Java Lab Program

Lab Program 3:

```
import java.util.*;
import java.lang.*;
class Book {
        String name, author;
        double price;
        int num_pages;
        Scanner in = new Scanner(System.in);

        Book() {
                System.out.println("Enter name of book: ");
                name = in.nextLine();

                System.out.println("Enter name of author: ");
                author = in.nextLine();

                System.out.println("Enter price of book in Rs: ");
                price = in.nextDouble();

                System.out.println("Enter number of pages in the book: ");
                num_pages = in.nextInt();
        }

        void show() {
```

```
        System.out.println("Name: " + name);
        System.out.println("Author: " + author);
        System.out.println("Price: " + price);
        System.out.println("Number of pages: " + num_pages);
}

public String toString() {
        return name + ", By " + author + " for Rs." + price + " and has " + num_pages + " pages";
}

public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        int n, x;

        System.out.println("Enter number of books to be created: ");
        n = in.nextInt();

        Book B[] = new Book[n];

        for(int i = 0; i < n; i++) {
                System.out.println("Book " + (i+1));
                B[i] = new Book();
                System.out.println();
        }

        for(int i = 0; i < n; i++) {
                System.out.println("Book " + (i+1));
```

```
                System.out.println(B[i]);
                System.out.println();
            }
            do {
                System.out.println("Enter the book number whose details you want to display:
");
                x = in.nextInt();
            } while(x < 1 && x > n);
            B[x-1].show();

        }
}
```

Lab Program 3 Output:

```
PS C:\Users\Deepesh\desktop\java> java Book
Enter number of books to be created:
2
Book 1
Enter name of book:
Ascii
Enter name of author:
Jason
Enter price of book in Rs:
800
Enter number of pages in the book:
700

Book 2
Enter name of book:
Java
Enter name of author:
Tata
Enter price of book in Rs:
1200
Enter number of pages in the book:
1500

Book 1
Ascii, By Jason for Rs.800.0 and has 700 pages

Book 2
Java, By Tata for Rs.1200.0 and has 1500 pages

Enter the book number whose details you want to display:
1
Name: Ascii
Author: Jason
Price: 800.0
Number of pages: 700
PS C:\Users\Deepesh\desktop\java>
```

