CSCI 2990 ASSIGNMENT 6 SPRING 2009

DUE APRIL 28

In Java create a class called Hexahedron that was created in CSCI 1990 last fall in Python. The class has the **double** attributes length, width, and height (the dimensions of the **hexahedron). It has the following methods:**

1. A **constructor** that initializes **length**, **width**, and **height** to 0.0.
2. **setlength** that lets any program with an instance of this class set the length of the hexahedron. However, if there is an attempt to set **length** to a value less than 0, it prints an error message and sets the **length** to zero.
3. **setwidth** that lets any program with an instance of this class set the width of the hexahedron. However, if there is an attempt to set **width** to a value less than 0, it prints an error message and sets the **width** to zero.
4. **setheight** that lets any program with an instance of this class set the height of the hexahedron. However, if there is an attempt to set **height** to a value less than 0, it prints an error message and sets the **height** to zero.
5. **getlength** returns the value of **length**.
6. **getwidth** returns the value of **width**.
7. **getheight** returns the value of **height**.
8. **calculateVolume** that has no parameters and outputs the volume of the hexahedron (length times width times height).
9. **calculateSurfaceArea** that has no parameters and outputs the surface area of the hexahedron which is 2 times (length times width + length times height + width times height).

Now create a client that should do the following:

1. Create an instance of **Hexahedron**.
2. Output **length**, **width**, and **height** to demonstrate that they have been initialized to zero.
3. Ask the user to input **length**, **width**, and **height**.
4. Call **setlength**, **setwidth**, and **setheight** to set **length**, **width**, and **height** to the values just input.
5. Call **getlength**, **getwidth**, and **getheight** and then output the value they return to verify that **setlength**, **setwidth**, and **setheight** worked properly.
6. Call **calculateVolume**.
7. Call **calculateSurfaceArea**.