

You shall submit a zipped, **and only zipped**, archive of your homework directory, hw2. The directory shall contain, at a minimum, the files `.h` and `.cc`. I will use my own makefile to make your `.cc` file.

I found a really great computational geometry library that stores circles and squares in a very particular way—by keeping up with the points representing each object.

I require additional functionality for a project and am tasking you with the development of the library.

I have included a couple tests demonstrating the interfaces. You should definitely extend these tests. I will. You will also find a `comp_geo` header and source file. I provide those as an interface specification. **YOU** are responsible for files you edit.

The functions should perform as follows:

- **GetCircumference**(x_c : double, y_c : double, x_e : double, y_e : double): double
 - parameters:
 - * x_c : double, x-value of circle's center,
 - * y_c : double, y-value of circle's center,
 - * x_e : double, x-value of point on circle's edge, and
 - * y_e : double, y-value of point on circle's edge
 - **returns**: the floating point value representing the circumference of a circle centered at (x_c, y_c) with a second point on the edge (x_e, y_e) .
- **GetVolume**(x_c : double, y_c : double, x_e : double, y_e : double): double
 - parameters:
 - * x_c : double, x-value of circle's center,
 - * y_c : double, y-value of circle's center,
 - * x_e : double, x-value of point on circle's edge, and
 - * y_e : double, y-value of point on circle's edge
 - **returns**: the floating point value representing the volume of the circle centered at (x_c, y_c) with a second point on the edge (x_e, y_e) .
- **GetPerimeter**(x_{ll} : double, y_{ll} : double, x_{ur} : double, y_{ur} : double): double
 - parameters:
 - * x_{ll} : double, x-value of lower-left point of rectangle,
 - * y_{ll} : double, y-value of lower-left point of rectangle,
 - * x_{ur} : double, x-value of upper-right point of rectangle, and
 - * y_{ur} : double, y-value of upper-right point of rectangle
 - **returns**: the floating point value representing the perimeter of the rectangle

- **GetDistanceSquared**(x_1 : double, y_1 : double, x_2 : double, y_2 : double): double
 - parameters:
 - * x_1 : double, x-value of point 1,
 - * y_1 : double, y-value of point 1,
 - * x_2 : double, x-value of point 2, and
 - * y_2 : double, y-value of point 2
 - **returns**: the floating point value representing the squared distance between points 1 and 2.
- **GetDistance**(x_1 : double, y_1 : double, x_2 : double, y_2 : double): double
 - parameters:
 - * x_1 : double, x-value of point 1,
 - * y_1 : double, y-value of point 1,
 - * x_2 : double, x-value of point 2, and
 - * y_2 : double, y-value of point 2
 - **returns**: the floating point value representing the distance between points 1 and 2.

Late assignments will lose 25% per day late, with no assignment being accepted after 4 days (100% reduction in points).

Check your syllabus for the breakdown of grading.