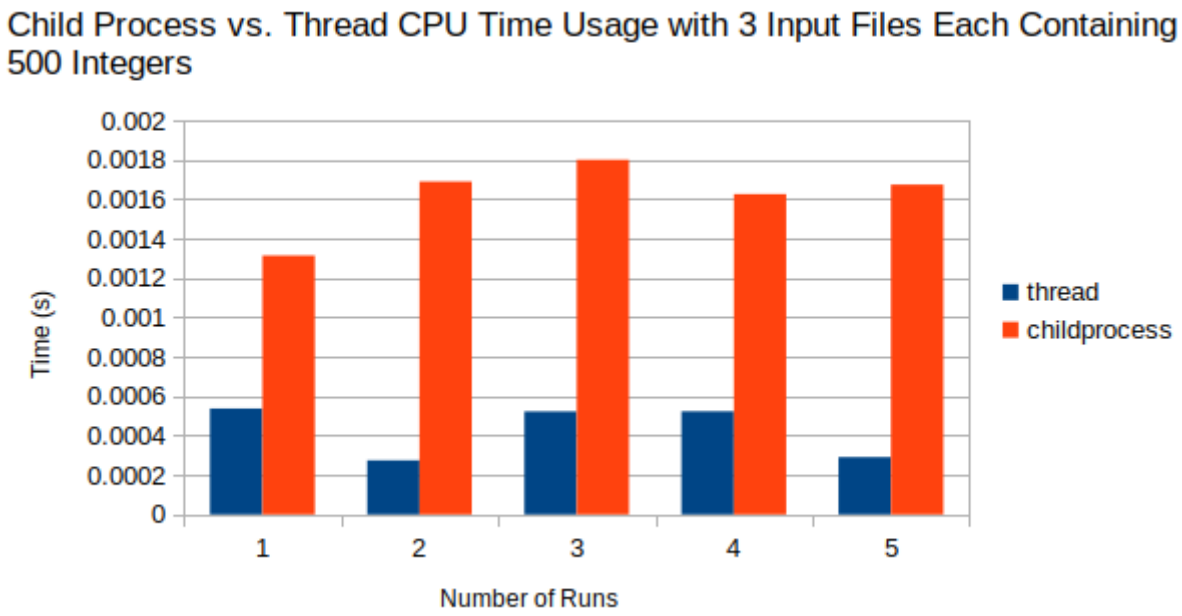
CS 342 PROJECT 1 SPRING 2021-2022
Emin Berke Ay – 21901780
Nurettin Onur Vural – 21902330

Part C

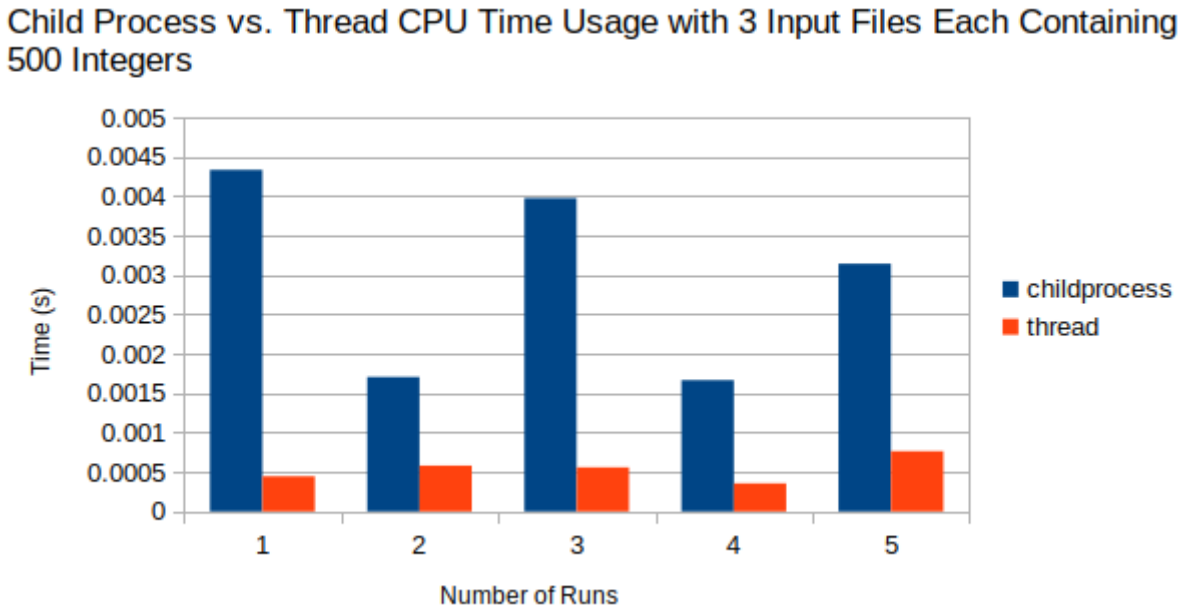
We have measured the time taken for child process and thread usages using the “time.h” built-in library of the C programming language. We also used the “time” keyword in Linux terminal windows to take measurements of CPU time.

