Exercise – Search

Exercises:

1. Write a function called LinearSearch that takes in an array of integers, the length of the array and the element to search for. The prototype should look like this: int LinearSearch(int arr[], int array_size, int item); The function should search linearly through the array for the given item and return the index of the first occurrence.

    a. Generate arrays of random integers of different sizes and call the function to see how long it takes to run for different sizes of inputs.

2. Write a function called BinarySearch that takes in a **sorted** array of integers, the length of the array and the element to search for. The prototype should look like this: int BinarySearch(int arr[], int array_size, int item); The function should perform a binary search through the array for the given item and return the index of the first occurrence.

    a. Generate arrays of random integers in ascending order and call the function to see how long the binary search takes to run for different sized inputs.