**CSC 1302: PRINCIPLES OF COMPUTER SCIENCE II**

**Lab 6**

**How to Submit**

Please submit your answers to the lab instructor once you have completed.

Failure to submit will result in a **ZERO FOR THIS LAB. NO EXCEPTIONS**.

Consider the following class “Point”:

**public** **class** Point {

**public** **float** x;

**public** **float** y;

**public** **float** z;

**public** Point(**int** inX, **int** inY, **int** inZ)

{

x = inX;

y = inY;

z = inZ;

}

}

In the client code, ArrayList<Point> is created, and 3 points are added to it:

**import** java.util.ArrayList;

**import** java.util.Collections;

**public** **class** Lab6Main {

**public** **static** **void** main(String[] args) {

ArrayList<Point> Points = **new** ArrayList<Point>();

Points.add(**new** Point(1, 2, 3));

Points.add(**new** Point(0, 0, 0));

Points.add(**new** Point(0, 34, 68));

//Collections.*sort*(Points);

}

}

1. Create 2 files – Point.java and Lab6Main.java for Point class and client code; copy the code. Compile and run the project.

2. Uncomment the last line in main() method (Collections.*sort*(Points);) Try compiling and running the code again and analyze the error. Update the Point class so that sorting works properly. Note: you need to implement Comparable<Point> interface. Points should be sorted according to the following logic:

* Compare x coordinates:
  + If they are different, return the difference;
  + If they are equal, compare y coordinates:
    - If they are different, return the difference;
    - If they are equal, compare z coordinates:
      * If they are different, return the difference;
      * If they are equal, objects should be equal (so you can use one difference operation to compare z)