We expect thread process to be faster as threads share memory which means they are more efficient in communication and take less time in context switches compared to child processes. Child processes also do not share memory, each child processes is isolated from others.

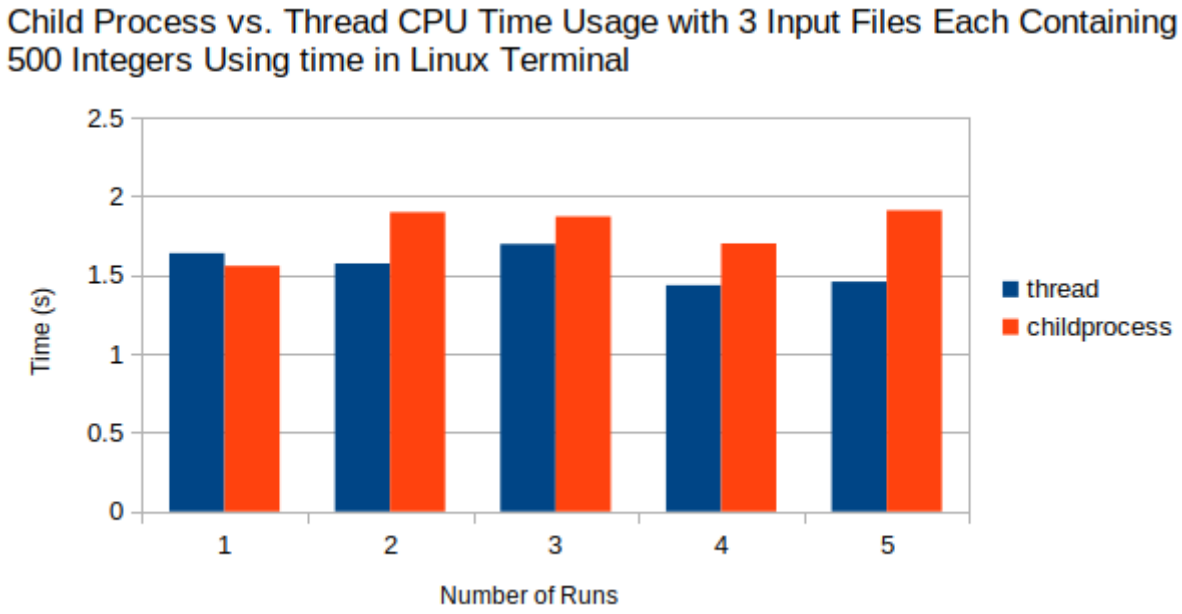
Here are the results of our measurement:



Graph 1. Child Process vs. Thread CPU Time Usage with 3 Input Files Each Containing 500 Integers.



Graph 2. Child Process vs. Thread CPU Time Usage with 3 Input Files Each Containing 5000 Integers.



Graph 3. Child Process vs. Thread CPU Time Usage with 3 Input Files Each Containing 500 Integers Using time in Linux Terminal.

Our results prove our hypothesis. As we can see, in every experiment thread process comes out faster due to the reasons listed above.