

CSE2010 Data Structures
Fall 2018

Homework 1
(Due Oct/02/2018)

1. For the Rectangle class below, write down overloading operator< to compare the areas of two Rectangle objects such that one Rectangle object is larger than the other if and only if its area is larger than that of the other. Also make your own main function to run an example.

```
class Rectangle
{
    public:
        Rectangle(int h, int w);
        bool operator<(const Rectangle &s);
    private:
        int i32height, i32width;
};

bool Rectangle::operator<(const Rectangle &s)
{
    // Fill in here
}

void main()
{
    // Fill in here
}
```

2. Implement a class Complex, which represents the complex number data type. Write your own code to implement the following operations:
- a. A constructor which uses an initial value of $0+0j$.
 - b. Overload operator+ to add two complex numbers.
 - c. Overload operator* to multiply two complex numbers.

You need to submit all of your source codes as well as the results (i.e., screen capture).