

The following results are recorded on an Ubuntu 20.04.1 operating system. It is dual booted with Windows 10 but for the testing purposes Linux was used. System specifications are:

Intel i7 7700HQ @ 2.8GHz with turboboost up to 3.8GHz on single core,

4 cores 8 logical cores,

32GB DDR4 2400mhz

Nr. of People	Nr. Of Flips	Global Lock	Iteration Lock	Coin Lock
100	10000	105.574 ms	2266.998 ms	12094.878 ms
100	20000	177.009 ms	5108.256 ms	31882.591 ms
200	10000	196.583 ms	5400.496 ms	32219.084 ms
200	20000	255.816 ms	10287.840 ms	57343.245 ms

We can observe that having more locks increases the overall execution times of the program. As Global Lock have less locks than Iteration Lock, we see faster execution times, same with the Coin Lock having more locks than Iteration Lock resulting in higher execution times.

Copy of the terminal log is attached in the zip file.

P.S: At first, I was surprised by the high execution times with the system I am running it on, tried to do some research on google but found no useful article about it. I thought at first processor is not maxing out its core clocks but shown on the picture below it is running all the cores at maximum speed, 3.4 GHz.

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shahin@shahin-GL503VM: ~
Cpu speed from cpufreq 2807.00Mhz
cpufreq might be wrong if cpufreq is enabled. To guess correctly try estimating
Linux's inbuilt cpu_khz code emulated now
True Frequency (without accounting Turbo) 2807 MHz
CPU Multiplier 28x || Bus clock frequency (BCLK) 100.25 MHz

Socket [0] - [physical cores=4, logical cores=8, max online cores ever=4]
TURBO ENABLED on 4 Cores, Hyper Threading ON
Max Frequency without considering Turbo 2907.25 MHz (100.25 x [29])
Max TURBO Multiplier (if Enabled) with 1/2/3/4 Cores is 38x/36x/35x/34x
Real Current Frequency 3333.60 MHz [100.25 x 33.25] (Max of below)
Core [core-id] :Actual Freq (Mult.) C0% Halt(C1)% C3 % C6 %
Core 1 [0]: 3333.60 (33.25x) 83 0 3.5 5.17
Core 2 [1]: 3287.52 (32.79x) 85 0 1.41 5.44
Core 3 [2]: 3316.32 (33.08x) 83.5 0 1 4.76
Core 4 [3]: 3321.07 (33.13x) 83 0 1 5.31

C0 = Processor running without halting
C1 = Processor running with halts (States >C0 are power saver modes with cores i
C3 = Cores running with PLL turned off and core cache turned off
C6, C7 = Everything in C3 + core state saved to last level cache, C7 is deeper t
Above values in table are in percentage over the last 1 sec

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