

P4:Code

```
1 import java.util.Scanner;
2
3 abstract class shape
4 {
5     int i1,i2;
6     abstract void printarea();
7 }
8
9 class rectangle extends shape
10 {
11     void printarea()
12     {
13         System.out.println("\nArea: "+(i1*i2));
14     }
15 }
16
17 class triangle extends shape
18 {
19     void printarea()
20     {
21         System.out.println("\nArea of Triangle: "+(i1*i2/2));
22     }
23 }
24
25 }
26
27 class circle extends shape
28 {
29     void printarea()
30     {
31         System.out.println("\nArea: "+ (3.1415*i1*i1));
32     }
33 }
34
35 class shapeMain
36 {
37     public static void main(String args[])
38     {
39         Scanner get=new Scanner(System.in);
40         int choice;
41         triangle t= new triangle();
42         rectangle r= new rectangle();
43         circle c= new circle();
44         System.out.println(" 1. Rectangle\n 2. Triangle\n 3. Circle");
45         System.out.printf("\nEnter the choice: ");
46
47         System.out.printf("\nEnter the choice: ");
48         choice=get.nextInt();
49         switch(choice)
50         { case 1 :
51             System.out.print("Enter Height and Width:");
52             r.i1= get.nextInt();
53             r.i2= get.nextInt();
54             r.printarea();
55             break;
56         case 2 :
57             System.out.print("Enter altitude and base:");
58             t.i1= get.nextInt();
59             t.i2= get.nextInt();
60             t.printarea();
61             break;
62         case 3 :
63             System.out.print("Enter the radius :");
64             c.i1= get.nextInt();
65             c.printarea();
66             break;
67         default : System.out.println("Input Error! ");
68             System.exit(0);
69         }
70     }
71 }
```

P4:Output

```
1. Rectangle
2. Triangle
3. Circle

Enter the choice: 1

Enter Height and Width:10 4

Area: 40

G:\NoTePadPP\MyJava\001_LAB\Week8>java shapeMain

1. Rectangle
2. Triangle
3. Circle

Enter the choice: 2

Enter altitude and base:10 5

Area of Triangle: 25

G:\NoTePadPP\MyJava\001_LAB\Week8>java shapeMain

1. Rectangle
2. Triangle
3. Circle

Enter the choice: 3
Enter the radius :5

Area: 78.53750000000001
```

