

EXTRA PROGRAMS

Program – 1

```
C:\Users\91944\OneDrive\Desktop\OO\LAB\Lab_8\Personmain.java - Sublime Text (UNREGISTERED)
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Solidmain.java x Personmain.java x
1 import java.util.Scanner;
2
3 class Person
4 {
5     String name;
6     int age;
7     Scanner ss = new Scanner(System.in);
8
9     void accept()
10    {
11        System.out.println("Enter the NAME : ");
12        name = ss.next();
13        System.out.println("Enter the AGE : ");
14        age = ss.nextInt();
15    }
16
17    void display()
18    {
19        System.out.println("NAME : "+name);
20        System.out.println("AGE : "+age);
21    }
22 }
23
24 class Employee extends Person
25 {
26     int salary;
27     Scanner ss = new Scanner(System.in);
28
29     void accept()
30     {
31         super.accept();
32         System.out.println("Enter the SALARY : ");
33         salary = ss.nextInt();
34     }
35
36     void display()
```

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Solidmain.java x Personmain.java x
37    {
38        super.display();
39        System.out.println("SALARY : "+salary);
40    }
41 }
42
43 class Student extends Person
44 {
45     int fees;
46     Scanner ss = new Scanner(System.in);
47
48     void accept()
49     {
50         super.accept();
51         System.out.println("Enter the FEES : ");
52         fees = ss.nextInt();
53     }
54
55     void display()
56     {
57         super.display();
58         System.out.println("FEES : "+fees);
59     }
60 }
61
62 class Teaching extends Employee
63 {
64     String subject;
65     Scanner ss = new Scanner(System.in);
66
67     void accept()
68     {
69         super.accept();
70         System.out.println("Enter the SUBJECT TAUGHT : ");
71         subject = ss.next();
72     }
73
74     void display()
```

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Solidmain.java x Personmain.java x
74     void display()
75     {
76         super.display();
77         System.out.println("SUBJECT TAUGHT : "+subject);
78     }
79 }
80
81 class Non_Teaching extends Employee
82 {
83     String job;
84     Scanner ss = new Scanner(System.in);
85
86     void accept()
87     {
88         super.accept();
89         System.out.println("Enter the JOB : ");
90         job = ss.next();
91     }
92
93     void display()
94     {
95         super.display();
96         System.out.println("JOB : "+job);
97     }
98 }
99
100 class Ug extends Student
101 {
102     int no_of_sub;
103     Scanner ss = new Scanner(System.in);
104
105     void accept()
106     {
107         super.accept();
108         System.out.println("Enter the NUMBER OF SUBJECTS : ");
109         no_of_sub = ss.nextInt();
110     }
111
112     void display()
```

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Solidmain.java x Personmain.java x

111
112     void display()
113     {
114         super.display();
115         System.out.println("NUMBER OF SUBJECTS : "+no_of_sub);
116     }
117 }
118
119 class Pg extends Student
120 {
121     String sub_of_spec;
122     Scanner ss = new Scanner(System.in);
123
124     void accept()
125     {
126         super.accept();
127         System.out.println("Enter the SUBJECT OF SPECIALIZATION : ");
128         sub_of_spec = ss.next();
129     }
130
131     void display()
132     {
133         super.display();
134         System.out.println("NAME : "+name);
135         System.out.println("FEES : "+fees);
136         System.out.println("SUBJECT OF SPECIALIZATION : "+sub_of_spec);
137     }
138 }
139
```

```
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Solidmain.java x Personmain.java x

140 class Personmain
141 {
142     public static void main(String[] args)
143     {
144         System.out.println("\n<-----ENTER TEACHING EMPLOYEE DETAILS----->");
145         Teaching t = new Teaching();
146         t.accept();
147         System.out.println("\n<-----ENTER NON-TEACHING EMPLOYEE DETAILS----->");
148         Non_Teaching nt = new Non_Teaching();
149         nt.accept();
150         System.out.println("\n<-----ENTER UG STUDENT DETAILS----->");
151         Ug u = new Ug();
152         u.accept();
153         System.out.println("\n<-----ENTER PG STUDENT DETAILS----->");
154         Pg p = new Pg();
155         p.accept();
156
157         System.out.println("\n\n<-----DETAILS OF TEACHING EMPLOYEE----->");
158         t.display();
159         System.out.println("\n<-----DETAILS OF NON-TEACHING EMPLOYEE----->");
160         nt.display();
161         System.out.println("\n<-----DETAILS OF UG STUDENT----->");
162         u.display();
163         System.out.println("\n<-----DETAILS OF PG STUDENT----->");
164         p.display();
165     }
166 }
```

OUTPUT:

```
C:\Users\91944\OneDrive\Desktop\OOJLAB\Lab_8>java Personmain

<-----ENTER TEACHING EMPLOYEE DETAILS----->
Enter the NAME :
aaa
Enter the AGE :
40
Enter the SALARY :
25000
Enter the SUBJECT TAUGHT :
OOJ

