Lab 5

18/01/24 Develop a java program to develop a class Bank with includes current and savings account

```
import java.util.Scanner;

abstract class Account {
    String name;
    int accno;
    String type;

    abstract void deposit(double amount);
    abstract void display();
    abstract void withdraw(double amount);
    abstract void menu();
}

class current extends Account {
    double balance;
    private static int MIN_BALANCE = 500;
    private static int SER_CHARGE = 10;

    public current(String name, int accno, String type)
    {
        this.name = name;
        this.accno = accno;
        this.type = type;
    }

    void deposit(double amount) {
        this.balance += amount;
        System.out.println("Amount deposited");
```

```
        if(this.balance < MIN_BALANCE) {
            System.out.println("Penalty");
            this.balance -= SER_CHARGE;
        }
    }

    void display() {
        System.out.println("Name : " + this.name);
        System.out.println("Account number : " + this.acno);
        System.out.println("Balance : " + this.balance);
    }

    void withdraw(double amount) {
        if(this.balance < amount) {
            System.out.println("Insufficient balance");
        }
        else {
            this.balance -= amount;
        }
    }
    void menu() {
        System.out.println("--MENU--");
        int choice;
        double amount;
        do {
            System.out.println("1.Deposit 2.Withdraw 3.details
                4.Exit");
            Scanner sc = new Scanner(System.in);
            choice = sc.nextInt();
```

```
switch(choice){
    case 1: System.out.println("enter amount:");
            amount = sc.nextDouble();
            this.deposit(amount);
            break;

    case 2: System.out.println("enter withdrawal
                amount:");
            amount = sc.nextDouble();
            this.withdraw(amount);
            break;

    case 3: this.display();
            break;

    case 4: return;
  }
 }while(choice != 4);
}

}
class savings extends Account {
    int balance;
    final float Interest = 5f;

    public savings(String name, int accno, String type)
    {
        this.name = name;
        this.accno = accno;
        this.type = type;
    }
```

```
void deposit (double amount) {
        float interestAmount = (float) (amount *
                                (this.interval / 100));
        System.out.println("Interest of : " + interestAmount
                            + " is added");
        this.balance += amount + interestAmount;
        System.out.println("Amount deposited");
    }

void display() {
    System.out.println("Name : " + this.name);
    System.out.println("Account Number : " + this.accNo);
    System.out.println("Balance : " + this.balance);
}

void withdraw(double amount) {
    if(this.balance < amount) {
        System.out.println("Insufficient balance");
    }
    else {
        this.balance -= amount;
    }
}
void menu() {
    System.out.println("--MENU--");
    int choice;
    double amount;
    do {
        System.out.println("1. deposit 2. withdraw
                            3. details 4. Exit");
```

```
Scanner sc = new Scanner(System.in);
choice = sc.nextInt();
do {
    System.out.println("1. Deposit 2. Withdraw 3. detail
                        4. Exit");
    Scanner sc = new Scanner(System.in);
    choice = sc.nextInt();

    switch(choice) {
        case 1: System.out.print("Enter amount: ");
                amount = sc.nextDouble();
                this.deposit(amount);
                break;

        case 2: System.out.println("Enter withdrawal:");
                amount = sc.nextDouble();
                this.withdrawal(amount);
                break;

        case 3: this.display();
                break;

        case 4: return;
    }
} while(choice != 4);
}
```

```
public class Bank {

    public static void main (String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.println ("enter name, accno, type:");
        String name = sc.next();
        int accno = sc.nextInt();
        String type = sc.next();

        if (type.equals ("current")) {
            Account c = new Current (name, accno,
                                     type);

            c.menu();
        }
        else {
            Account s = new Savings (name, accno,
                                     type);

            s.menu();
        }

    }
}
```

output:

enter name, accno, type:
santosh
12
current

--MENU--
1. deposit 2. Withdraw 3 details 4. Exit
1
Enter ~~the~~ deposit amount : 50000
amount deposited.
1. deposit 2 Withdraw 3 details 4. Exit
2
Enter withdrawal : 1000
1. deposit 2. Withdraw 3. details 4 Exit
2
Enter withdrawal amount :
6000
insufficient balance.
1. deposit 2. Withdraw 3. details 4. Exit
3 2
Name : santosh
Account number : 12
Balance : 4000.

Lab 5:

1) write a java program of stack generic class to push and pop 5 integers and double values

```
import java.util.ArrayList;

public class StackGenerics <T> {
    ArrayList<T> stack;

    StackGenerics() {
        stack = new ArrayList<>();
    }
    void push (T i) {
        stack.add(i);
    }
    T pop() {
        T val = stack.remove(stack.size() - 1);
        return val;
    }
    void display() {
        for(int i=0; i< stack.size(); i++) {
            System.out.println(stack.get(i) + " ");
        }
    }

    public static void main (String[] args) {
        StackGenerics<Integer> s = new StackGenerics();
        for(int i=1; i<=5; i++) {
            s.push(i);
        }
        s.display();
        System.out.println();
```

```
for(int i=1; i<=5; i++) {
    System.out.println("popped : " + s.pop());
}
StackGenerics<Double> d = new StackGenerics<>();
for(int i=1; i<=5; i++) {
    d.push((double) i);
}
d.display();
System.out.println();
for(int i=1; i<=5; i++) {
    System.out.println("popped : " + d.pop());
}
}
}
```

output:

```
1  2  3  4  5
Popped : 5
popped : 4
popped : 3
popped : 2
popped : 1
1.0  2.0  3.0  4.0  5.0
Popped : 5.0
popped : 4.0
popped : 3.0
popped : 2.0
popped : 1.0
```

16/1/2024

Lab 6 Strings

① BMSCE
BMSCE

② 3
3
ROLL NO 10 is present

③ Dimensions are 10.0 by 14.0 by 12.0
box b: Dimensions are 10.0 by 14.0 by 12.0

④ bmsce

⑤ 65
66
67
Welcome to bmsce college

⑥ Bmsce equals Bmsce → true
Bmsce equals college → false
Bmsce equalsIgnoreCase BMSCE → true

⑦ substring is matched
s1 = "bmsce college"
s2 = "welcome to bmsce college of Engineering"

⑧ true
false

⑨ false
true

(10) Hello equals Hello → true
Hello == Hello → false

(11) The names in alphabetical order are:
apple
ball
cat
iron
watch

(12) Sorted Numbers (Ascending Order) : [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

(13) Thwas was a test . Thwas was too

(14) hello world

(15) commege

(16) Hello friends

(17) student 1
name : prateek
Reg no : 123
Semester : 3
CGPA : 8.87.

student 2
name : Howla
Reg no : 129
Semester : 4
CGPA : 9.05.

(18) charAt 3 is 'A'
Reverse of SAS is SAS

(19) Eagle is flying
Eagle makes a sound

Hawk is moving
Hawk is making a sound

(20) Circle-Area : 78.5398 Perimeter - 31.4259
Triangle - Area : 5.0 Perimeter : 10.0