Point3D Program

Design And Implementation

The program consists of two Class files, only one of which is run. The one being run performs some basic mathematics, often using the functions of the class not being run, printing both the results and the figures used to discover that result.

Testing

Initially all the testing was done inside the Point3D program, but once I believed that all features that could be implemented I began work on TestPoint3D, using this to test the program, as this was it's stated purpose.

Also worth noting is that Point3D's distance method accepts double arrays. I meant to use Point3D instances as the paramters, but due to the vague wording of the assignment I wasn't sure if this was the correct way to do so. This is an easy fix however, as I merely need to change all the calls to distance from Point3D.distance(double[]) and Point3D.distance(double[], double[]) to Point3D.distance(Point3D) and Point3D.distance(Point3D, Point3D) and change all code using the point arrays from point[integer] to getX. Such a fix would also necessitate the adding of setters in the code, which is easily done by adding “public void setX(double x){this.x = x;}” to the Point3D class (Changing the x where necessary)

Source Code Files

Point3D.java – The code for Point3D.class, which contains the mathematics for setting up a 3D point, as well as the mathematics to figure out the distance between both the current point and a second point, and two entirely different points, as well as getter methods for the three point fields, x, y, and z.

TestPoint3D.java – The code for the Test Point3D.class, which tests the functionality of the Point3D class, as well as creating 10 instances of the Point3D object, and then discovering and printing the max and min distances between those points.

Supporting Files

None, unless Point3D.class is counted because it isn't run, in which case it's functionality is described above.

Use Case

The user places both Point3D.class and TestPoint3D.class in the same directory and then runs TestPoint3D from either the command prompt, if using windows, the terminal, if using Linux, BSD or OS X, or by running TestPoint3D from an IDE, making sure that Point3D.class is still in the same directory as TestPoint3D.class