Lab Program 5:

```
import java.util.*;
import java.lang.*;

class Account {

   String name, abc;
   int accNo;
   char accType;
   double bal = 0;
   double deposit;
   Scanner in = new Scanner(System.in);

   void input_data() {

      System.out.println("Enter your account type (S/C):");
      abc = in.nextLine();
      accType = abc.charAt(0);
   }

   void deposit() {

      System.out.println("Enter an amount to deposit: ");
      deposit = in.nextDouble();

      bal += deposit;
      System.out.println("Balance has been updated. ");
   }
```

```
void view_balance() {

   System.out.println("Balance = " + bal);
}

public static void main(String[] args) {

   Scanner s = new Scanner(System.in);
   int x;
   Account a1 = new Account();
   a1.input_data();

   if (a1.accType == 'C' || a1.accType == 'c') {

      Current a2 = new Current();

      do {
         System.out.println("WELCOME TO YOUR CURRENT ACCOUNT");
         System.out.println("1. Deposit ");
         System.out.println("2. Check Balance ");
         System.out.println("3. Issue Cheque ");
         System.out.println("4. Exit");
         System.out.println("Enter your choice: ");
         x = s.nextInt();

         switch (x) {
            case 1:
               a2.deposit();
```

```
            break;
        case 2:
            a2.check_balance();
            break;
        case 3:
            a2.issue_cheque();
            break;
        case 4:
            System.exit(0);
            break;
        default:
            System.out.println("ERROR. INVALID CHOICE.");
      }

   } while (x <= 4 && x >= 1);
} else if (a1.accType == 'S' || a1.accType == 's') {

   Savings a3 = new Savings();

   do {
      System.out.println("WELCOME TO YOUR SAVINGS ACCOUNT");
      System.out.println("1. Deposit");
      System.out.println("2. View Balance");
      System.out.println("3. Withdraw ");
      System.out.println("4. Calculate compound interest ");
      System.out.println("5. Exit ");
      System.out.println("Enter your choice: ");
      x = s.nextInt();
```

```
            switch (x) {
               case 1:
                  a3.deposit();
                  break;
               case 2:
                  a3.view_balance();
                  break;
               case 3:
                  a3.withdraw_balance();
                  break;
               case 4:
                  a3.compute_CI();
                  break;
               case 5:
                  System.exit(0);
                  break;
               default:
                  System.out.println("ERROR. INVALID CHOICE.");
            }

         } while (x <= 5 && x >= 1);
      } else
         System.out.println("INVALID ACCOUNT TYPE");
   }
}

class Current extends Account {

   Current() {
```

```
    System.out.println("Enter your name: ");
    name = in.nextLine();

    System.out.println("Enter your account number: ");
    accNo = in.nextInt();

    deposit();
}

double chq_amount;

void issue_cheque() {

    System.out.println("Enter amount for which cheque is to be issued.");
    chq_amount = in.nextDouble();
    if (chq_amount > bal) {
        System.out.println("ERROR! Insufficient balance in account.");
    } else {
        bal -= chq_amount;
        System.out.println("Cheque has been issued SUCCESSFULLY");
    }
}

void check_balance() {

    if (bal < 1000) {

        System.out.println("Current available balance is lesser than minimum required balance.");
```

```
            bal -= 100;
            System.out.println("Service charge of Rs.100 has been deducted from your balance.");
        }
        view_balance();
    }
}

class Savings extends Account {

    double CI, withdrawal_ammount, time;

    Savings() {

        System.out.println("Enter your name: ");
        name = in.nextLine();

        System.out.println("Enter your account number: ");
        accNo = in.nextInt();

        deposit();
    }

    void compute_CI() {

        System.out.println("Enter time period in years: ");
        time = in.nextInt();
        CI = bal * Math.pow(1 + (0.08 / 12), 12 * time) - bal;
        System.out.println("CI = " + CI);
        bal += CI;
```

```
        System.out.println("CI has been deposited");
    }

    void withdraw_balance() {

        System.out.println("Enter the amount you want to withdraw: ");
        withdrawal_ammount = in.nextDouble();

        if (withdrawal_ammount > bal) {
            System.out.println("ERROR! THE ENTERED AMOUNT IS GREATER THAN THE AVAILABLE
BALANCE...");
        } else {
            bal -= withdrawal_ammount;
            System.out.println("AMOUNT HAS SUCCESSFULLY BEEN WITHDRAWN!");
        }
    }

}
```

Lab Program 5 Output:

```
PS C:\Users\Deepesh\desktop\java> java Account
Enter your account type (S/C):
S
Enter your name:
Das
Enter your account number:
5151
Enter an amount to deposit:
8000
Balance has been updated.
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
4
Enter time period in years:
5
CI = 3918.765666412841
CI has been deposited
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
2
Balance = 11918.76566641284
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
```

```
Enter your account type (S/C):
C
Enter your name:
abc
Enter your account number:
5151
Enter an amount to deposit:
5000
Balance has been updated.
WELCOME TO YOUR CURRENT ACCOUNT
1. Deposit
2. Check Balance
3. Issue Cheque
4. Exit
Enter your choice:
3
Enter amount for which cheque is to be issued.
2000
Cheque has been issued SUCCESSFULLY
WELCOME TO YOUR CURRENT ACCOUNT
1. Deposit
2. Check Balance
3. Issue Cheque
4. Exit
Enter your choice:
2
Balance = 3000.0
WELCOME TO YOUR CURRENT ACCOUNT
1. Deposit
2. Check Balance
3. Issue Cheque
4. Exit
Enter your choice:
```