

## Practical IB Computer Science Array Test

Name: \_\_\_\_\_ Date: 07.04.2022

### Processing items in an array

This program provided to you has an (integer) array of 100 primes in random order, aptly and creatively called ***numbers***.

You are strongly recommended to use methods whenever appropriate. Do not write all your code in the main method.

**Do not use sorting algorithms in this practical test.**

Work through the test from the beginning. Your program should build and grow –do not start a new program for each point. During this test you may use **any** resources that you have created, class resources and notes but you are **not** allowed to use Internet or communicate in any way with others. Ensure that you comply with the OFS academic honesty policy.

<<< Please Turn Over >>>

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<b>Instructions</b>	<b>Program Display/Screen Output</b>
1. Output your name and the size of the <i>numbers</i> array.	Oliver Queen. <size of array here>
2. Display the <i>numbers</i> array on the screen	163, 491, 211, 5, 509, 17, 313, 197, 7, 31, 97, 4, 131, 223, 463, 331, 107, 59, 293, 337, 461, 191, 233, 277, 71, 109, 241, 61, 29, 503, 367, 449, 89, 431, 389, 139, 269, 263, 47, 349, 257, 67, 2, 11, 251, 227, 457, 193, 383, 359, 379, 83, 173, 409, 239, 151, 311, 13, 113, 443, 419, 281, 181, 487, 53, 103, 179, 43, 479, 149, 199, 19, 283, 307, 23, 439, 271, 373, 167, 73, 421, 101, 401, 37, 353, 521, 433, 41, 523, 499, 347, 127, 157, 3, 79, 467, 229, 397, 137, 317
3. Find the minimum and maximum values in the <i>numbers</i> array, and output them.	Min = 2 Max = 523
4. Calculate the average of the numbers in the array, and output it.	Average = 235.96
5. Count how many numbers are above and below the average, and output the results.	Above average = 48 Below average = 52
6. Input how many largest numbers in the array are to be found and displayed.	How many largest and smallest numbers to find in the array? <u>5</u>
7. Input and validate (loop) for an acceptable range between 1 and 10 inclusive; output an error message when appropriate.	How many largest and smallest numbers to find? <u>-1</u> Error-enter a number between 2 and 10.  How many largest and smallest numbers to find? <u>99</u> Error-enter a number between 2 and 10. ...
8. Write a boolean method to check whether the array is made of unique elements or not.	Array has only unique elements: true
9. Find and display any amount of <b>largest</b> numbers in the array, as per user input.	How many largest and smallest numbers to find (2~10)? <u>5</u> 523 521 509 503 499
10. Find and display the same amount of <b>smallest</b> numbers in the array, as per user input..	How many largest and smallest numbers to find (2~10)? <u>10</u> 523 521 509 503 499 491 487 479 467 463 2 3 4 5 7 11 13 17 19 23