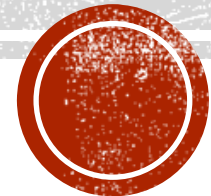


CSC252 – UNIX

PROCESSES

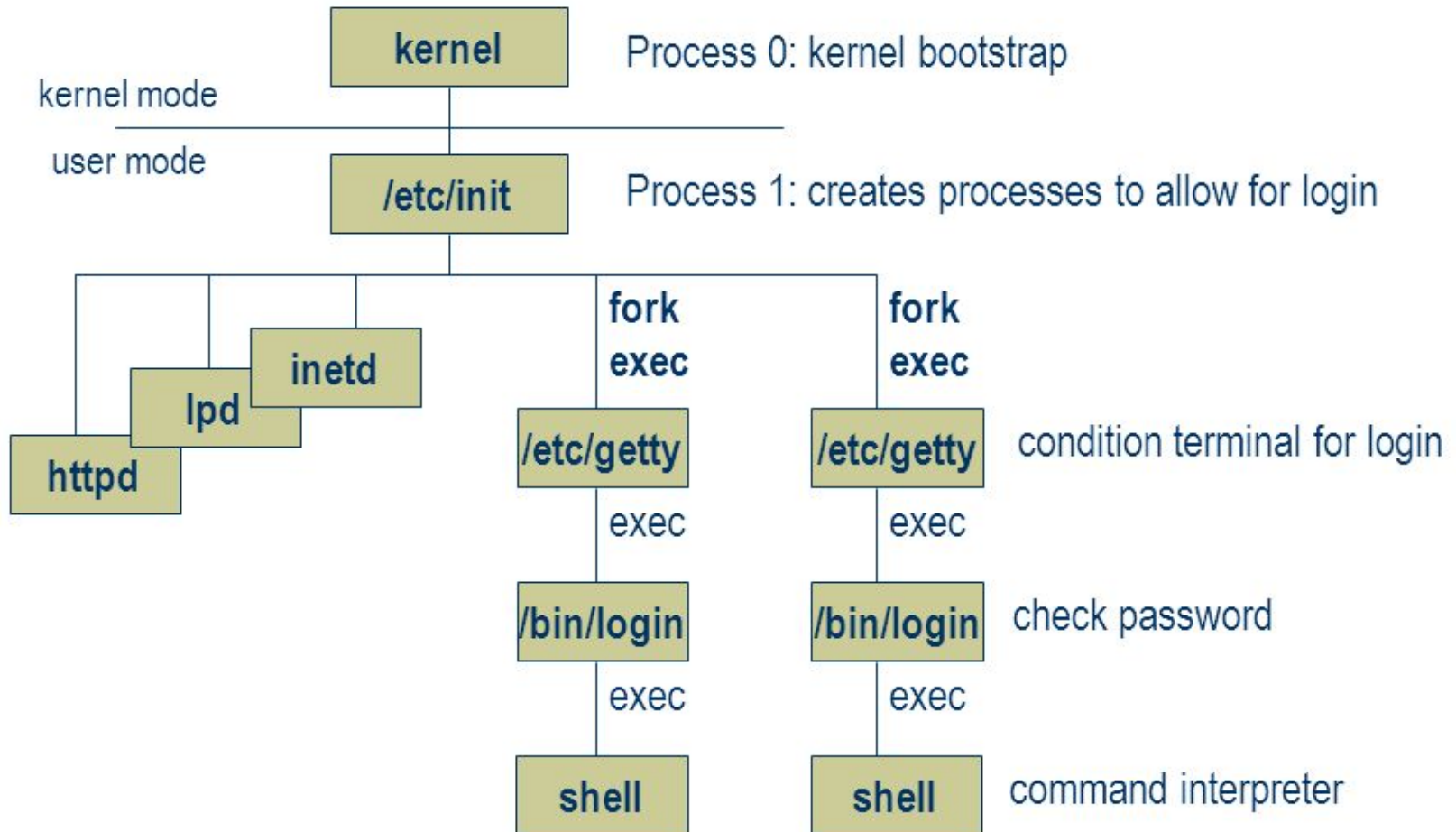


Lisa Frye, Instructor
Kutztown University
frye@kutztown.edu

PROCESSES

- Definition
- PID
- Hierarchical structure

Processes



SESSIONS

- Definition
- Job control

- ;
- &

BASIC PROCESS COMMANDS

- history
- jobs
- kill, stop
- fg, bg
- ps
- top
- uptime
- free
- ptree
- nohup

USEFUL DEBUGGING TOOLS

- `truss`
- `prof`
- `strace`

FC BUILTIN COMMAND

fc -l	List commands from history
fc -e emacs	Use emacs to edit and reexecute previous command
fc -s <num>	Reexecute command number <num>
fc -s <old_string> = <new_string> <num>	Reexecute command number <num> after changing <old_string> to <new_string>

