund transfer	2233	98966
20:25:46	03/28/20	withdrawal	25000	75000
20:26:10	03/28/20	deposit	12587	87587
20:26:43	03/28/20	fund transfer	12000	75587
20:27:49	03/28/20	withdrawal	12000	88000
20:35:53	03/28/20	withdrawal	1212	98788
20:36:16	03/28/20	deposit	21458	120246
16:15:18	03/31/20	withdrawal	12546	87454
16:15:41	03/31/20	withdrawal	12223	75231
16:16:09	03/31/20	withdrawal	21225	54006
16:17:01	03/31/20	deposit	12546	66552
16:18:33	03/31/20	fund transfer	1250	65302

Output of Statement option

FUND TRANSFER TRANSACTION

Enter your pin1222

Incorrect Pin !

Enter your pin1221

FUND TRANSFER TRANSACTION

YOUR BALANCE : 100000

Enter Account Number (for Transfer) : 122212

Invalid account number. Please try again

Enter your account number121222112121

Invalid account number. Please try again

Enter your account number1222121112

Enter Amount To Transfer (Limit Upto 20,000) : 2500000

Invalid Amount!

Please try again!

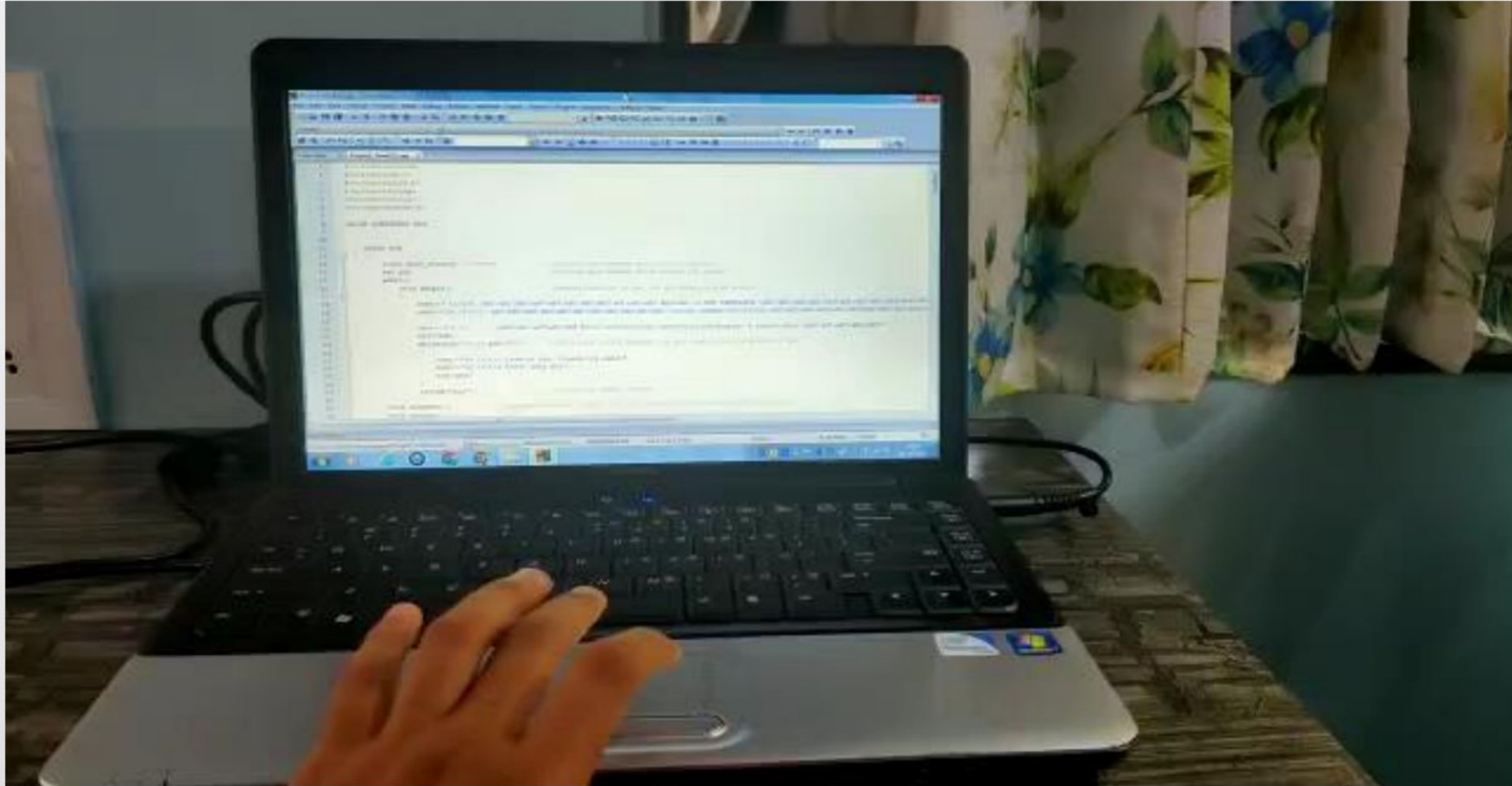
Please enter Amount To Transfer : 12212

RECEIPT

ATM TRANSACTION RECORD

DATE:	04/01/20
TIME:	16:41:19
TRANSACTION:	FUND TRANSFER
AMOUNT:	12500.00
CURRENT BAL:	75288

Output of Fund transfer option



(Cashoutlet function) When we select withdraw or deposit option
So cd drive comes out as if cash is dispensed or to be deposited



Thank you
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