## Task 1

For task 1 I allowed the user to choose which array they would want to analyse using a Console.WriteLine(“”), inside of the double quotes, would be the option of the array.

## Task 2

I sorted the arrays in ascending and descending order and displayed every $10^{th}$ value, using a globals.jump method

## Task 3

I did task 3 by using a global.network method so that the user would be able to search for a user defined method.

## Task 4

I did this task similarly to task 3, by using a globals.network which allows the program to write the destination and position of the values from a check

## Task 5

For this task, it was a repeat of the previous tasks, I copied and pasted the previous way I did it, except for this I did a globals.jump method but instead of doing it for every $10^{th}$ value, I did it for every $50^{th}$.

## Sorts and Searches

I chose to use Quick Sort, Cocktail Sort, bubble sort and heap sort.

1. I chose to use Quicksort because it is quick
2. I chose to use Cocktail sort because of the best time complexity is good when the array is already sorted.
3. I chose to use bubble sort as it is similar to cocktail sort and has a similar time complexity
4. I chose to use heap sort because of its more efficient than most, however it has a slow time complexity. It also has a time complexity of $T(n) = T(n/2) + c$
5. I chose to use Linear search because of the time complexity of algorithm is $O(n)$.