

1. Drew Sadler
2. (For a size of 10)  
[asadler1@hopper3 Studio\_14]\$ ./mpthread  
Thread number: 3  
Thread number: 6  
Thread number: 2  
Thread number: 5  
Thread number: 4  
Thread number: 8  
Thread number: 1  
Thread number: 7  
Thread number: 9  
Thread number: 0
3. [asadler1@hopper3 Studio\_14]\$ ./mpthread  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20  
Thread number: 20
4. [asadler1@hopper3 Studio\_14]\$ ./mpthread  
Thread number: 1  
Thread number: 1  
Thread number: 0  
Thread number: 0  
Thread number: 3  
Thread number: 3  
Thread number: 4  
Thread number: 4  
Thread number: 2  
Thread number: 2
5. Each thread handles 5 iterations then changes to a different number
6. It could be a bad idea due to if you had a program where a thread were able to complete the iteration faster than the other, maybe not needing as many threads assigned to it, so that it was wasted on a simpler iteration that could have been used more efficiently elsewhere
7. Hypothesis: I think the program overall will take 2 seconds to compile since the threads that aren't asleep should be able to complete their iterations faster, so the only thing we would wait on is the 1 seconds sleep.  
Time with sleep: 1648245270

Time no sleep: 1648245389

Showing the hypothesis was wrong and actually took 119 seconds longer with the wait on certain threads

8. 1648245569 which is 180 seconds faster than the program with no sleep now!
9. Now the program schedules all of the iterations to one thread (3) until 21 iterations later and runs through the remaining 0,4,2, and 1 when reaching the last 4 iterations effectively making it only have to sleep for 1 iteration rather than 5
10. The least amount of times a certain thread number should appear in the iterations given, since when i changed it to 5, 5 appeared of each number. But when changed to 3, a lot more than 3 appeared for some but I noticed it was the minimum number of times some of the threads did appear