P5:Code

```
1 import java.util.Scanner;
2 import java.lang.Math;
3
4 abstract class account
5 {
6     String name;
7     String accountNo;
8     String typeOfAccount;
9     double balance;
10    Boolean chequeBook;
11    abstract void balanceDisplay();
12    abstract void balanceCredit();
13    abstract void balanceDebit();
14    abstract void balanceCheck(double amount);
15    abstract void operation();
16}
17
18 }
19 class curAcc extends account
20 {
21     Scanner get = new Scanner(System.in);
22     double minBalance;
23     curAcc()
24     {
25         System.out.println("\n -----Welcome to Currents Account, Enter the below details to create an Account-----");
26         System.out.print(" Name: ");name=get.nextLine();
27         typeOfAccount="Current Account";
28         chequeBook=true;
29         accountNo="SBE-"+concat("CUR-").concat(name);
30         System.out.print(" Your Account No is %s ",accountNo);
31         minBalance=1000;
32         balance=0;
33         firstDeposit();
34     }
35     void firstDeposit()
36     {
37         System.out.println("\n You need Have min balance of "+minBalance+" Rupees, else you will be charged "+fineCal()+" every month\n Deposit Now!");
38         balanceCredit();
39         System.out.print("\n Thank you are creating An Account!\n ");
40         this.operation();
41     }
42     void fineCheck()
43     {
44         int k;
45         if(balance<1000)
46             System.out.println("\n You need Have min balance of "+minBalance+" Rupees, else you will be charged "+fineCal()+" every month\n Deposit Now!");
47
48     }
49     {
50         int k;
51         if(balance<1000)
52             System.out.println("\n You need Have min balance of "+minBalance+" Rupees, else you will be charged "+fineCal()+" every month\n Deposit Now!");
53         if(k==1)
54             balanceCredit();
55         else
56             balance=fineCal();
57     }
58     double fineCal()
59     {
60         double fine=0;
61         if(balance<0)
62         {
63             fine=100.0;
64         }
65         else
66         {
67             if(balance<=0)
68                 fine=50;
69         }
70         return fine;
71     }
72     void balanceCheck(double amount)
73     {
74         if(amount>balance)
75         {
76             System.out.print("\n The Withdraw Amount exceeds the Balance, check your balance and try again! ");
77             balanceDisplay();
78             operation();
79         }
80     }
81     void balanceCredit()
82     {
83         double amount;
84         System.out.print("\n Enter the amount to deposit: ");
85         amount=get.nextDouble();
86         balance+=amount;
87         System.out.printf("\n %.4f amount is Credited, Total balance = %.4f ",amount,balance);
88         fineCheck();
89     }
90 }
91 void balanceDebit()
92 {
93     double amount;
94     System.out.print("\n Enter the amount to Withdraw: ");
95     amount=get.nextDouble();
96     balanceCheck(amount);
97     balance-=amount;
98     System.out.printf("\n %.4f amount was Debited, Total balance = %.4f ",amount,balance);
99     fineCheck();
100 }
101 void balanceDisplay()
102 {
103     System.out.printf("\n Total balance = %.4f ",balance);
104 }
105 void operation()
106 {
107     int choice,flag=0;
108     do
109     {
110         System.out.printf("\n Enter the choice:\n 1.Deposit\n 2.Withdraw\n 3.Display Balance\n 4.Exit\n Choice: ");
111         choice=get.nextInt();
112         switch(choice)
113         {
114             case 1 : this.balanceCredit();
115             break;
116             case 2 : this.balanceDebit();
117             break;
118             case 3 : this.balanceDisplay();
119             break;
120             case 4 : System.exit(0);
121             default: System.out.printf(" \n Error input Give choice again! ");
122             operation();
123         }
124         System.out.print("\n Do you wish to continue? Press 1 to continue :");
125         flag=get.nextInt();
126     }while(flag==1);
127 }
128 }
129 class savAcc extends account
130 {
131     Scanner get = new Scanner(System.in);
132 }
```

```

131 Scanner get = new Scanner(System.in);
132 double interestRate;
133 double interest;
134 int k=0;
135 SavAcc();
136 {
137     System.out.println("\n <----Welcome to Savings Account, Enter the below details to create an Account----->");
138     System.out.print(" Name: ");
139     typeOfAccount="Savings Account";
140     checked=false;
141     accountNo ="SAV-"+concat("SAV-").concat(name);
142     System.out.print(" Your Account No is %s ",accountNo);
143     balance=0;
144     interestRate=0.08;
145     interest=0;
146     firstDeposit();
147 }
148 void firstDeposit()
149 {
150     int k;
151     System.out.print("\n Do you wish to deposit money now? Press 1 to deposit : ");
152     k=get.nextInt();
153     if(k==1)
154         balanceCredit();
155     System.out.print("\n Thank you are creating An Account!\n ");
156     this.operation();
157 }
158 void operation()
159 {
160     int choice,flag=0;
161     do
162     {
163         System.out.print("\n Enter the choice:\n 1.Deposit\n 2.Withdraw\n 3.Display Balance\n 4.Interest Display\n 5.Exit\n Choice: ");
164         choice=get.nextInt();
165         switch(choice)
166         {
167             case 1 : this.balanceCredit();
168             break;
169             case 2 : this.balanceDebit();
170             break;
171             case 3 : this.balanceDisplay();
172             break;
173             case 4: this.compoundInt();
174             break;
175             case 5 : System.exit(0);
176         }
177         default: System.out.printf(" \n Error input Give choice again! ");
178         operation();
179     }
180     System.out.print("\n Do you wish to continue? Press 1 to continue : ");
181     flag=get.nextInt();
182     while(flag!=1);
183 }
184 void balanceCheck(double amount)
185 {
186     if(amount>balance)
187     {
188         System.out.printf("\n The Withdraw Amount exceeds the Balance, check your balance and try again! ");
189         balanceDisplay();
190         operation();
191     }
192 }
193 void balanceCredit()
194 {
195     double amount;
196     System.out.print("\n Enter the amount to deposit: ");
197     amount=get.nextDouble();
198     balance+=amount;
199     System.out.printf("\n %.4f amount is Credited, Total balance = %.4f ",amount,balance);
200 }
201 }
202 void balanceDebit()
203 {
204     double amount;
205     System.out.print("\n Enter the amount to Withdraw: ");
206     amount=get.nextDouble();
207     balanceCheck(amount);
208     balance-=amount;
209     System.out.printf("\n %.4f amount was Debitted, Total balance = %.4f ",amount,balance);
210 }
211 }
212 void balanceDisplay()
213 {
214     System.out.printf("\n Total balance = %.4f ",balance);
215 }
216 void compoundInt()
217 {
218     int k;
219     .
220     .
221     if(balance == 0)
222     {
223         System.out.printf("\n You have Zero balance : Press 1 to Deposit and try again : ");
224         k=get.nextInt();
225         if(k==1)
226             balanceCredit();
227         operation();
228     }
229     System.out.print("\n Enter the No of years: ");
230     years=get.nextInt();
231     interestBalance=Math.pow((1+interestRate),years)*balance;
232     System.out.print("\n Initial Balance:%.4f\n Interest:%.4f",balance,interest);
233     balance+=interest;
234     System.out.print("\n Final Balance:%.4f ",balance);
235 }
236 }
237 class bank
238 {
239     .
240     public static void main(String[] args)
241     {
242         int savCount=0,curCount=0,k,n=0;
243         Scanner get = new Scanner(System.in);
244         System.out.print("\n Enter the No Of Accounts(MAX is 20): ");
245         n=get.nextInt();
246         m=new int[n];
247         savAcc=s[];
248         curAcc=c[];
249         s=new SavAcc[10];
250         c=new CurAcc[10];
251     }
252     do
253     {
254         System.out.printf("\n <----Enter the Type Of Account-----> ");
255         System.out.print("\n 1.Savings\n 2.Current\n Choice: ");
256         k=get.nextInt();
257         switch(k)
258         {
259             case 1: s[savCount++]=new SavAcc();
260             break;
261             case 2: c[curCount++]=new CurAcc();
262             break;
263         }
264     }

