# Cmpe344 Fall 2021 FF34 Experiment #1: Arithmetic operations on arrays

In this experiment, you will write a MIPS program that has two arrays with **byte** elements in its data segment. The program should sum the arrays element-wise and store the results into the first array, overwriting it. The second array should remain the same. A byte with the value 0 will mark the end of both arrays.

You can assume that the input arrays’ lengths will be equal, and that the input values and their sums will be representable as signed bytes; we will ensure these in our test cases.

For example, if the input arrays are;

45, 84, 22, 12, 5, -4, 9, 4, 0  
 1, 2, 3, -9, -8, -7, 10, 11, 0

when the program finishes, they should become;

46, 86, 25, 3, -3, -11, 19, 15, 0  
 1, 2, 3, -9, -8, -7, 10, 11, 0

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| **Please read the questions and the submission details on the next page!** |
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## Questions

Note that the input values or their sums might be too large or too small to store as **signed bytes** for some inputs.

In the following table, and denote the values of the th elements of the two arrays. Fill in the table for the given :

1. Indicate whether it is possible to store as a signed byte.
2. Give the minimum and maximum values for such that can still be stored back into as a signed byte.

|  | Possible? [yes/no] | Minimum value | Maximum value |
| --- | --- | --- | --- |
| –200 | No | 72 | 327 |
| –40 | Yes | -88 | 167 |
| 40 | Yes | -168 | 87 |
| 200 | No | -328 | -73 |

## Demo and Submission

**Make a demo** of your code to an assistant until 12:50, strict.

**Submit the following** to Moodle (for the online participants) or as directed by the assistants (for the on-site participants) until 12:50, strict:

1. **This document** with your answers filled in, with the file name

lab1\_<GROUPID>.docx

1. **Your source code** performing the described operations, with either one of the following file names

lab1\_<GROUPID>.asm  
lab1\_<GROUPID>.txt

E-mail submissions will **NOT** be accepted.