1 Objective of Project-

To create a program to create a simple trading account and perform some functions of trading with it where customer will be given Rupees 10000.

2 Function Description-

Function(1): Account_Creater: This function creates a new account of customer if account do not exist already and return the account number in both cases either account exists or not.

Function(2): Main_Options: This function shows all the options available to use for the user or customer.

Function(3): Vyapaar: This function switches the user to different menus of the different type of Options and uses some inputs and external methods in it.

Function(4): Print_Tradings: This function shows different options for Trading to the user.

Function(5): buy: This buy function is used for buying new stocks and it has the exception to not to have the sufficient money to buy the stocks and decrement the money from the account of the user . This function uses different local methods that are set_balance, get_balance, set_stocks, get_stocks etc.

Function(6): sell: This sell function is used to sell the stocks the customer already has. and increment the money in his account respectively. it also uses some local methods like showing how many stocks the customer has and how to decrement the stocks form the account.

Function(7): Print_DataSheet: This function is used to print the information of the customer.

Function (8): Deposit: This function is used to deposit the money into the account of the user having the exception of deposit limit exception.

Function (9): Withdraw: This function is used to withdraw the money from the account of the user and decrement it from the account of the user.

Function (10): Check_Pin: This function is used to check the pin if it is same as the set pin or not.

Other Functions: There are many local methods to set, get or print the values of the local and global variables.