```

P5:Output

```
Enter the No Of Accounts(MAX is 20): 2
<----Enter the Type Of Account---->
1.Savings
2.Current
Choice: 1

<----Welcome to Savings Account, Enter the below details to create an Account---->
Name: Amarnath
Your Account No is SBE-SAV-Amarnath
Do you wish to deposit money now? Press 1 to deposit : 1

Enter the amount to deposit: 10000
10000.0000 amount is Credited, Total balance = 10000.0000
Thank you are creating An Account!

Enter the choice:
1.Deposit
2.Withdraw
3.Display Balance
4.Interest Display
5.Exit
Choice: 2

Enter the amount to Withdraw: 5000
5000.0000 amount was Debited, Total balance = 5000.0000
Do you wish to continue? Press 1 to continue :4

<----Enter the Type Of Account---->
1.Savings
2.Current
Choice: 2

<----Welcome to Currents Account, Enter the below details to create an Account---->
Name: Gils
Your Account No is SBE-CUR-Gils
You need Have min balance of 1000.0 Rupees, else you will be charged 50.0 every month
Deposit Now!
```

```
Deposit Now!
Enter the amount to deposit: 1001
1001.0000 amount is Credited, Total balance = 1001.0000
Thank you are creating An Account!
```

```
Enter the choice:
1.Deposit
2.Withdraw
3.Display Balance
4.Exit
Choice: 2

Enter the amount to Withdraw: 500
500.0000 amount was Debited, Total balance = 501.0000
You need Have min balance of 1000.0 Rupees, else you will be charged 50.0
Deposit Now!
Press 1 To deposit or you will be charged with50.0
Choice: 2
```

```
Do you wish to continue? Press 1 to continue :1
```

```
Enter the choice:
1.Deposit
2.Withdraw
3.Display Balance
4.Exit
Choice: 3

Total balance = 451.0000
Do you wish to continue? Press 1 to continue :1
```

```
Enter the choice:
1.Deposit
2.Withdraw
3.Display Balance
4.Exit
Choice: 1

Enter the amount to deposit: 1000
1000.0000 amount is Credited, Total balance = 1451.0000
Do you wish to continue? Press 1 to continue :1
```

```
Enter the choice:
1.Deposit
```

```
1.Deposit
2.Withdraw
3.Display Balance
4.Exit
Choice: 4
```