ATM SIMULATOR

Ву

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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.



- Concepts Used
- Special Features
- Source Code
- Use of the functions
- Snapshots of the Program

CONCEPTS USER

- 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- Created a function which opens the disk drive when cash is to be withdrawn or deposited.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 CORE

```
#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
                            //private data member which stores pin number
    int pin;
    public:
       void getpin()
                            //member function to get the pin when program starts
         cout<<"\n \t
         cin>>pin;
                            //this loop checks whether the pin number is of 4 digits or not
         while(pin<999 || pin>9999)
           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
                              //declaration of all member function and all are defined outside the class
    void showMenu();
    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 pinl;
       x:cout<<"\n\n\t\t\t Enter your pin";
       cin>>pinl;
       if(totalcount==0)
           exit(0);
       else
           if (pinl == 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 << "\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;</pre>
   cout << "\t\t\t [ 5 ] Statement" << endl;</pre>
   cout << "\t\t\t [ 6 ] Exit ATM" << endl;
   cout << "\t\t\t
                                                  "<<endl;
   cout << "\t\t\t Enter your choice: ";</pre>
   choice();
 void Atm::choice()
                        //c is used to select the desired option by inputting the number of desired option
     int c;
     x: cin>>c;
                    //this if statement checks whether the input is within the range of 1-6
     if(c>6 || c<1)
         cout<<endl<<"Please enter a valid option";
         goto x;
                      //switch statement is used to go to the desired option's function
     switch(c)
     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);
```

```
void Atm::statement()
              //prints all the previous transaction of the account holder
  char ch[500]; int i=totalcount;
  system("cls");
  cout << "\n\n\t\t\t\t\t PRINTING RECEIPT . . .\n";</pre>
  waiting (5000);
  system("cls");
  cout<<setw(15)<<"Time"<<setw(15)<<"Balance"<<endl;
  ifstream f:
  f.open("ministatement.txt",ios::in);
                            //file opened in read mode
  while(!f.eof())
    f.getline(ch,500);
                            //reads the function till newline character is found
     cout<<ch<<endl;
                            //file closed
  f.close();
  showMenu();
void fputdata(char date[], char time[], float main balance, float amount, string type) //function is used to store the data in the file
   fstream f:
   f.open("ministatement.txt", ios::app);
                                 //file opened in append mode
   f<<setw(15)<<time<<setw(15)<<main balance<<"\n";
                                                                            //stores the data in a formatted
                                                                             //manner using manipulators
   f.close();
   totalcount++;
void Atm::withdrawal()
                     //function used to withdraw money from the account
   system("cls");
   if (checkpin())
                     //to enter the pin and also verify it
         float amount2;
                       //for storing the amount to be withdrawn
         system("cls");
         cout << "\n\n\t\t\t AVAILABLE BALANCE : "<< main balance << endl;
         x:cout << "\t\t\t Enter the amount : ";
         cin >> amount2;
         if (amount2>main balance) //if entered amount is more than available balance then this conditions becomes true
            cout << endl << "Cannot deduct more than availabe balance";
            cout << "\nPlease enter the amount again. \n";
            goto x;
```

```
//if entered amount is legit than flow goes ahead
       else
         main balance-main balance-amount2; //deducts the entered amount from the main balance
         cout << "\t\t Your remaining savings balance: "<<main balance<<endl;
          system("cls");
          system("cls");
         cashoutlet();
                              //sets the buffer time to 5000 milli second
          waiting (5000);
          system("cls");
          char date[9];
          char time[9];
                               //stores current date of the system
          strdate (date);
                               //stores current time of the system
          strtime (time);
          cout << "\n\n\t\t\t\t\t PRINTING RECEIPT . . .\n";
                               //sets the buffer time to 3000 milli second
          waiting(3000);
         system("cls");
          //code below prints the receipt of transaction done
          cout << "\n\t\t\t|\t\t\t\t
             << "\n\t\t|\t ATM TRANSACTION RECORD\t</pre>
             << "\n\t\t\t|\t\t\t\t\t
               << "\n\t\t\t|DATE:\t\t\t "<<date<<"\t
               << "\n\t\t\TIME:\t\t\ "<<time<<"\t
           cout << "\n\t\t\t|TRANSACTION:\t\t
                                        SAVINGS WITHDRAWAL | "