3 code of program

Listing 1: Java Mini Project

```
// importing packages
import java.util.*;
// Main class
public class Mini-project {
    // main function
    public static void main(String[] args) {
         // creating object of Scanner class
         Scanner sc = new Scanner (System.in);
         /*creating an array of objects of Trading class
          * and passing it to account creater
          *\ and\ after\ the\ registration\ passing\ it\ to\ the\ Vyapaar\ method
           for the trading purpose
         Trading t[] = new Trading[20];
         int account_no_counter = 0;
        System.out.println("*****TRADING_ACCOUNT*****");
System.out.println("Hello_sir,_\nWelcome_to_the_trading_account");
         account_no_counter = acCreater(account_no_counter, t);
         // starting trading
         MainOptions ();
         Vyapaar(sc.nextInt(), t[account_no_counter]);
    }
    // for printing MainOptions
    public static void MainOptions() {
        System.out.println("press_1_:_Trading_\nPress_2_:_Forgot_pincode_");
System.out.println("Press_3_:_Change_mobile_number_");
System.out.println("Press_4_:_Print_Data_sheet_\nPress_5_:_Exit");
     public static int acCreater(int account_no_counter, Trading t[]) {
        // creating object of Scanner class
Scanner sc = new Scanner(System.in);
         System.out.print ("yes\_to\_continue\_with\_previous\_account\_");\\
         System.out.println("or_no_to_create_a_new_account_(yes/no)_:_");
         if \ (sc.next().equals("yes") \&\& \ account\_no\_counter > 0) \ \{
             System.out.println("Please_Enter_your_Account_no.");
             account_no_counter = sc.nextInt();
         System.out.println("YOU_DON'T_HAVE_ANY_ACCOUNT");
             System.out.print("To_create_a_new_account,_\nPlease_Enter_your_Full_Name_:_");
             String name = sc.nextLine();
             String name2 = sc.nextLine();
```

```
System.out.print("Please_create_a_PINCODE_and_REMEMBER_it!_:_");
         int pincode = sc.nextInt();
         System.out.print("Please_Enter_your_Mobile_number_:_");
         String mobile_no = sc.next();
         account_no_counter++;
t[account_no_counter] = new Trading();
t[account_no_counter].save(name2, mobile_no, pincode);
System.out.println("Dear,_" + name2 + ",_YOU_ARE_SUCCESSFULLY_LOGGED_IN_!");
    return account_no_counter;
}
// the main Vyapaar method
public static void Vyapaar(int a, Trading t1) {
     // creating object of Scanner class
    Scanner sc = new Scanner (System.in);
    // switch on main options
    switch (a) {
         case 1:
              t1. Print_Tradings();
              int trade_menu = sc.nextInt();
              // switch on trading options
              switch (trade_menu) {
                  // for printing account balance case 1: \{
                       System.out.println("Plese_enter_your_pin");
                       if (t1.check_pin(sc.nextInt()))
                           t1.print_balance();
                       else
                           System.out.println("\n\_WRONG\_PIN\_\n");
                       break;
                  }
                  // for buying stocks
                  case 2: {
                       System.out.println("Plese_enter_your_pin");
                       if \quad (\verb|t1.check_pin(sc.nextInt())|) \quad \{\\
                           try {
                                t1.buy();
                           } catch (InsufficientBalanceException e) {
                                System.out.println(e);
                       } else
                           System.out.println("\n_WRONG_PIN_n");
                       break;
                  }
                   // for selling stocks
                  case 3: {
                       System.out.println("Plese_enter_your_pin");
                       if (t1.check_pin(sc.nextInt()))
                           t1.sell();
                       _{
m else}
                           System.out.println("\n\_WRONG\_PIN\_\n");
                       break;
                  // for withdrawing money
                  case 4: {
                       System.out.println("Plese_enter_your_pin");
if (t1.check_pin(sc.nextInt())) {
                            System.out.println("How_much_money_do_you_want_to_withdraw");
                            try {
                                t1.withdraw(sc.nextInt());
                            } catch (InsufficientBalanceException e) {
                                System.out.println(e);
                       } else
```

```
System.out.println("\n_WRONG_PIN_n");
            break:
        }
         // for depositing money
        case 5: {
            System.out.println("Plese_enter_your_pin");
             if (t1.check_pin(sc.nextInt())) {
                 System.out.println("How_much_money_do_you_want_to_deposit");
                     t1.deposit(sc.nextInt());
                 } catch (DepositLimitException o) {
                     System.out.println(o);
            } else
                 System.out.println("\n\_WRONG\_PIN\_\n");
            break;
        }
        // for switching to mainoptions
        case 6: {
            MainOptions();
             Vyapaar(sc.nextInt(), t1);
            return;
        case 7: return;
    break;
}
// case 2 of main options : change pincode
case 2: {
    System.out.print("Enter_your_name_:_");
    if(sc.nextLine().equals(t1.name)) {
        System.out.print("Enter_your_mobile_no._:_");
        if(sc.nextLine().equals(t1.mobile_number)){
    System.out.print("Enter_new_pincode_:");
             t1.pincode = sc.nextInt();
            System.out.println("**Your_pincode_has_successfully_changed**");
        else {
            System.out.println("Incurrect_mobile_number");
    } else {
        System.out.println("Wrong_name");
    break;
}
// for changing mobile number
case 3: {
    System.out.print("Enter_your_name_:_");
    if(sc.nextLine().equals(t1.name)) {
        System.out.print("Enter_your_pincode_:_");
        if(sc.nextInt()==(t1.pincode)){
            System.out.print("Enter\_new\_mobile\_number\_:");\\
            t1.mobile_number = sc.next();
            System.out.println("**Your_mobile_number_has_successfully_changed**");
        else {
            System.out.println("Incurrect_pincode_number");
    } else {
        System.out.println("Wrong_name");
    break;
// for printing data sheet
case 4: {
    // databook;
    System.out.print("Enter_your_mobile_no._:_");
    if(sc.nextLine().equals(t1.mobile_number)){
        System.out.println("Enter_your_pincode_:_");
```

```
if(sc.nextInt()==t1.pincode) {
    System.out.print("Datasheet_is_printing_:");
                            t1.printDataSheet();
                        else {
                            System.out.println("Incurrect_mobile_number");
                   } else {
                       System.out.println("Wrong_name");
                   break;
              }
              default: {
                   return;
         }
          // In the last of process
         System.out.println("Do_you_want_to_process_further,_If_yes_then_press_1_otherwise_anything");
         if (sc.next().equals("1")) {
              MainOptions ();
              Vyapaar(sc.nextInt(), t1);
    }
}
// the main trading class
class Trading extends Accounting {
     // creating object of Scanner class
     Scanner sc = new Scanner (System.in);
     private int myStocks;
     public int get_myStock() {
         return myStocks;
     public void print_mystocks() {
         System.out.println(get_myŠtock());
     public void set_myStocks(int a) {
         myStocks = a;
     public void Print_Tradings() {
         System.out.println("_Press_1:_Check_balance_\n_Press_2:_Buy_\n_Press_3:_Sell");
System.out.println("_Press_4:_withdraw_\n_Press_5:_Deposit_\n_Press_6:_Main_menu_\n_Press_7:_Exit");
     // for buying stocks
     public void buy() throws InsufficientBalanceException {
         int stock = (int) (Math.random() * (9980) + 20);
         System.out.println("The_value_of_one_Stock_is_Rs._" + stock);
System.out.println("How_many_stocks_do_you_want_to_buy");
         int noOfStocks = sc.nextInt();
         if (noOfStocks * stock > this.get_balance()) {
    throw new InsufficientBalanceException("InsufficientBalanceException_:_insufficient_balance");
              int kharcha = this.get_balance() - noOfStocks * stock;
              this.set_balance(kharcha);
         System.out.println("[YOU_HAVE_SUCCESSFULLY_BOUGHT_" + noOfStocks + "_stocks_]");
         int maza = this.get_myStock() + noOfStocks;
         this.set_myStocks(maza);
```

```
// for selling stocks
     public void sell() {
          \mathbf{int} \ \operatorname{stock} \ = \ (\mathbf{int}) \ (\operatorname{Math.random}() \ * \ (9980) \ + \ 20);
          System.out.println("The_value_of_one_Stock_is_Rs._" + stock);
System.out.println("You_have_" + this.get_myStock() + "_stocks,_How_many_do_you_want_to_sell");
          int noOfStocks = sc.nextInt();
          if (noOfStocks <= this.get_myStock()) {</pre>
               int kharcha2 = this.get_balance() + noOfStocks * stock;
               this.set_balance(kharcha2);
               System.out.println("[YOU_HAVE_SUCCESSFULLY_SOLD_" + noOfStocks + "_STOCKS]");
               int maza2 = this.get_myStock() - noOfStocks;
               this.set_myStocks(maza2);
          } else {
               System.out.println("[YOU_DON'T_HAVE_" + noOfStocks + "_STOCKS_]");
     }
     // function for printing datasheet
     public void printDataSheet(){
          System.out.println("\t\tName_:_"+this.name);
System.out.println("\t\tAccount_number_:_"+this.account_number);
System.out.println("\t\tMobile_Number_:_"+this.mobile_number);
System.out.println("\t\tAccount_balance_:_"+this.get_balance());
System.out.println("\t\tNo._of_Stocks_:="+this.get_myStock());
     }
}
   ' Account class to handle accounting processes
class Accounting {
     protected String name;
     protected String mobile_number;
     protected int pincode;
protected int account_number;
     public void save(String name, String mobile_number, int pincode) {
          this.name = name;
          this.mobile_number = mobile_number:
          \mathbf{this}\,.\,\mathtt{pincode}\,=\,\mathtt{pincode}\,;
          // this.account\_number = account\_number;
     }
     protected int acc_balance = 10000;
     public int get_balance() {
          return this.acc_balance;
     public void print_balance() {
          System.out.println("your_account_balance_is_" + this.acc_balance);
     public void set_balance(int a) {
          this.acc_balance = a;
     public void deposit(int money) throws DepositLimitException {
          if (money > 10000)
               throw new DepositLimitException("DepositLimitException :: _more_than _ 10000 _at _a_time");
          this.acc_balance = acc_balance + money;
     }
     public void withdraw(int money) throws InsufficientBalanceException {
          if (acc_balance < money)</pre>
               throw new InsufficientBalanceException ("InsufficientBalanceException _: _insufficient _balance");
          } else {
               this.acc_balance = acc_balance - money;
     }
```

```
public boolean check_pin(int a) {
    if (this.pincode == a) {
        return true;
    } else
        return false;
}

// the exception classes
class InsufficientBalanceException extends Exception {
    InsufficientBalanceException(String message) {
        System.out.println(message);
    }
}

// the exception classes
class DepositLimitException extends Exception {
    DepositLimitException(String message) {
        System.out.println(message);
    }
}
```