<-----ENTER NON-TEACHING EMPLOYEE DETAILS----->
Enter the NAME :
bbb
Enter the AGE :
35
Enter the SALARY :
30000
Enter the JOB :
Maths

<-----ENTER UG STUDENT DETAILS----->
Enter the NAME :
ccc
Enter the AGE :
20
Enter the FEES :
80000
Enter the NUMBER OF SUBJECTS :
8

<-----ENTER PG STUDENT DETAILS----->
Enter the NAME :
ddd
Enter the AGE :
25
Enter the FEES :
150000
Enter the SUBJECT OF SPECIALIZATION :
```

```
Command Prompt

Astrophysics

<-----DETAILS OF TEACHING EMPLOYEE----->
NAME : aaa
AGE : 40
SALARY : 25000
SUBJECT TAUGHT : OOI

<-----DETAILS OF NON-TEACHING EMPLOYEE----->
NAME : bbb
AGE : 35
SALARY : 30000
JOB : Maths

<-----DETAILS OF UG STUDENT----->
NAME : ccc
AGE : 20
FEES : 80000
NUMBER OF SUBJECTS : 8

<-----DETAILS OF PG STUDENT----->
NAME : ddd
AGE : 25
FEES : 150000
NAME : ddd
FEES : 150000
SUBJECT OF SPECIALIZATION : Astrophysics

C:\Users\91944\OneDrive\Desktop\OOJLAB\Lab_8>
```

PROGRAM – 2

INPUT:

```
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Solidmain.java x Personmain.java x

1 import java.util.Scanner;
2
3 abstract class Solid
4 {
5     double r, h, area, vol;
6     double pi = 22.0 / 7;
7     abstract void printareavol();
8 }
9
10 class Cylinder extends Solid
11 {
12     void printareavol()
13     {
14         Scanner ss = new Scanner(System.in);
15         System.out.println("\n-----CYLINDER DETAILS-----\n");
16         System.out.println("Enter the RADIUS : ");
17         r = ss.nextDouble();
18         System.out.println("Enter the HEIGHT : ");
19         h = ss.nextDouble();
20         area = (2 * pi * r * r) + (2 * pi * r * h);
21         vol = pi * r * r * h;
22         System.out.printf("\nSURFACE AREA %.3f sq. units \n", area);
23         System.out.printf("\nVOLUME %.3f cube units \n", vol);
24         System.out.println("\n<----->\n");
25     }
26 }
27
28 class Cone extends Solid
29 {
30     void printareavol()
31     {
32         Scanner ss = new Scanner(System.in);
33         System.out.println("\n-----CONE DETAILS-----\n");
34         System.out.println("Enter the RADIUS : ");
35         r = ss.nextDouble();
36         System.out.println("Enter the HEIGHT : ");
```

```
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Solidmain.java x Personmain.java x
37     h = ss.nextDouble();
38     area = (pi * r * r) + ((pi * r) * (Math.sqrt(r*r+h*h)));
39     vol = (1.0 / 3) * pi * r * r * h;
40     System.out.printf("\nSURFACE AREA %.3f sq. units \n", area);
41     System.out.printf("\nVOLUME %.3f cube units \n", vol);
42     System.out.println("\n<----->\n");
43 }
44 }
45
46 class Sphere extends Solid
47 {
48     void printareavol()
49     {
50         Scanner ss = new Scanner(System.in);
51         System.out.println("\n----SPHERE DETAILS-----\n");
52         System.out.println("Enter the RADIUS : ");
53         r = ss.nextDouble();
54         area = (4 * pi * r * r);
55         vol = (4.0 / 3) * pi * r * r * r;
56         System.out.printf("\nSURFACE AREA %.3f sq. units \n", area);
57         System.out.printf("\nVOLUME %.3f cube units \n", vol);
58         System.out.println("\n<----->\n");
59     }
60 }
61
62 class Solidmain
63 {
64     public static void main(String[] args)
65     {
66         Cylinder c = new Cylinder();
67         c.printareavol();
68         Cone cc = new Cone();
69         cc.printareavol();
70         Sphere s = new Sphere();
71         s.printareavol();
72     }
73 }
```

OUTPUT:

```
Command Prompt
C:\Users\91944\OneDrive\Desktop\OOJLAB\Lab_8>java Solidmain

----CYLINDER DETAILS-----

Enter the RADIUS :
3
Enter the HEIGHT :
5

SURFACE AREA 150.857 sq. units

VOLUME 141.429 cube units

<----->

----CONE DETAILS-----

Enter the RADIUS :
3
Enter the HEIGHT :
5

SURFACE AREA 83.263 sq. units

VOLUME 47.143 cube units

<----->

----SPHERE DETAILS-----

Enter the RADIUS :
2

SURFACE AREA 50.286 sq. units

VOLUME 33.524 cube units

<----->
```