

Abstract

My motivation behind this project is to gain a deeper understanding of microprocessor simulation by simulating the 8080a processor. The focus of this project is the trial and error process involved in simulating an 8080a processor to execute *Space Invaders* arcade ROMs on an x86 PC. To solve this problem, I simulated the 8080a's instruction set, interrupt system, and I/O system. I wrote my code in C and SDL and focused on readability and accuracy, followed by performance. The study was a success. From what I learned, I was able to produce an 8080a simulator that supports *Space Invaders*.