SE 350 — Operating Systems

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Winter 2015

Contents

0.1 Two-State Process Model

(process may be in one of two states...)

Simple queueing mechanism is inefficients because some processes are not running but ready or nt running and blocked, etc. With a single queue, we must scan the full list for a not-running, ready item which has been there the longest. With multiple queues, we can pick the correct queue and then choose a process "round robin" style.

Five state model:

- Running: a currently executing process
- Ready: a process ready to be picked up
- Blocked / Waiting: blocked because it is waiting for something
- New: a new process
- Exit: a halted / aborted process

0.2 Suspended Processes

(problem...)

0.3 Process Control Blocks

Each process will have a PCB that stores info about the process state:

- Process State
- ID
- Priority
- PC
- CPU registers
- SP

Process switching follows the following process: select next process with scheduler, invoke context switch to new prcoess. The context switch is slightly more complicated:

1. Save content of current process
2. Change process state to ready
3. Update `current_process` to point to new process
4. Set new process state to executing
5. Restore context of `current_process`
6. Execture `current_process`