

# CS0045 ALGORITHMS AND INFO STRUCTURES APPLICATIONS

## Assignment 2

### Task

Download the class **Rectangle** from Canvas and read it through. The task of this assignment is to create **RectangleGroup**, a class to represent a group of rectangles that may be used in a graphics program. The class has the capacity to represent a maximum of 50 rectangles and the rectangles are stored consecutively at the start of the array - some entries at the end of the array may be empty. You must follow the UML below:

RectangleGroup	
- numRectangles: int - theRectangles: Rectangle[]	
+ RectangleGroup()	// constructor initializes numRectangles to 0 and // theRectangles to an empty array of size 50
+ getNumRectangles(): int	
+ getRectangle(i: int): Rectangle	// returns the Rectangle at // position i in theRectangles
+ setNumRectangles (n: int): void	
+ addRectangle(r: Rectangle): void	// add Rectangle r after the current // last rectangle in theRectangles
+ isEmpty(): boolean	
+ largestArea(): double	// return the largest area of the // Rectangles in the object
+ largestPerimeter (): double	// return the largest perimeter of the // Rectangles in the object
+ <u>printSquares(RectangleGroup: rg): void</u>	// static method
+ toString(): String	

As you write the methods in **RectangleGroup** you will need to call methods from **Rectangle**

When **RectangleGroup** is complete and compiles correctly, download the UNFINISHED file **RectangleGroupTest.java**. Complete the test file by following the comments in the code and using methods from **RectangleGroup**. When printing answers make sure you print some text to introduce each answer.

### Turning in the Assignment

When you have finished upload the files **RectangleGroup.java**, **RectangleGroup.class**, **RectangleGroupTest.java** and **RectangleGroupTest.class** and a screenshot of **RectangleGroupTest** executing. Due by the start of the next class.