**CIS 360 Lab #1: Implementing Algorithms**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sequential Search Algorithm**

**A1.1-Sequ_Search.tiff**Input:

* positive integer n;(max number of array)
* array of keys S indexed from 1 to n;
* a key x (what we are looking for)

Output: the location of x in S (0 if x is not in S)

Binary Search Algorithm

Input and Output are the same as above except the input array S is sorted.

**A1.5.tiff**

**Task 1.** Implement Sequential Search Algorithm, test it on 1000 ; 100,000 and 1,000,000 randomly generated numbers,at the beginning of each algorithm, define a variable or a counter initialize and within the while loop every time there is a comparison in the array increment the counter.

Time for 1,000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Time for 100,000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Time for 1,000, 000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Task 2**. Implement Binary Search Algorithm, test it on 1000 ; 100,000 and 1,000,000 randomly generated (**sorted**) numbers, record the system running time.

Time for 1,000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Time for 100,000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Time for 1,000, 000: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_