

Advanced Programming

Lab Work 3

Classes and Objects

Assume a class is needed for defining a point position in the first quarter of a plane. This means that the x and y coordinates of the point should be positive. Define the necessary public functions to access the x, and y coordinates of the point. Make sure that the **Set** functions check if the values are positive or not.

Create an instance of the point class. Try accessing the coordinates without using the **set/get** functions.

Now create a class named *line* to define a line segment. Use two member variables of type point to define the coordinate of the two end points of the line segment.

Add two member functions to the line class to find the length and slope of the line. Can you access the coordinates of the end points without using the set/get functions? Why?

Now create a class named PolyLine. Use line class in your new class. Add a member function to find the length of a polyline. The length function should call the length function from the line class.

Create an instance of the class and try it in your main program.

Do you need constructors/destructors in your classes? Why?