

Students can be provided with the serial version of either the compute pi or fibonacci codes and then be asked to parallelize them with openMP, particularly to apply OpenMP tasking to the recursive parts. They can then be asked to run the codes for different input parameters and number of OpenMP threads.

An example assignment is below:

1. Parallelize the serial version of the compute pi code with openMP
2. Use openMP tasks on the recursive function pi_r
3. Once the code has been parallelized, perform the following:
 - a. Compute pi with [100,500,1000,5000,10000,1000000,1000000000] numbers of rectangles for both the serial and parallelized code with 2 and 4 threads. Note the runtime and accuracy of the approximation in each.
 - b. Comment on trends you see with the runtime when increasing the number of rectangles and the number of threads.