Homework Turnin

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Section: 6G
Course: TJHSST APCS 2016-17
Assignment: 08-08

Receipt ID: 6de306668d61dd13452c3b9dc0a9143b

Turnin Successful!

The following file(s) were received:

HashingAWidget.java   (2302 bytes)

```java
1.  //Name:                  Date:
2.  import java.util.*;
3.  public class HashingAWidget
4.  {
5.      public static void main(String[] args)
6.      {
7.          Set<Widget> tSet = new TreeSet<Widget>();
8.          Set<Widget> hSet = new HashSet<Widget>();
9.
10.         Widget a = new Widget(2,3);    //same or different?
11.         Widget b = new Widget(2,5);
12.         Widget c = new Widget(1,3);
13.      // c = b;
14.
15.         tSet.add(a);
16.         tSet.add(b);
17.         tSet.add(c);
18.
19.         hSet.add(a);
20.         hSet.add(b);
21.         hSet.add(c);
22.
23.         System.out.println(a.hashCode()+ " "+b.hashCode() + " " + c.hashCode());
24.
25.         System.out.println("TreeSet:  " + tSet);
26.         System.out.println("HashSet:  " + hSet);
27.     }
28. }
29.
30. /************************************
31. Modify the Widget class so that it hashes on its
32. values, not on its address.  Be sure that compareTo(),
33. equals(Object) and hashCode() agree with each other.
34. ************************************/
35.
36. class Widget implements Comparable<Widget>
37. {
38.     private int myPounds, myOunces;
39.     public Widget()
40.     {
41.         myPounds = myOunces = 0;
42.     }
43.     public Widget(int x)
44.     {
45.         myPounds = x;
46.         myOunces = 0;
47.     }
48.     public Widget(int x, int y)
49.     {
50.         myPounds = x;
```

```
 51.        myOunces = y;
 52.     }
 53.     public Widget(Widget arg)
 54.     {
 55.        myPounds = arg.getPounds();
 56.        myOunces = arg.getOunces();
 57.     }
 58.     public int getPounds()
 59.     {
 60.        return myPounds;
 61.     }
 62.     public int getOunces()
 63.     {
 64.        return myOunces;
 65.     }
 66.     public void setPounds(int x)
 67.     {
 68.        myPounds = x;
 69.     }
 70.     public void setOunces(int x)
 71.     {
 72.        myOunces = x;
 73.     }
 74.     public int compareTo(Widget w)
 75.     {
 76.        if(myPounds>w.getPounds())
 77.           return 1;
 78.        else if(myPounds<w.getPounds())
 79.           return -1;
 80.        else if(myOunces>w.getOunces())
 81.           return 1;
 82.        else if(myOunces<w.getOunces())
 83.           return -1;
 84.        else
 85.           return 0;
 86.     }
 87.     public boolean equals(Widget arg)
 88.     {
 89.        if(myPounds==arg.getPounds()&&myOunces==arg.getOunces())
 90.           return true;
 91.        else
 92.           return false;
 93.     }
 94.     public String toString()
 95.     {
 96.        return myPounds + " lbs. " + myOunces + " oz.";
 97.     }
 98.     public boolean equals(Object arg)
 99.     {
100.        return this.equals((Widget)arg);
101.     }
102.     public int hashCode()
103.     {
104.        return this.toString().hashCode();
105.     }
106. }
```