               << "\n\t\t\t|AMOUNT:\t\t "<<amount2<<".00\t
               << "\n\t\t\t|CURRENT BAL:\t\t
                                        "<<main balance<<"
                                                               \n";
           fputdata(date, time, main balance, amount2, "withdrawal"); //sends the current data of transaction to save it into the file
           waiting(3000);
                           //sets the buffer time to 5000 milli second
           system("cls");
            showMenu();
                           //shows the main menu for further transaction
void Atm::deposit() //function is used for depositing the money in the account
   system("cls");
   if(checkpin())
     float depamountl;
                     //stores the amount to be deposited
     system("cls");
     cout<<endl<<"\t\t\t Your main balance is: "<<main balance;
```

```
cout << "\n\n\t\t\t Enter the deposit amount :";</pre>
      cin >> depamountl;
     main balance=main balance+depamountl;
                                     //adds the deposited amount to the main balance
     cout <<endl<< "\t\t Your New Balance: "<<main balance<<endl;
      system("cls");
     //function to take cash from the user and deposits in the account
      cashoutlet();
     waiting(5000);
     system("cls");
     char date[9];
      char time[9];
     strdate (date);
     _strtime(time);
     cout << "\n\n\t\t\t\t\t PRINTING RECEIPT . . .\n";
     waiting (3000);
     system("cls");
     //code below prints the receipt of transaction done
      cout << "\n\t\t\t|\t\t\t\t
         << "\n\t\t|\t ATM TRANSACTION RECORD\t</pre>
         << "\n\t\t\t|\t\t\t\t\t
         << "\n\t\t\t|DATE:\t\t\t "<<date<<"\t
            << "\n\t\t\t|TIME:\t\t\t
                                      "<<time<<"\t
       cout << "\n\t\t\t|TRANSACTION:\t</pre>
                                                DEPOSIT TRANSACTION | "
            << "\n\t\t\t|AMOUNT:\t\t "<<depamountl<<".00\t
            << "\n\t\t\t|CURRENT BAL:\t\t
                                          "<<main balance<<"\t
                                                                    |\n";
       fputdata(date, time, main balance, depamountl, "deposit"); //sends the current data of transaction to save it into the file
       waiting (3000);
       system("cls");
       showMenu();
                             //function is used to check the balance of the account
void Atm::checkbalance()
       system("cls");
       char date[9];
       char time[9];
       _strdate(date);
       strtime (time);
       cout << "\n\n\t\t\t\t PRINTING RECEIPT . . .\n";
       waiting(3000);
       system("cls");
```

```
//code below prints the available balance
     cout << "\n\t\t\t|\t\t\t\t
        << "\n\t\t|\t ATM TRANSACTION RECORD\t</pre>
        << "\n\t\t\t|\t\t\t\t
        << "\n\t\t\t|DATE:\t\t\ "<<date<<"\t
        << "\n\t\t\t|TIME:\t\t\ "<<time<<"\t
     cout << "\n\t\t|YOUR AVAILABLE BALANCE : "<<main balance<<" \t
                                                 |\n";
     waiting(3000);
     system("cls");
     showMenu();
void Atm:: fund transfer() //function is used to transfer the money from your account to other account
   system("cls");
   if(checkpin())
     long long int accntNo, amt; //to store the account number and amount to be transferred
     system("cls");
     cout << "\n\n\t\t\t YOUR BALANCE : "<<main balance;
   cout << "\n\t\t\t Enter Account Number (for Transfer) : ";
   cin >> accntNo;
   while (accntNo<9999999999999999999999999999)
                                                //checks that entered account number is of 10 digits or not
       cout << "\t\t\tInvalid account number. Please try again";
       cout<<"\n\t\tEnter your account number";
       cin>>accntNo;
   cout << "\n\t\t\t Enter Amount To Transfer (Limit Upto 20,000) : ";
   cin >> amt;
   while (amt > 20000)
                           //checks whether the entered amount is within the preset limit
       cout << "\n\n\t\t\t Invalid Amount!\n\t\t Please try again!";
       cout << "\n\t\t\t Please enter Amount To Transfer : ";
       cin >> amt;
   waiting(1000);
   cout << "\n\n\t\t\t The amount of "<<amt<<" has been transfered to : "<<accntNo<<endl;
   waiting (3000);
   system("cls");
   char date[9];
   char time[9];
    strdate (date);
```

```
cout << "\n\n\t\t\t\t\t PRINTING RECEIPT . . .\n";</pre>
waiting (3000);
system("cls");
//code below prints the receipt of transaction
cout << "\n\t\t\t|\t\t\t\t
   << "\n\t\t|\t ATM TRANSACTION RECORD\t</pre>
   << "\n\t\t\t|\t\t\t\t
   << "\n\t\t|DATE:\t\t\ "<<date<<"\t
   << "\n\t\t|TIME:\t\t\ "<<time<<"\t
cout << "\n\t\t\t|TRANSACTION:\t
                                 FUND TRANSFER
   << "\n\t\t\t|AMOUNT:\t\t "<<amt<<".00\t
main_balance=main_balance-amt; // deducts the entered amount from main balance of user
cout<< "\n\t\t|CURRENT BAL:\t\t "<<main balance<<"\t
                                                |\n\n";
fputdata(date, time, main_balance, amt, "fund transfer");
                                            //sends the current data of transaction to save it into the file
waiting (3000);
system("cls");
showMenu();
                      //driver function of the program
int main()
                        //object of Atm class is created
    Atm a;
    a.getpin();
    a.showMenu();
```

