

C:\java lab\Solidmain.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

ActorMain.java CmdArray.java Prog2.java Solidmain.java Personmain.java

```
1  import java.util.Scanner;
2  abstract class Solid{
3      float r;
4      float h;
5  }
6  class Cylinder extends Solid{
7      double area;
8      double volume;
9
10     void calAreaVolume(){
11         Scanner sc = new Scanner(System.in);
12         System.out.println("Enter the value of r and h:");
13         r = sc.nextFloat();
14         h = sc.nextFloat();
15         volume = ((3.14*3.14)*r*h);
16         area = (2*(3.14)*r*(r+h));
17         System.out.println("The area of the cylinder:"+area);
18         System.out.println("The volume of the cylinder:"+volume);
19     }
20 }
21 class Sphere extends Solid{
22     double area;
23     double volume;
24     void calAreaVolume1(){
25         Scanner sc = new Scanner(System.in);
26         System.out.println("Enter the value of r:");
27         r = sc.nextFloat();
28         volume = (4*3.14*r*r*r)/3;
29         area = 4*3.14*r*r;
30         System.out.println("The area of the sphere:"+area);
31         System.out.println("The volume of the sphere:"+volume);
32     }
33 }
34 class Cone extends Solid{
35     double area;
36     double volume;
37     void calAreaVolume2(){
38         Scanner sc = new Scanner(System.in);
39         System.out.println("Enter the value of r and h:");
40         r = sc.nextFloat();
41         h = sc.nextFloat();
```

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```
31     System.out.println("The volume of the sphere:"+volume);
32 }
33 }
34 class Cone extends Solid{
35     double area;
36     double volume;
37     void calAreaVolume2(){
38         Scanner sc = new Scanner(System.in);
39         System.out.println("Enter the value of r and h:");
40         r = sc.nextFloat();
41         h = sc.nextFloat();
42         volume = (3.14*r*r*h)/3;
43         area = 3.14*r*(r + Math.sqrt(r*r + h*h));
44         System.out.println("The area of the cone:"+area);
45         System.out.println("The volume of the cone:"+volume);
46     }
47 }
48 class Solidmain{
49     public static void main(String args[]){
50         int option;
51         do{
52             System.out.println("Enter the option: \n1.Cylinder \n2.Sphere \n3.Cone \n4.Exit \n");
53             Scanner sc = new Scanner(System.in);
54             option = sc.nextInt();
55
56             switch(option){
57                 case 1:Cylinder C = new Cylinder();
58                     C.calAreaVolume();
59                     break;
60                 case 2:Sphere S = new Sphere();
61                     S.calAreaVolume1();
62                     break;
63                 case 3:Cone C1 = new Cone();
64                     C1.calAreaVolume2();
65                     break;
66                 case 4:System.exit(0);
67                     break;
68             }
69         }while (option!=4);
70     }
71 }
```

Command Prompt  
Microsoft Windows [Version 10.0.18362.1016]  
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C:\Users\arpit>cd..

C:\Users>cd..

C:\>cd java lab

C:\java lab>javac Solidmain.java

C:\java lab>java Solidmain

Enter the option:

- 1.Cylinder
- 2.Sphere
- 3.Cone
- 4.Exit

3

Enter the value of r and h:

1

2

The area of the cone:10.16125344934934

The volume of the cone:2.0933333333333333

Enter the option:

- 1.Cylinder
- 2.Sphere
- 3.Cone
- 4.Exit

2

Enter the value of r:

10

The area of the sphere:1256.0

The volume of the sphere:4186.666666666667

Enter the option:

- 1.Cylinder
- 2.Sphere
- 3.Cone
- 4.Exit

4

C:\java lab>\_

C:\java lab\Personmain.java - Notepad++

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ActorMain.java CmdArray.java Prog2.java Solidmain.java Personmain.java

```
1  import java.util.Scanner;
2  class Person{
3      String name;
4      Scanner sc = new Scanner(System.in);
5      void Details1(){
6          System.out.println("Enter the name:");
7          name = sc.next();
8          System.out.println("Name:"+name);
9      }
10 }
11 class Employee extends Person{
12     int emp_id;
13     Scanner sc = new Scanner(System.in);
14     void Details2(){
15         Details1();
16         System.out.println("Enter the employee Id:");
17         emp_id = sc.nextInt();
18         System.out.println("Id:"+emp_id);
19     }
20 }
21 class Student extends Person{
22     int st_id;
23     Scanner sc = new Scanner(System.in);
24     void Details3(){
25         Details1();
26         System.out.println("Enter the student Id:");
27         st_id = sc.nextInt();
28         System.out.println("Id:"+st_id);
29     }
30 }
31 class Teaching extends Employee{
32     double sal;
33     Scanner sc = new Scanner(System.in);
34     void Details4(){
35         Details2();
36         System.out.println("Enter the teaching employee salary:");
37         sal = sc.nextDouble();
38         System.out.println("Salary:"+sal);
39     }
40 }
41 class Nonteaching extends Employee{
```



```

43 Scanner sc = new Scanner(System.in);
44 void Details5(){
45     Details2();
46     System.out.println("Enter the non-teaching employee salary:");
47     sal = sc.nextDouble();
48     System.out.println("Salary:"+sal);
49 }
50 }
51 class UG extends Student{
52     int sem;
53     Scanner sc = new Scanner(System.in);
54     void Details6(){
55         Details3();
56         System.out.println("Enter the semester for UG students:");
57         sem = sc.nextInt();
58         System.out.println("Semester:"+sem);
59     }
60 }
61 class PG extends Student{
62     int sem;
63     Scanner sc = new Scanner(System.in);
64     void Details7(){
65         Details3();
66         System.out.println("Enter the semester for PG students:");
67         sem = sc.nextInt();
68         System.out.println("Semester:"+sem);
69     }
70 }
71 class Personmain{
72     public static void main(String args[]){
73         Teaching T1 = new Teaching();
74         T1.Details4();
75         Nonteaching N1 = new Nonteaching();
76         N1.Details5();
77         UG U1 = new UG();
78         U1.Details6();
79         PG P1 = new PG();
80         P1.Details7();
81     }
82 }

```

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C:\Users\arpit>cd..

C:\Users>cd..

C:\>cd java lab

C:\java lab>javac Personmain.java

C:\java lab>java Personmain

Enter the name:

aaa

Name:aaa

Enter the employee Id:

123

Id:123

Enter the teaching employee salary:

10000

Salary:10000.0

Enter the name:

bbb

Name:bbb

Enter the employee Id:

456

Id:456

Enter the non-teaching employee salary:

5000

Salary:5000.0

Enter the name:

ccc

Name:ccc

Enter the student Id:

789

Id:789

Enter the semester for UG students:

3

Semester:3

Enter the name:

ddd

Name:ddd

Enter the student Id:

543

Id:543

Enter the semester for PG students:

5

Semester:5