

There was a significant difference between the unoptimized (-O0) and aggressive optimization (-O3) versions, as expected. When running the unoptimized prog-O0 program, 2609288768 instructions were executed. For prog-O3, ~1/4 of the unoptimized instructions were executed, 767533259 instructions. Observing the assembly code for each program, it is noteworthy that the unoptimized version included more instructions per block, whereas in prog-O3, there were minimal instructions per block with the max being 6 instructions.