USE OF THE FUNCTIONS

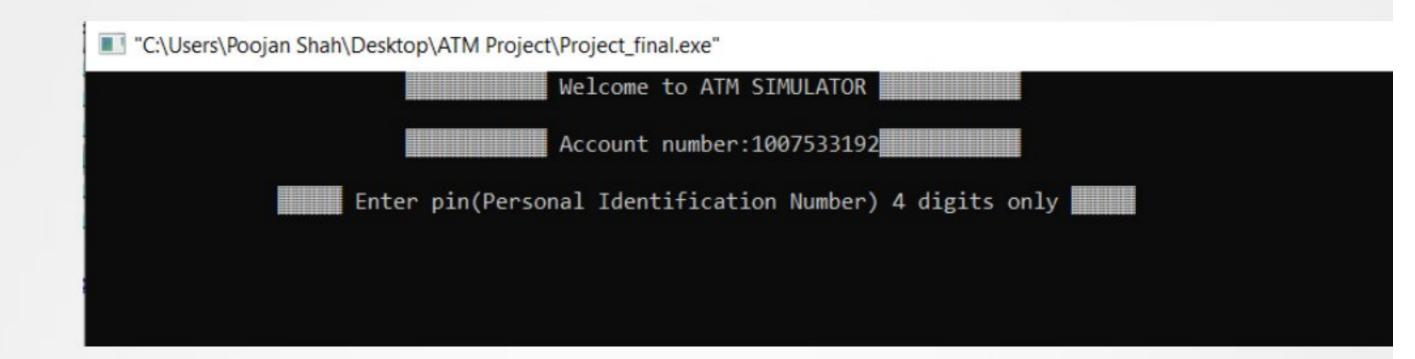
Function	Use
getpin()	It enters the pin when program starts and also checks whether it is of 4 digits or not
system("cls")#	This function is defined in "stdlib.h" header file. It is used to clear the screen.
showmenu()	This fuction is used to display the main menu of the program.
choice()	This function 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

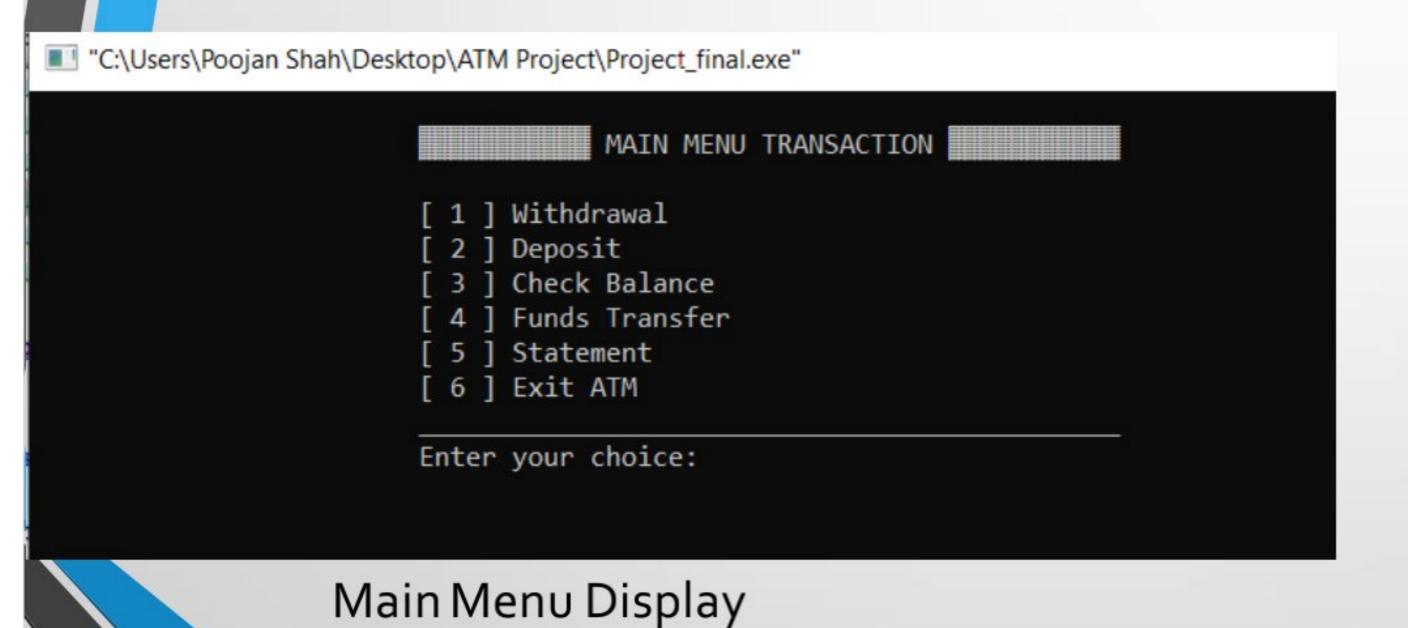
Function	Use
cashoutlet() *	This function opens the CD drive to withdraw or deposit the cash
waiting() *	This function sets the desired buffer time to have a realistic experience of the ATM simulator
fputdata() *	This function stores the required data of transaction in the file using file handling.
_strdate()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

