You shall upload a zipped (AND ONLY ZIPPED) archive to Blackboard containing the directory hw6 and:

- A `hw6/shape.h` file with your includes and class declarations,

- A `hw6/circle.h` file with your includes and class declarations,

- A `hw6/circle.cc` file with your class definitions,

- A `hw6/rectangle.h` file with your includes and class declarations,

- A `hw6/rectangle.cc` file with your class definitions,

- A `hw6/point2d.cc`,

- A `hw6/point2d.h`,

- A `hw6/vector2d.cc`,

- A `hw6/vector2d.h`.

To continue our exploration of computational geometry, we are implementing a group of classes—Shape, Circle, and Rectangle.

They are described in the UML below as well the attached header files.
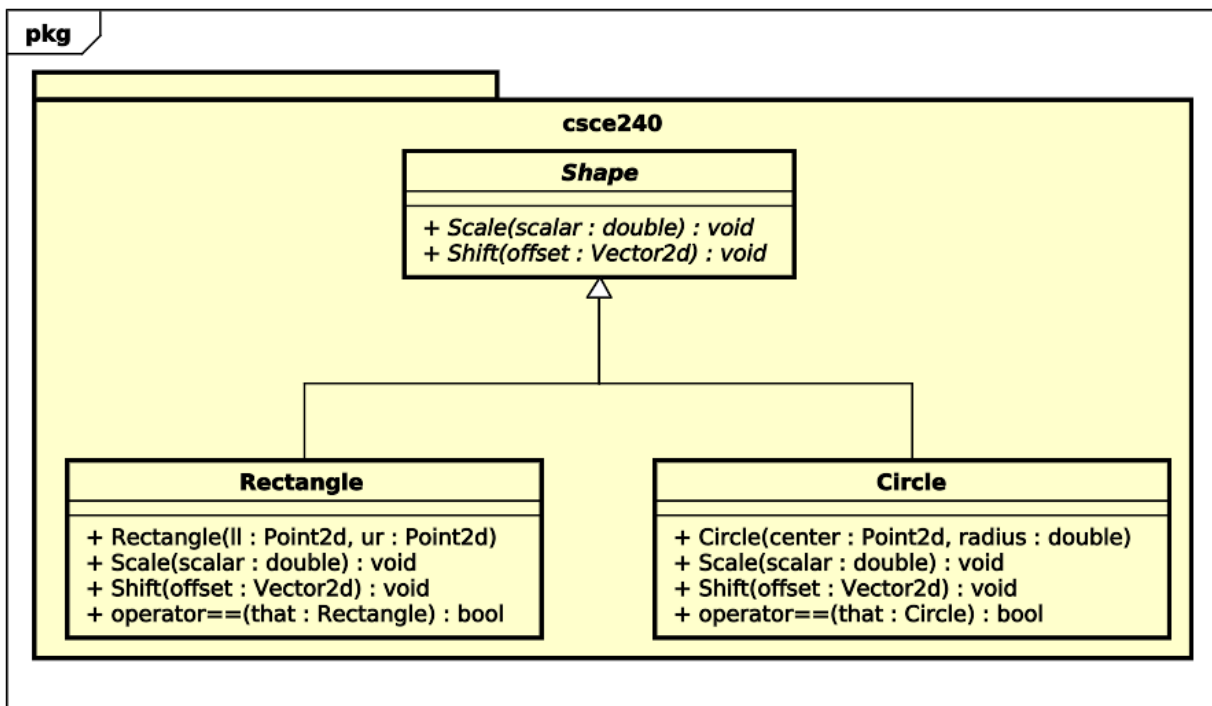
The libraries are further described as follows:

1. **shape.h**

    (a) Shape

        i. Scale—An abstract method provided by child

   ii. Shift—An abstract method provided by child

2. **rectangle.h** and **rectangle.cc**

    (a) Rectangle: a class representing a rectangle in space.

        i. Rectangle—constructor which builds a rectangle from a lower left Point2d and an upper right Point2d.

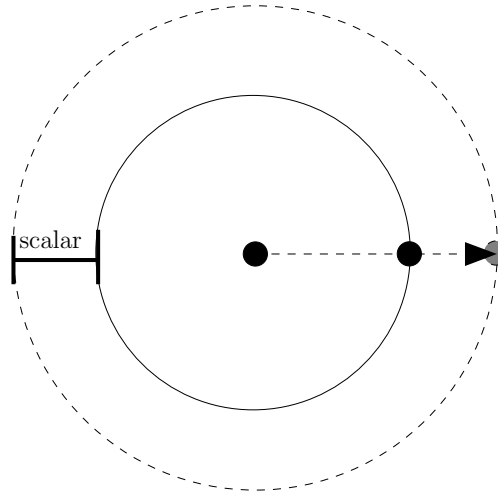   ii. Scale—Scales a Rectangle by a scalar as shown in the image below
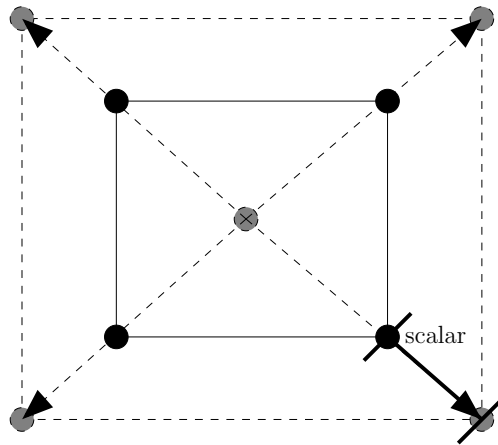
        iii. Shift—Moves a Rectangle by a Vector2d as shown in the image below
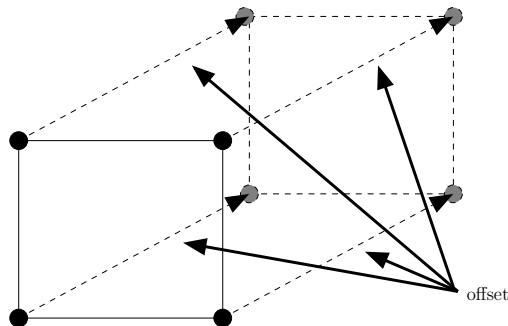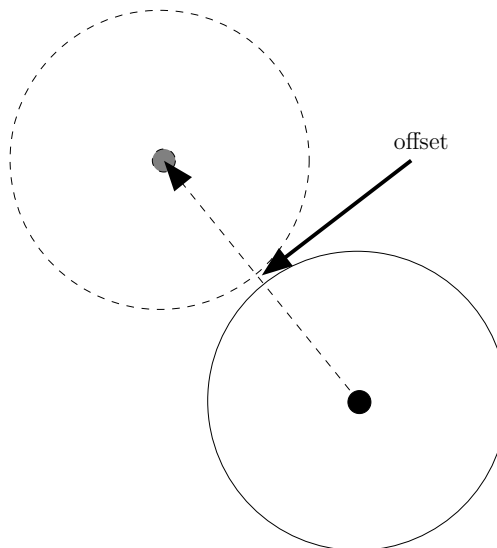
3. **circle.h** and **circle.cc**

    (a) Circle: a class representing a circle in space.

        i. Circle—constructor builds a circle from a center point and a radius.

       ii. Scale—Scales a Circle by a scalar as indicated in the image below

      iii. Shift—Moves a Circle by a Vector2d as indicated in the image below

As in the previous assignments, you will receive up to 100% credit for turning it on the day it is due and will lose 25% per day late.

There are 7 points possible in the tests and another 3 possible in the styling.

The End.