Roll No. 0801CS211023 NAME : Arvind kurmi

4 Output of program

```
PROBLEMS 38
             OUTPUT DEBUG CONSOLE
                                      TERMINAL
                                                 JUPYTER
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\Users\hp\Documents\coding\java assignment> javac Mini_project.java
PS C:\Users\hp\Documents\coding\java assignment> java Mini project.java
*****TRADING ACCOUNT****
Hello sir,
Welcome to the trading account
yes to continue with previous account or no to create a new account (yes/no) :
YOU DON'T HAVE ANY ACCOUNT
To create a new account,
Please Enter your Full Name : Arvind kurmi
Please create a PINCODE and REMEMBER it! : 25
Please Enter your Mobile number : 7828437107
Dear, Arvind kurmi, YOU ARE SUCCESSFULLY LOGGED IN !
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
Plese enter your pin
your account balance is 10000
Do you want to process further, If yes then press 1 otherwise anything
1
```

```
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
2
Plese enter your pin
The value of one Stock is Rs. 5644
How many stocks do you want to buy
[YOU HAVE SUCCESSFULLY BOUGHT 1 stocks ]
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
```

```
Plese enter your pin
The value of one Stock is Rs. 5229
You have 1 stocks, How many do you want to sell
[YOU HAVE SUCCESSFULLY SOLD 1 STOCKS]
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
Plese enter your pin
24
WRONG PIN
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
```

