**Greedy Path FAQ**

**How do I compute the Euclidean distance between two points?**

You need to use the formula: https://katie.mtech.edu/classes/csci135-online/assign/input/distance2d.png In this formula p1 and p2 are the coordinates of one point and q1 and q2 are the coordinates of another.  
  
**Does my program find the shortest path visiting all the points?**

Probably not. You might be surprised to learn this [problem](http://en.wikipedia.org/wiki/Travelling_salesman_problem) has been intensely studied for a very long time. Currently we can find good, but not necessarily optimal solutions.

**Should GreedyPath overwrite Path's array of Points?**

No. GreedyPath should add its own array, populated in a greedy fashion, using Path's points.

**Then how do I access a particular point if the** points **array is private in Path?!**

Use the public getPoint(int index) getter method, inherited from Path.

**Omg! What is this NullPointerException?!**

Recall that **arrays are objects**,despite their different-looking instantiation syntax (clip = new double[5] vs. m = new Monomial(), note the use of the new keyword in each). An array instance variable that is declared only will store a null value. Initialize the variable to store a reference to a new array object:

Point[] path; //instance variable, null until initialized

public Path() {

points = new Point[100]; //initialize the object (allocate memory)

}

Also, make sure you haven't RE-declared instance variables in the constructor. Example:

public class Path {

Point[] points; //DECLARES instance variable

public Path() {

~~Point[]~~ points = new Point[100]); //don't RE-declare, just initialize!

Finally, make sure you haven't re-declared the super-class variable in a sub-class, thereby "hiding" it:

public class Path {

Point[] path;

//etc.

}

public class GreedyPath extends Path {

~~Point[] path;~~ //this variable is inherited, call *super* to initialize

//etc.

}