

Week-8

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Program - 1

```

import java.util.Scanner;
abstract class Shape {
    int b, h;
    Shape (int b, int h) {
        this.b = b;
        this.h = h;
    }
    void printArea () {}
}
class Rectangle extends Shape {
    Rectangle (int b, int h) {
        super (b, h);
    }
    void printArea () {
        System.out.println ("Area of the rectangle is" +
            (b*h));
    }
}
class Triangle extends Shape {
    Triangle (int b, int h) {
        super (b, h);
    }
    void printArea () {
        System.out.println ("Area of the triangle is" +
            ((b*h)/2));
    }
}
class Circle extends Shape {

```

```
Circle (int r) {  
    Super (0, r);  
}
```

```
void printArea() {  
    System.out.println ("Area of the circle is" +  
        (Math.PI * r * r));  
}
```

```
public class Prog1d  
{  
    public static void main (String[] args) {  
        Triangle tri = new Triangle (10, 5);  
        Rectangle rect = new Rectangle (10, 5);  
        Circle c = new Circle (10);  
        rect.printArea();  
        tri.printArea();  
        c.printArea();  
    }  
}
```


Program-2

```
import java.util.Scanner;
```

```
abstract class Account {
```

```
    String cName, accNum, accType;
```

```
    public static final String ANSI_RED = "\u001B[31m";
```

```
    public static final String ANSI_GREEN = "\u001B[32m";
```

```
    public static final String ANSI_RESET = "\u001B[0m";
```

```
    Scanner sc sc = new Scanner(System.in);
```

```
    Account(String name, String accNo, String accType) {
```

```
        this.cName = name;
```

```
        this.accNum = accNo;
```

```
        this.accType = accType;
```

```
    }
```

```
    Account() {};
```

```
}
```

```
class CurrentAcc extends Account {
```

```
    private double balance = 5000, rate = 0.06;
```

```
    CurrentAcc(String name, String accNo, String accType) {
```

```
        super(name, accNo, accType);
```

```
        System.out.println("Welcome" + cName);
```

```
    }
```

```
    void getBalance() {
```

```
        System.out.format("Your balance: %.f \n", balance);
```

```
    }
```

```
    void deposit(double amount) {
```

```
        char choice;
```

```
System.out.println ("Deposit Account holder: " + cName
                    + "Amount: " + amount);
```

```
System.out.println ("Approve Deposit? (Y/N):");
choice = sc.next().charAt(0);
```

```
if (choice == 'Y' || choice == 'y') {
```

```
    balance += amount;
```

```
    System.out
```

```
System.out.println (ANSI_GREEN + "Deposit approved.  
Updated balance: " + balance + ANSI_RESET);
```

```
} else {
```

```
System.out.println (ANSI_RED + "Deposit not approved"  
                    + ANSI_RESET);
```

```
}
```

```
}
```

```
void withdraw(double amount) {
```

```
System.out.println (ANSI_RED + "This account cannot  
withdraw any funds" + ANSI_RESET);
```

```
}
```

```
void calcInterest() {};
```

```
void checkMinAmount() {
```

```
    if (balance < 3000) {
```

```
        balance -= 500;
```

```
System.out.println (ANSI_RED + "Balance under  
minimum amount to be maintained." +  
                    ANSI_RESET);
```

```
System.out.println (ANSI_RED + "Penalty imposed.  
Updated balance: " + balance + ANSI_RESET);
```

```
}
```

```
}
```


}

Class SavingsAcc extends Account {
private double balance = 5000, rate = 0.06;

SavingsAcc(String name, String accNo, String accType) {
super(name, accNo, accType);

System.out.println("New ~~acc~~ customer:" + cName);
}

void getBalance() {

System.out.format("Your balance: %f\n", balance);
}

void deposit(double amount) {

char choice;

System.out.println("Deposit. Account holder: " + cName + "
Amount: " + amount);

System.out.println("Approve Deposit? (Y/N): ");

choice = sc.next().charAt(0);

if (choice == 'Y' || ~~choice~~ choice == 'y') {
balance += amount;

