Problem

Last time we have already realized how to randomly generate different numbers in a row. Today, we practice doing sort and search in an array. At the first of the program, randomly generate ten 3-digit numbers (from 100 to 999), and show it in a line. Ask the user for giving an order 'i' or 'd' as in increasing order or in decreasing order. Then, use "bubble sort" to sort the array in the required mode, and print the sorted array. When the sorting is done, it is well prepared to work on the binary search. Now, let user know which location a number is while entering a number by using "binary search."

(a) Randomly generate 10 numbers between 100 and 999, and print it to the console window separated with a blank.

(b) Sort the array from small number to large number if input is 'i'.
Sort the array from large number to small number if input is 'd'.
Show the array again.

```
Random array:
453 718 654 135 986 454 536 234 894 128
to order increasingly(i) or decreasingly(d): i
sorted array:
128 135 234 453 454 536 654 718 894 986
```

(c) Repeat a query operation and report index of the number in the array.
You have to use "binary search."
Until user inputs 'R', clear the screen and return to (a) to start again.
If the input is 'Q', end the program.

```
What number you would like to find? 128
the index of 128 is 0.
What number you would like to find? 777
777 is not found.
```