EEE4120F High Performance Embedded Systems
Lecture 7

Learning Activity A: Considering if SPMD or MPMD better than SPSD.

Consider a stats program that run on a block of float data. You can consider it has output values haszero, min, max and avg. It calculates these outputs as following:

- haszero : set to 1 if the data has any zero values, otherwise this value is 0
- min : set to the minimum value of the data max : set to the maximum value of the data
- avg: set to the mean of the data values

Part1: Discuss among yourselves and propose a) an alternate SPMD implementation that you can then run in parallel and how this could split up and speed-up processing; b) an MPMD implementation, for which each version could be run on the same or different pieces of the data to speed things up.

Part2: discuss what the parallel overhead would be considered for the alternatives, in order to integrate and consolidate partial solutions that the different SPMD or MPMD runs provide. Would you say this is stupidly parallel? Explain your reason for why or why not.

Space for your working: