

```
1 import java.util.*;
2
3 public class StuffContainer3
4 {
5     private ArrayList<Thing> container;
6
7     public StuffContainer3()
8     {
9         this(5);
10    }
11
12    public StuffContainer3(int capacity)
13    {
14        container = new ArrayList<Thing>(capacity);
15    }
16
17    public int getNumberOfThings()
18    {
19        return container.size();
20    }
21
22    public void addThing(Thing newThing)
23    {
24        container.add(newThing);
25    }
26
27    public Thing getThing(int index)
28    {
29        return container.get(index);
30    }
31
32    public void sort()
33    {
34        Collections.sort(container);
```

```
35     }
36
37     public static void main(String[] args)
38     {
39         StuffContainer3 myStuff = new StuffContainer3(10);
40         Thing disk = new RoundThing("Blue", 10);
41         myStuff.addThing(disk);
42         Thing square = new SquareThing("Red", 8);
43         myStuff.addThing(square);
44         Thing block = new RectangularThing("Green", 10, 3);
45         myStuff.addThing(block);
46         Thing d2 = new RoundThing("Yellow", 2);
47         myStuff.addThing(d2);
48         for (int i = 0; i < myStuff.getNumberOfThings(); i++)
49             System.out.println(myStuff.getThing(i));
50     }
51 }
```

```
1 import java.util.Scanner;
2
3 public class StuffApplication3
4 {
5     public static void main(String args[])
6     {
7         StuffContainer3 myStuff = new StuffContainer3(5);
8         Scanner input = new Scanner(System.in);
9         char type;
10        String color;
11        int radius, length, width;
12        while (input.hasNext())
13        {
14            type = input.next().charAt(0);
15            color = input.next();
16            if (type == 'C')
17            {
18                radius = input.nextInt();
19                myStuff.addThing(new RoundThing(color, radius));
20            }
21            else if(type == 'S')
22            {
23                length = input.nextInt();
24                myStuff.addThing(new SquareThing(color, length));
25            }
26            else if(type == 'R')
27            {
28                length = input.nextInt();
29                width = input.nextInt();
30                myStuff.addThing(new RectangularThing(color, length, width));
31            }
32            else
33                System.out.println("Invalid input");
34        }
```

```
35     for (int i = 0; i < myStuff.getNumberOfThings(); i++)
36         System.out.println(myStuff.getThing(i));
37
38     myStuff.sort();
39     System.out.println("\nAnd after sorting:\n");
40
41     for (int i = 0; i < myStuff.getNumberOfThings(); i++)
42         System.out.println(myStuff.getThing(i));
43
44 }
45 }
```