

CSC 160 LAB 7-1
REVIEW OF PROGRAMMING CONCEPTS

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1. THE ASSIGNMENT

In what follows, do not use any library class methods for finding the maximum or minimum of an array, or for finding the number of times an given value occurs in an array. The point of the assignment is for you to write the code yourself.

Write a program that does the following:

- (1) Ask the user to enter a positive integer **size** for the size an array to create.
- (2) Asks the user to enter a second positive integer **bound** for the upper bound for the integers to be stored in the array.
- (3) Creates an array of the given size **size**, fills it with random integers in the range $0, \dots, \text{bound}$, and prints it the array out.
- (4) Prints out the number of times the first element of the array occurs in the array.
- (5) Prints out the number of times the last element of the array occurs in the array.
- (6) Prints out the maximum value in the array, and an index within the array where the maximum value occurs.
- (7) Prints out the minimum value in the array, and an index within the array where the minimum value occurs.
- (8) Print every other element of the array, beginning with the first element.
- (9) Ask the user to enter a positive integer **divisor**, and then print every element of the array that is divisible by that number.

: IMPORTANT: Make sure your output matches exactly with the sample, down to the commas separating the array entries. In particular, there should be no comma after the last array elements, and all array elements should be included in square brackets.

2. SAMPLE RUN # 1

```
Enter the size of a random array to create: 10
Enter an upper bound for the random array elements: 5
Here is the random array created:
[2, 0, 1, 2, 3, 5, 5, 3, 5, 3]
The first element 2 occurs 2 times.
The last element 3 occurs 3 times.
The maximum value is 5: it occurs at index 5.
The minimum value is 0: it occurs at index 1.
The list of every other value in the array is:
[2, 1, 3, 5, 5]
```

Enter a positive number for the divisor: 3
The list of array values divisible by 3 is:
[0, 3, 3, 3]

3. SAMPLE RUN # 2

Enter the size of a random array to create: 15
Enter an upper bound for the random array elements: 19
Here is the random array created:
[0, 3, 0, 17, 5, 14, 8, 8, 5, 5, 11, 14, 15, 17, 17]
The first element 0 occurs 2 times.
The last element 17 occurs 3 times.
The maximum value is 17: it occurs at index 3.
The minimum value is 0: it occurs at index 0.
The list of every other value in the array is:
[0, 0, 5, 8, 5, 11, 15, 17]
Enter a positive number for the divisor: 2
The list of array values divisible by 2 is:
[0, 0, 14, 8, 8, 14]

4. DUE DATE

This is due Wednesday of Week 7.