

COMP 1210 (1210-Fall-2018): Project 04 Completed Code (max 10 submits), by Jacob Stockwell

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Assignment	COMP 1210 (1210-Fall-2018): Project 04 Completed Code (max 10 submits) try #4
Name	Jacob Stockwell (jts0098)
Partners	Jacob Stockwell (jts0098)
Submitted	09/21/18 03:16PM, 8 hrs, 42 mins early
Total Score	85.0/100.0

Score Summary

Design/Readability	/15.0	<Awaiting Staff>
Style/Coding:	20.0/20.0	
Correctness/Testing:	65.0/65.0	

Final score: **85.0/100.0**

Position in class: 

File	Remarks	Deductions
Icosahedron.java	0	0.0
IcosahedronApp.java	0	0.0

Icosahedron.java

```

1  import java.text.DecimalFormat;
2  /**
3   *
4   * @Author: Jacob Stockwell
5   * @version: 09/21/18
6   *
7   * Description: This program is designed to create classes for
8   * the Isahedron App that stores the Label, color and edge
9   */
10
11 public class Icosahedron
12 {
13     /**
14     *
15     * @param args not used
16     *
17     */
18
19     //fields
20     private String label = "";
21     private String color = "";
22     private double edge = 0;
23
24
25     // constructor
26
27     /**
28      *Template for creating a new Icosahedron.

```

```
28
29     *@param labelIn for setLabel
30     *@param colorIn for setColor
31     *@param edgeIn for setEdge
32 */
33
34 public Icosahedron(String labelIn, String colorIn, double edgeIn)
35 {
36     setLabel(labelIn);
37     setColor(colorIn);
38     setEdge(edgeIn);
39
40
41 }
42
43 //methods
44
45 /**
46  *@return label to get label
47 */
48 public String getLabel()
49 {
50
51     return label;
52 }
53
54 /**
55  *@return isSet to make sure label is set
56  *@param labelIn to get new label
57 */
58
59 public boolean setLabel(String labelIn)
60 {
61     boolean isSet = false;
62     if (labelIn != null)
63     {
64         label = labelIn;
65         isSet = true;
66
67     }
68     return isSet;
69
70 }
71
72 /**
73  *@return color to get color
74 */
75
76 public String getColor()
77 {
78
79
80     return color;
81 }
82
83 /**
84  *@return isSet to make sure color is set
85  *@param colorIn to get new color
86 */
87
88 public boolean setColor(String colorIn)
89 {
90     boolean isSet = false;
91     if (colorIn != null)
```

```
92     {
93         color = colorIn;
94         isSet = true;
95     }
96     return isSet;
97 }
98
99
100 /**
101  *@return edge to retrieve number of edges
102  */
103
104 public double getEdge()
105 {
106
107     return edge;
108 }
109
110
111 /**
112  *@return isSet to make sure edge is set
113  *@param edgeIn to set the edge
114  */
115
116 public boolean setEdge(double edgeIn)
117 {
118     boolean isSet = false;
119     if (edgeIn > 0)
120     {
121         edge = edgeIn;
122         isSet = true;
123     }
124     return isSet;
125 }
126
127
128
129 /**
130  *@return sA to calculate the Surface Area
131  */
132
133 public double surfaceArea()
134 {
135     double sA = (5 * Math.sqrt(3) * Math.pow(edge, 2));
136
137     return sA;
138 }
139
140 /**
141  *@return volume to calculate the volume
142  */
143
144 public double volume()
145 {
146     double volume = (5 * (3 + Math.sqrt(5)) / 12) * Math.pow(edge, 3);
147
148     return volume;
149 }
150
151 /**
152  *@return surfaceToVolumeRatio to calculate Surface to volume
153  */
154
155 public double surfaceToVolumeRatio()
```

```

156     {
157
158         double surfaceToVolume = surfaceArea() / volume();
159
160         return surfaceToVolume;
161     }
162
163     /**
164     * @return output of the user info
165     *
166     */
167
168     public String toString()
169     {
170         DecimalFormat df = new DecimalFormat("#,##0.0#####");
171
172         String output = "Icosahedron \"" + label + "\"" + " is " + "\""
173             + color + "\"" + " with 30" + " edges of length " + edge + " units.\n"
174             + "\tsurface area = " + df.format(surfaceArea()) + " square units\n"
175             + "\tvolume = " + df.format(volume()) + " cubic units\n"
176             + "\tsurface/volume ratio = " + df.format(surfaceToVolumeRatio());
177
178
179         return output;
180     }
181
182 }

```

IcosahedronApp.java

```

1  import java.util.Scanner;
2  /**
3   * @Author: Jacob Stockwell
4   * @version: 09/21/18
5   *
6   * Description: This program is designed to create classes for
7   * the Isahedron App that stores the label, color and edge
8   */
9
10 public class IcosahedronApp
11 {
12     /**
13     *
14     * @param args not used.
15     */
16
17     public static void main(String[] args)
18     {
19         //decloration for user input
20         String label, color;
21         double edge = 0;
22         Scanner userInput = new Scanner(System.in);
23
24
25         //input
26         System.out.print("Enter label, color, and edge"
27             + " length for an icosahedron.\n"
28             + "\tlabel: ");
29         label = userInput.nextLine();
30
31
32         System.out.print("\tcolor: ");
33         color = userInput.nextLine();
34

```

```
35     System.out.print("\tedge: ");
36     edge = userInput.nextDouble();
37
38     if (edge <= 0)
39     {
40         System.out.println("Error: edge must be greater than 0.");
41     }
42
43     else
44     {
45         Icosahedron i = new Icosahedron(label, color, edge);
46
47         System.out.println("\n" + i);
48     }
49 }
50 }
51 }
```

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