# Computing Machinery I
## Assignment 4
**8% of your final score**
**Due June 5th @ 11:59PM MST**

**Objective**
The objective of this assignment is to practice using 2D arrays and structures in ARMv8 assembly.

**New Skills needed for this assignment**
- Ability to work with 2D arrays in ARMv8 assembly
- Ability to use structures in ARMv8 assembly

**Note**
You may re-use some of your code from Assignment 2.

**Overview**
Your program will simply generate a table of random positive integers. Each integer must not exceed 100. The dimensions of this N×N table is specified by the user. N should not exceed 10.

**Details**
After the random 2D array is generated, the program calculates the sum, min and max for each row and for each column. Create a structure for each trio: {sum, max, min} and store it in two arrays of structures on for rows and one for columns.

Display to the user the N×N array as well as the calculated stats (sum, max, min) for each column and for each row.

**Submission**
- **Note:** The TA may provide further submission instructions.
- Name your programs *assign4.asm*
- Create a script file *assign4.script*
- Submit a *README* file providing extra instructions or information for your TA (optional)
- Submit your work to the appropriate dropbox on D2L.

**Late Submission Policy**
Late submissions will be penalized as follows:
-12.5% for each late day or portion of a day for the first two days
-25% for each additional day or portion of a day after the first two days
Hence, no submissions will be accepted after 5 days (including weekend days) of the announced deadline.

**Academic Misconduct**
This assignment is to be done by individual students: your final submission must be your own original work. Teamwork is not allowed. Any similarities between submissions will be further investigated for academic misconduct. While you are encouraged to discuss the assignment with your colleagues, this must be limited to conceptual and design decisions. Code sharing by any means is prohibited, including *looking* at someone else's paper or screen. The submission of compiler generated assembly code is absolutely prohibited. Any re-used code of excess of 5 lines in C and 10 lines in assembly (10 assembly language instructions) must be cited and have its source acknowledged. Failure to credit the source will also result in a misconduct investigation.

**D2L Marks**
Marks posted on D2L are subject to change (up or down).

# Computing Machinery I
## Assignment 4 Rubric

**Student:**_____

| Item | Max Points | Points |
|---|---|---|
| Code compiles | 5 | |
| Code runs | 5 | |
| Random 2D array | 20 | |
| Min, Max, and Sum calculation (10 each) | 30 | |
| User interface (input validation, implementing all features) | 10 | |
| Use of structures | 10 | |
| Use of arras of structures | 10 | |
| Code readability (formatting and documentation) | 10 | |
| **Total Points** | **100** | |