University of Washington
Outreach Program

Name_____

1. Define a probe that can be inserted into a class or function as a test coverage device. For a class, the probe is to keep track of the number of instances of the class that exist and how many have been created since the program was started. For a function, the probe is to track how many times the function is called.

   In either case, the probe is to respond with the appropriate tracking information when the class instance or function containing the probe is queried. It will be necessary to figure out the best way to present the query.

   Demonstrate your probe on a class with multiple instances and on several functions. The functions should not be class member functions.

2. Overload the ostream operator to support printing of information of the class Probe.

3. We will now work with some legacy code and add a couple of new features. Starting with the dynamic array from your earlier homework, add the following new member functions.

   a. Write and demonstrate a copy constructor for the dynamic array class.
   b. Write and demonstrate an assignment operator for the dynamic array class.

4. Populate a fixed size array of integers with user entered data then sort the array.

   Write a binary search routine that will accept such an ordered array, an element to search for, a range within the array to search, and a comparison function.

   You can use the library function qsort to sort your container.

   How would you modify your design to permit you to use the same code for an array of any type?