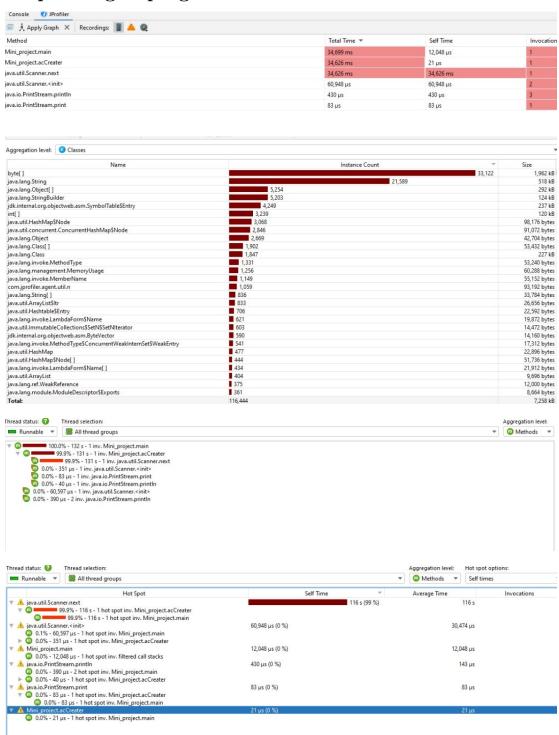
```
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4: Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
Plese enter your pin
your account balance is 9585
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4: Print Data sheet
Press 5 : Exit
Press 1: Check balance
Press 2: Buy
Press 3: Sell
Press 4: withdraw
Press 5: Deposit
Press 6: Main menu
Press 7: Exit
```

```
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Enter your name : Arvind kurmi
Enter your mobile no. : 7828437107
Enter new pincode :74
**Your pincode has successfully changed**
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
 Press 1: Check balance
 Press 2: Buy
 Press 3: Sell
 Press 4: withdraw
 Press 5: Deposit
Press 6: Main menu
Press 7: Exit
Plese enter your pin
your account balance is 9585
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Fxit
```

```
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Enter your name : Arvind kurmi
Enter your pincode : 74
Enter new mobile number: 8839422033
**Your mobile number has successfully changed**
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
Enter your mobile no.: 8839422033
Enter your pincode :
                              Name : Arvind kurmi
Datasheet is printing :
                Account number : 0
                Mobile Number: 8839422033
                Account balance : 9585
                No. of Stocks: 0
Do you want to process further, If yes then press 1 otherwise anything
press 1 : Trading
Press 2 : Forgot pincode
Press 3 : Change mobile number
Press 4 : Print Data sheet
Press 5 : Exit
PS (.\IIsars\hn\Documents\coding\iava assignment)
```

Roll No. 0801CS211023 NAME : Arvind kurmi

5 profiling of program



Roll No. 0801CS211023 NAME : Arvind kurmi

6 debugging of program

```
PS C:\Users\hp\IdeaProjects\account> jdb Mini_project.java
PS C:\Users\hp\IdeaProjects\account> jdb Mini_project
Initializing jdb ...
> stop at Mini_project:18

Deferring breakpoint Mini_project:18.
It will be set after the class is loaded.
> stop at Mini_project:32

Deferring breakpoint Mini_project:32.
It will be set after the class is loaded.
> stop in Mini_project.MainOptions()
Deferring breakpoint Mini_project.MainOptions()
It will be set after the class is loaded.
> stop in Mini_project.Print_Tradings()
Deferring breakpoint Mini_project.Print_Tradings()
Deferring breakpoint Mini_project.printDataSheet()
Deferring breakpoint Mini_project.printDataSheet()
Deferring breakpoint Mini_project.printDataSheet()
Everning breakpoint Mini_project.printDataSheet()
Deferring breakpoint Mini_project.printDataSheet()
Set uncaught java.lang.Throwable
Set deferred uncaught java.lang.Throwable
> VM Started: Set deferred breakpoint Mini_project.Print_Tradings()
Set deferred breakpoint Mini_project.MainOptions()
Set deferred breakpoint Mini_project.MainOptions()
Set deferred breakpoint Mini_project:18

Breakpoint hit: "thread=main", Mini_project.main(), line=18 bci=11
```

```
main[1] next
> Press 7: Exit

Step completed: "thread=main", Mini_project.Print_Tradings(), line=59 bci=48
59 }

main[1] next
>
Step completed: "thread=main", Mini_project.main(), line=29 bci=35
29 printDataSheet();

main[1] next
>
Breakpoint hit: "thread=main", Mini_project.printDataSheet(), line=44 bci=8
44 System.out.println("\t\tName : arvind");

main[1] next
> Name : arvind

Step completed: "thread=main", Mini_project.printDataSheet(), line=45 bci=8
45 System.out.println("\t\tAccount number : 01 ");

main[1] next
> Account number : 01

Step completed: "thread=main", Mini_project.printDataSheet(), line=46 bci=16
46 System.out.println("\t\tMobile Number : 7834928483 ");
```

7 Miscellaneous Information

Starting Date -18/11/22

Starting Day -Friday

Ending Date -21/11/22

Ending Day -Monday

Total Time required - 4 days

Total line of code - 372 lines

Total number of functions -10 + locals

Language Used - Java

Profiler used - Jprofiler

Debugger used $\,$ - JDB

Project Title - Trading Account