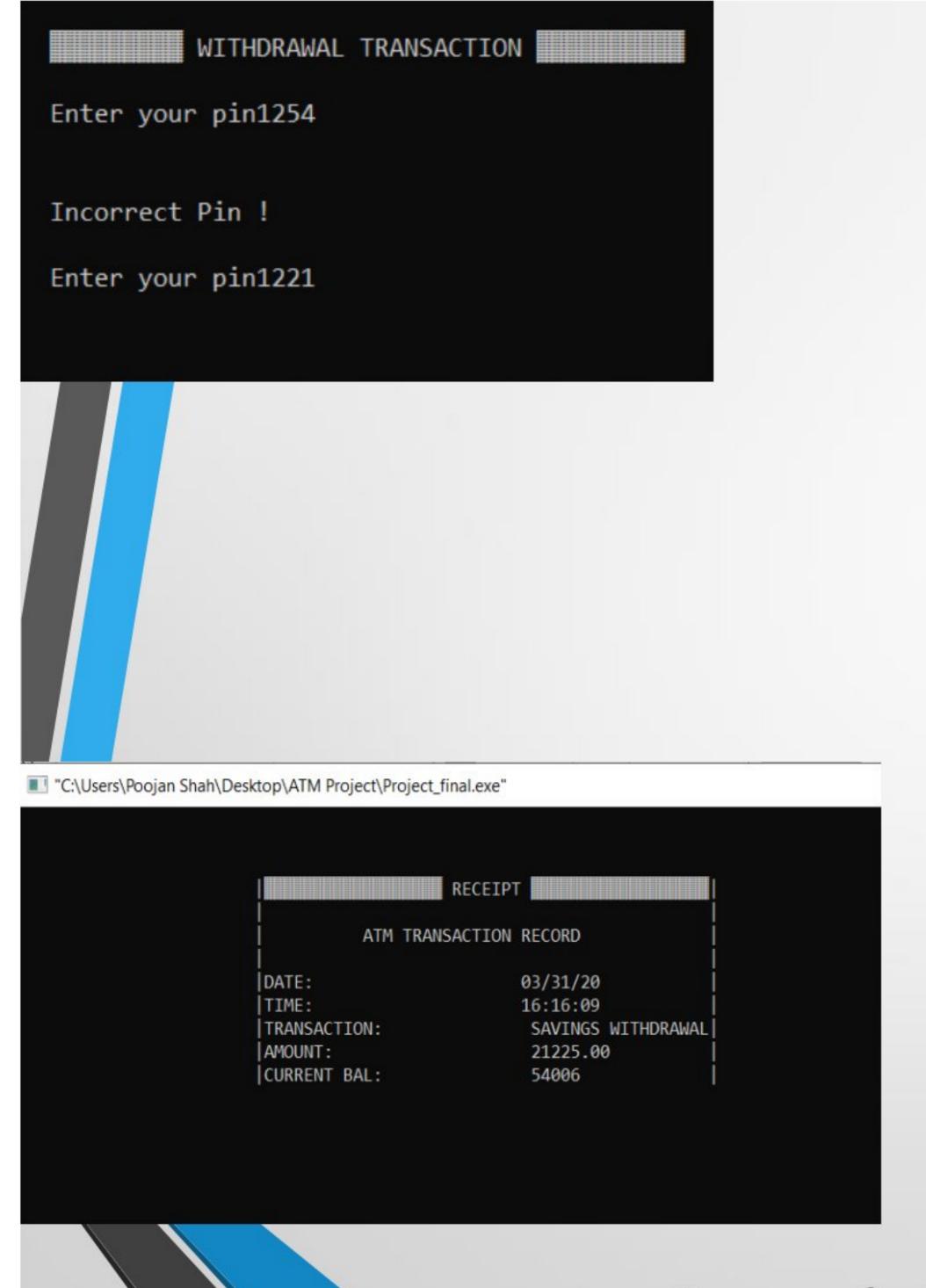
* - Normal Functions # - Builtin functions
Other functions are member functions of the class





