Introduction to Java 3D coding assignment

General Directions: Use an implementation of the Java 3D API (http://java.sun.com/javase/technologies/desktop/java3d/forDevelopers/J3D_1_3_API/j3dapi/index.html) to solve the following problems in Java code.

Notes:

- The Java 3D "reference" implementation can be downloaded here: http://java3d.j3d.org/download.html
- With only a couple of exceptions, I have expressly avoided using terminology that implies any portion or object in the Java 3D API … If you know the API these descriptions may sound forced or inexact. That is by design.
- You may spend as much or as little time on the assignment as you desire. I have scoped it such that I would expect it to take approx 4 hours to complete with reasonable knowledge of general 3D terminology.
- Should there be any items that you do not complete or cannot figure out completely, feel free to write down what you do know about it and any ideas on how you might solve the issues.

- You will be evaluated on perceived ability to:
    1. Learn and access the Java 3D API.
    2. Plan and manage Java 3D scene graph.
    3. Ability to communicate your thought and learning process.
    4. Ability to creatively display your new-found knowledge.

Assignment:

1. Create a world in the Java 3D space
2. Draw a "wireframe" outline of a cube, size 20x20x20 units and that "sits" on the XY plane (Z+ == up), centered on the XY origin. You may use the Cube primitive or construct the wire frame yourself.
3. At each of the 8 corners place a sphere with the attributes as listed:
    a. Red in color, no shadows
    b. Blue in color, shiny in look
    c. White in color, 50% transparent.
    d. Uses the following image as a "paint": http://www.petronworld.com/prodserv/software/images/rf_3d_2sm.png
    e. For the four remaining vertices, choose some attributes to display what you know/have learned about modifying the look of Java 3D objects.
4. In the center of this cube, create a single cube of dimension 2units in all 3 dimensions.
5. On each of the 6 sides to this 2-unit cube create a 4-sided cone that stands 10 units high, projecting out at a right angle to the its respective side.
6. Place the camera position in any position where the entire 20x20x20 world is visible.
7. Draw a relational diagram of the scene graph components. (Pen & paper is fine).
8. Turn in you java code, along with either an ant build file or eclipse project file, and any notes or descriptions that you wish to make. (Code comments are acceptable).
9. If you have any questions or anything is unclear, please note this in your solutions, including any assumptions that your solution may be based upon.