System.out.println(ANSI_GREEN + "Deposit approved.
updated balance: " + balance + ANSI_RESET);

calcInterest();

checkMinAmount();

} else {

System.out.println(ANSI_RED + "Deposit not approved" +
ANSI_RESET);

}
}

void calcInterest() {

double CI;

```

CI = balance * (Math.pow((1 + rate / 100), 2));
balance += CI;

```

```

System.out.println(ANSI - GREEN + "Interest added.  
Updated balance:" + balance + ANSI - RESET);
}

```

```

void withdraw(double amount) {
    char choice;

```

```

    if (balance < amount) {
        System.out.println(ANSI - RED + "Account balance  
is lower than amount to be withdrawn" +  
ANSI - RESET);
        return;
    }

```

```

    System.out.println("Approve" + cName + "'s request for  
withdrawal? (Y/N): ");

```

```

    choice = sc.next().charAt(0);

```

```

    if (choice == 'Y' || choice == 'y') {
        balance -= amount;

```

```

        System.out.println(ANSI - GREEN + "Withdrawal approved.  
Updated balance: " + balance + ANSI - RESET);

```

```

        calcInterest();

```

```

        checkMinAmount();

```

```

    } else {

```

```

        System.out.println(ANSI - RED + "Withdrawal not approved" +  
ANSI - RESET);
    }

```

```

}

```

```

void checkMinAmount() {

```

```

    int minAmount = 3000, penalty = 500;

```

```

    if (balance < minAmount) {

```



```

        balance -= penalty;
        System.out.println(ANSI_RED + "Balance under minimum amount  

        to be maintained." + ANSI_RESET);
        System.out.println(ANSI_RED + "Penalty imposed. Updated  

        balance: " + balance + ANSI_RESET);
    }
}

```

```

public class Prog2 {
    public static void main (String[] args) {
        int c;
        double temp;

```

```

        String name, accNo, accType;

```

```

        Scanner sc = new Scanner(System.in);

```

```

        System.out.println("Enter Name:");
        name = sc.nextLine();

```

```

        System.out.println("Enter Account number:");
        accNo = sc.nextLine();

```

```

        System.out.println("Enter Account Type:");
        accType = sc.nextLine();

```

```

        if (accType.charAt(0) == 'c') {
            CurrentAcc a = new CurrentAcc(name, accNo, accType);
            while (true) {

```

```

                System.out.println("1. Deposit money\n2. Withdraw money\n3. Display money\n4. Exit");
                c = sc.nextInt();

```

```

                switch (c) {

```

Case 1: d

```
System.out.println("Enter amount to be deposited:");
temp = sc.nextDouble();
a.deposit(temp);
break;
}
```

Case 2: d

```
System.out.println("Enter amount to be withdrawn:");
temp = sc.nextDouble();
a.withdraw(temp);
break;
}
```

Case 3: d

```
a.getBalance();
break;
}
```

Case 4: d

```
System.exit(0);
break;
}
```

```
Default: System.out.println("Enter the correct options");
}
```

```
} else if (accType.charAt(0) == 'S') {
```

```
SavingsAcc a = new SavingsAcc(name, accNo, accType);
```

```
while(true) {
```

```
System.out.println("1. Deposit money\n2. withdraw money\n3. Display money\n4. Exit");
```

```
c = sc.nextInt();
```

```
Switch(c) {
```

```
Case 1: d
```



```
System.out.println("Enter amount to be deposited: ");
```

```
temp = sc.nextDouble();
```

```
a. deposit(temp);
```

```
break;
```

```
}  
Case 2: 1
```

```
System.out.println("Enter amount to be withdrawn: ");
```

```
temp = sc.nextDouble();
```

```
a. withdraw(temp);
```

```
break;
```

```
}  
Case 3: 1
```

```
a. getBalance();
```

```
break;
```

```
}  
Case 4: 1
```

```
System.exit(0);
```

```
break;
```

```
}  
default: System.out.println("Enter the correct options");
```

```
}  
else 1
```

```
System.out.println("Enter valid type ... Exiting");
```

```
}  
}
```