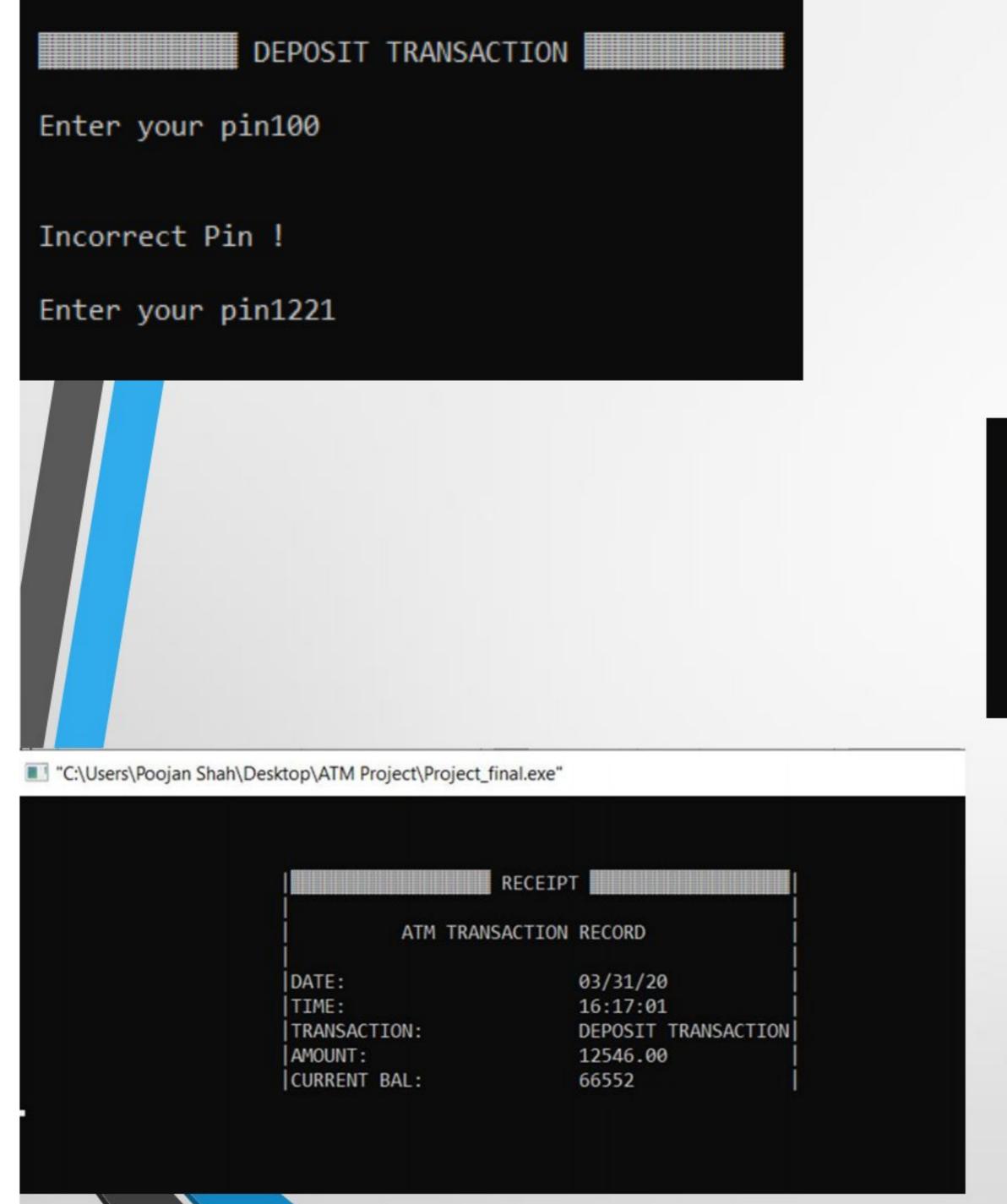
Welcome Screen





AVAILABLE BALANCE :103232
Enter the amount : 1000000

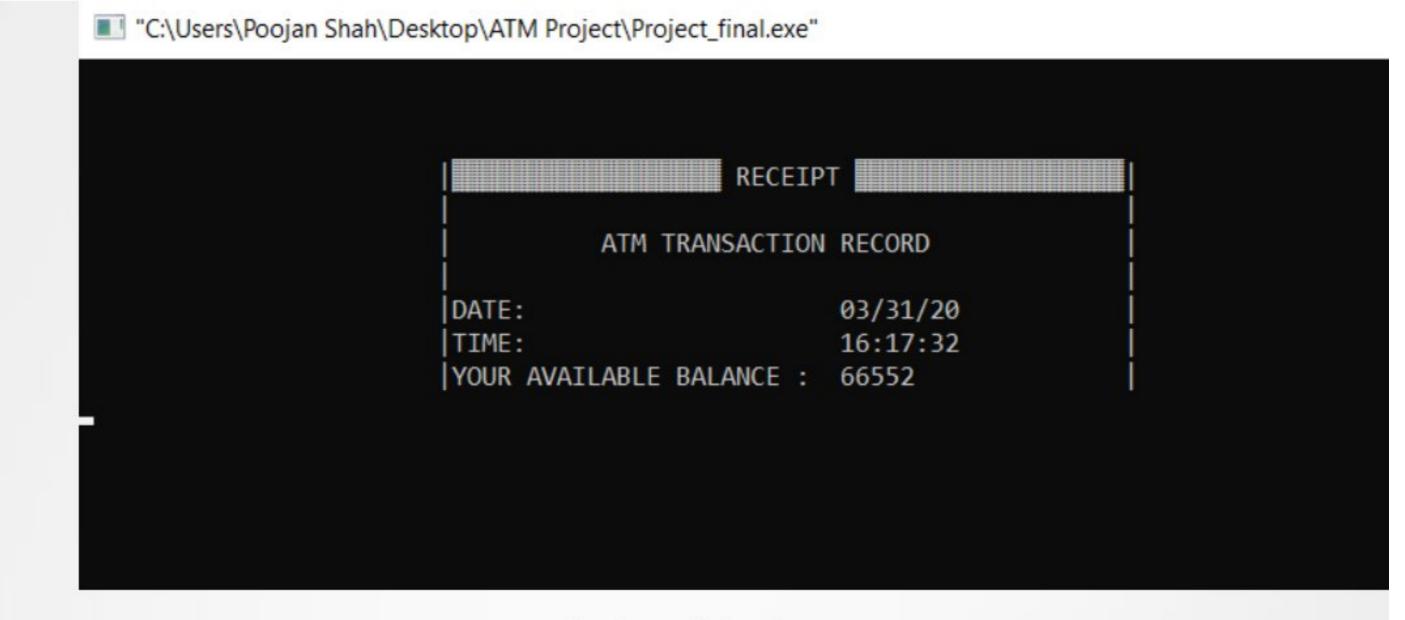
Cannot deduct more than availabe balance
Please enter the amount again.
Enter the amount : 12000



Your main balance is:100000

Enter the deposit amount :

