

```
1  abstract class Widget
2  {
3      String color;
4      abstract int getMass();
5      public String toString()
6      {
7          return getClass().getName() + ";" + color + "," + getMass();
8      }
9  }
10 class WidgetA extends Widget
11 {
12     final static int MASS = 4;
13     WidgetA(String color)
14     {
15         this.color = color;
16     }
17     int getMass()
18     {
19         return MASS;
20     }
21 }
22 class WidgetB extends Widget
23 {
24     final static int MASS = 1;
25     WidgetB(String color)
26     {
27         this.color = color;
28     }
29     int getMass()
30     {
31         return MASS;
32     }
33 }
34 class WidgetC extends Widget
35 {
36     final static int MASS = 5;
37     WidgetC(String color)
38     {
39         this.color = color;
40     }
41     int getMass()
42     {
43         return MASS;
44     }
45 }
46 class WidgetD extends Widget
47 {
48     final static int MASS = 17;
49     WidgetD(String color)
50     {
51         this.color = color;
52     }
53     int getMass()
54     {
55         return MASS;
56     }
57 }
58
59 class WidgetTypes
60 {
61     static int NUMWIDGETS = 6;
62     public static void main(String args[])
63     {
64         Widget widgets[] = new Widget[NUMWIDGETS];
65         widgets[0] = new WidgetC("RED");
66         widgets[1] = new WidgetA("GREEN");
67         widgets[2] = new WidgetD("YELLOW");
68         widgets[3] = new WidgetB("MAGENTA");
69         widgets[4] = new WidgetA("BLACK");
70         widgets[5] = new WidgetC("WHITE");
71
72         int totalMass = 0;
73         int i;
```

```
74         for (i=0; i<NUMWIDGETS; i++)
75         {
76             Widget w = widgets[i];
77             System.out.println(w);
78             totalMass += w.getMass();
79         }
80     System.out.println("Total Mass = "+totalMass);
81 }
82 }
83 }
```