DIRECTORY STACK

- `dirs`
- `pushd`
- `popd`

PROCESS INTERNALS

- Scheduler
- Memory manager
- Magic number
- `fork()` system call

PROCESS TABLE

- PID
- PPID
- Real and effective UID and GID
- Process state
- Location of its code, data, stack and user area
- List of all pending signals

PROCESS INITIATION

- sched
- init
- fork()

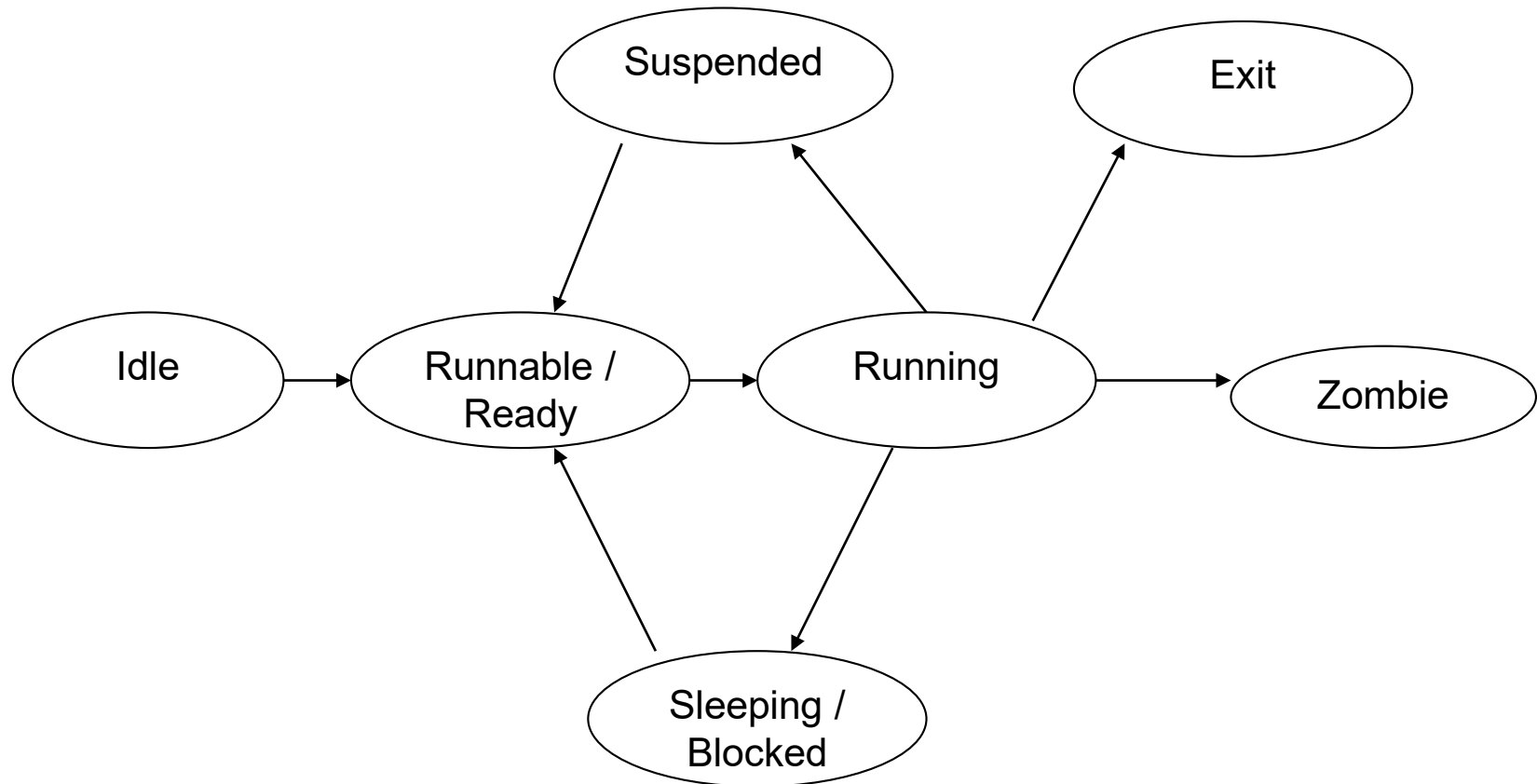
- getty
- login

- Modes
 - User
 - kernel

PROCESS TERMINATION

- Termination status
 - Normal
 - Abnormal
- Zombie process
- Orphan process
- `wait()`

PROCESS STATES



PROCESS AREAS

- Code area
 - Data area
 - Stack area
 - User area
-
- Page tables

SCHEDULER

- Multilevel Priority Queue
- Process's priority
- Priority computation
 - Nice value
- Context switch

MEMORY MANAGEMENT SYSTEM

- Pages
- Region
- Page table
 - Modified bit
 - Referenced bit
 - Age
- RAM table
- Page daemon
- Swap space
- Page fault

SCHEDULING JOBS

- `crontab`
- `at`