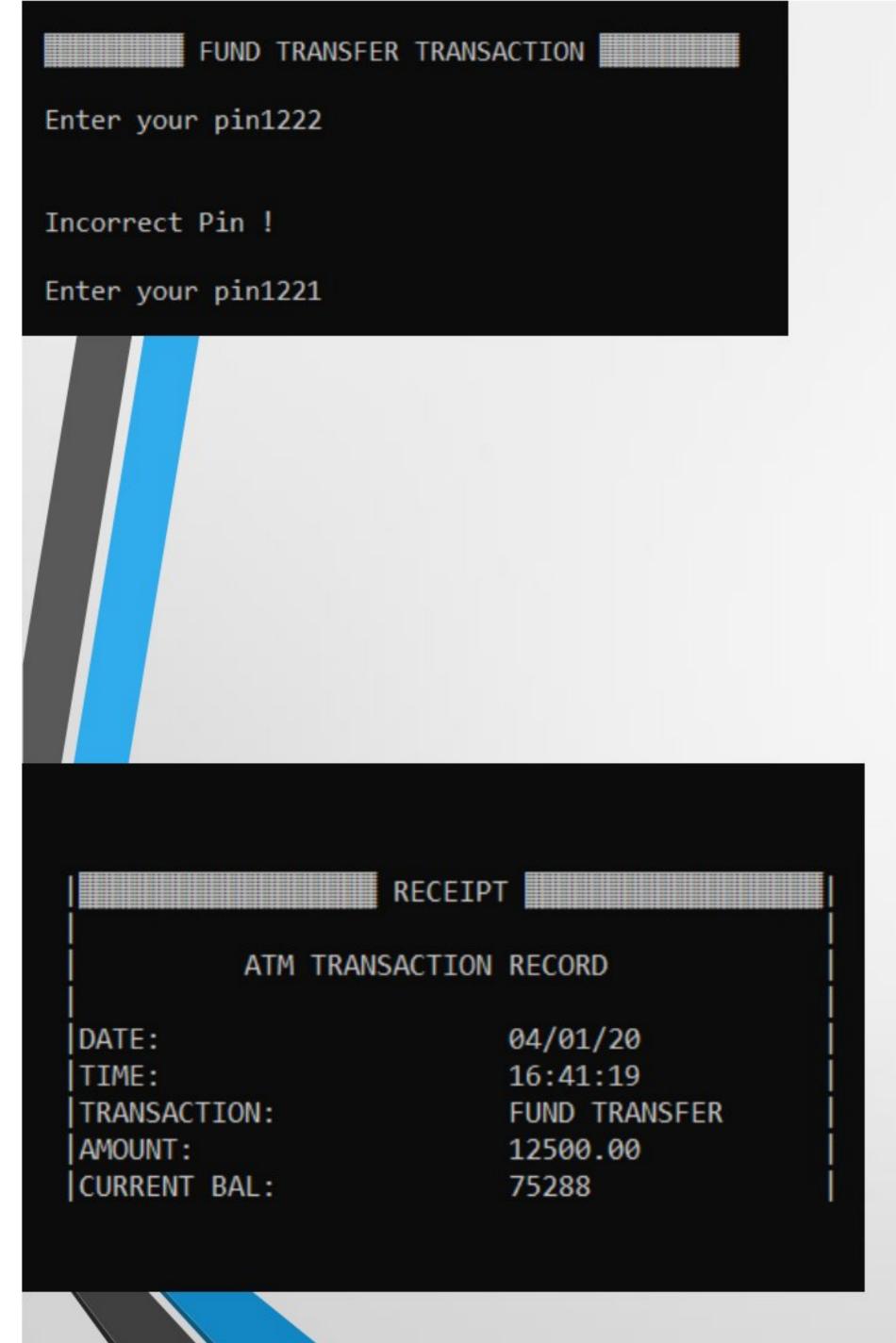
Output of Deposit option

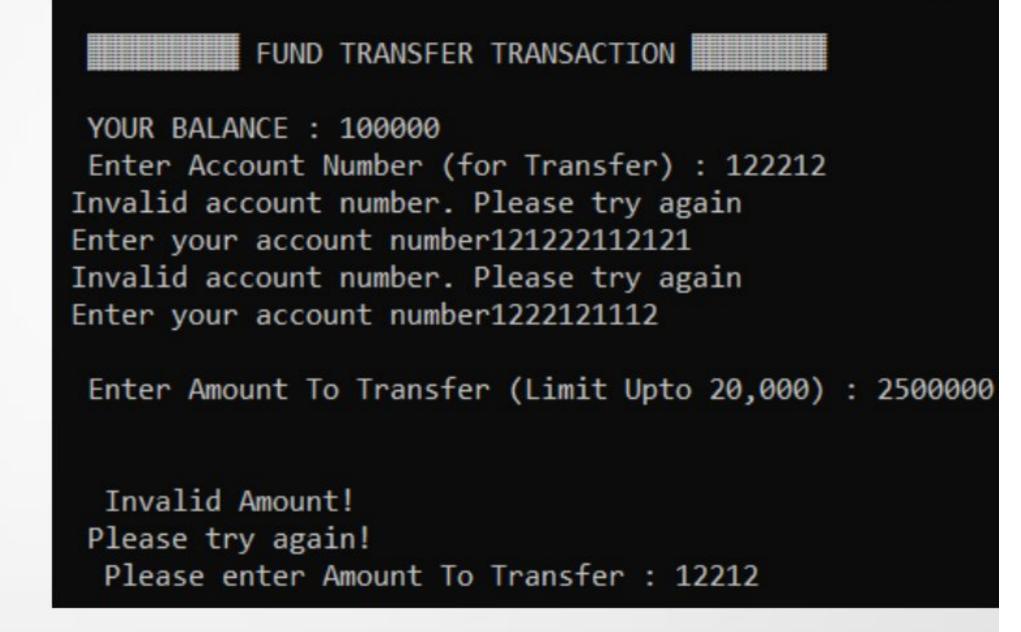


Output of Checkbalance option

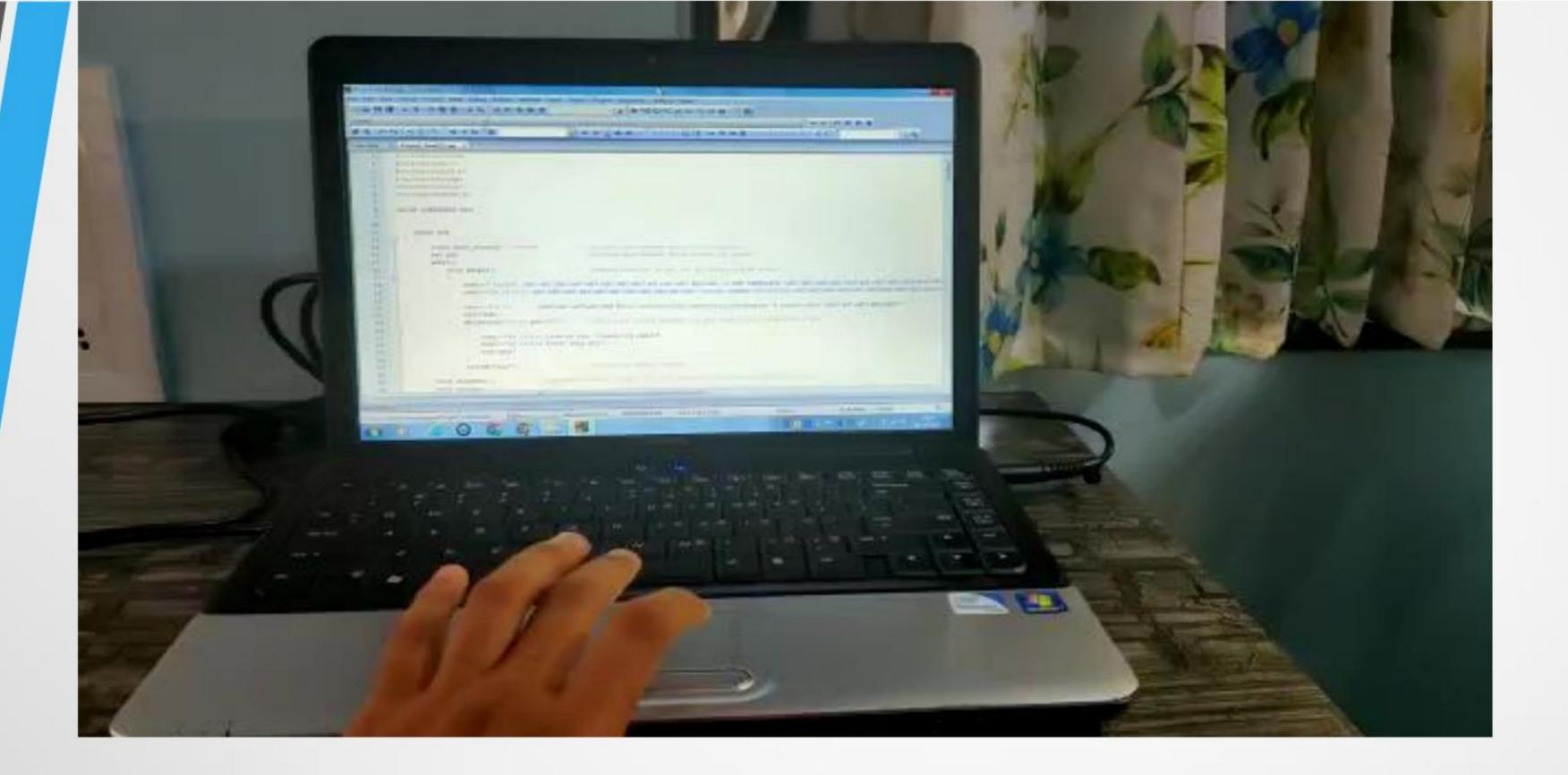
19:50:00	03/28/20	deposit	2222	100000
19:50:48	03/28/20	fund transfer	12343	87657
19:52:19	03/28/20	fund transfer	2234	97766
19:58:10	03/28/20	withdrawal	2342	97658
20:00:42	03/28/20	withdrawal	2222	97778
20:01:10	03/28/20	deposit	3421	101199
20:04:09	03/28/20	fund transfer	2233	98966
20:25:46	03/28/20	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





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

