Operating System Project Report

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**Introduction**

This report documents the design and implementation of a simple operating system written with GTU-C312 instruction set, report also include documentation for implemented threads in the operating System. This report will go over the implementations of thread table, round robin scheduling, syscall handling and more.

**OS Structure**

Special Memory Locations:

|  |  |
| --- | --- |
| Memory Locations | Usage |
| 0 | Program Counter |
| 1 | Stack Pointer |
| 2 | Syscall Result |
| 3 | Number of instructions executed so far |
| 4 | Operating System Status  0 -> Startup/Running  1 -> Illegal Access Occurred |
| 5 | Currently Running Thread, Operating System not included |
| 10 | Syscall: Calling thread ID |
| 11 | Syscall: Syscall Type  0 -> Yield  1 -> Hlt  2 -> Prn |
| 12 | Syscall: Return PC for calling thread |
| 100-209 | Thread Tables (more on later) |