

Lab Exercises Week 3

1 Arrays

1.1 Ordered Arrays

Modify the ordered array to use a binary search as a means to find the position at which an item is to be inserted. The necessary code `Array.h` is provided on Blackboard. On the main program, add a template class called `Circle` that contains a single private variable (called `radius`) of parametrized type `T`. Override the necessary operators, including the redirection operator `<<`. Write a test function (in the main program) that creates an ordered array of three `Circle<int>` objects with the following radii: 15,8,10 (added to the array in this order). Print the array. The output must look like: 8 10 15.

1.2 Big-O estimation.

Estimate the Big-O complexity for all the methods and constructors of both classes `UnorderedArray` and `OrderedArray`.