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HW2 Team Assignment #1

I have found myself waiting for a discussion of distributed computing problems which do not rely on the assumption of shared memory architecture, as those problems are the kinds of problems that are present in the area of research I am interested in. These problems up to this point involving SIMD and MIMD parallelism are good to know, but I don't find them compelling. I would like to learning more about parallel ideas like Actors and Multi-Agent system techniques, which tend to bring more "functional"-flavored design techniques to parallel systems.

My understanding of what we have seen so far is that it took a while to convince anyone we could do better on sequential computing by parallelizing our code, but the place where the added challenge was "worth it" and tractable was in the area of scientific computing. All problems being parallelized need to be "collected" back to produce a result, so one of the biggest problems will always be how we can best structure our problems to make the parallel management easier. It is my understanding, though I am unsure at this point in the semester, that this is why the prefix algorithm is so popular. These different prefix algorithms all take a swipe at reducing the time it would take to apply some associative and commutative operation to all members of a collection. The way that this is achieved is somewhat sneaky! I am happy to see that recursion has made it's way into part of the solution - I enjoy working with recursively-defined operations.