

Lecture 28

~ topics not covered (sufficiently).

~ (i) policy landscape

~ scheduling

interactive
vs
batch

proportionate
priority

real-time scheduling

fair scheduling

~ page eviction policies
management

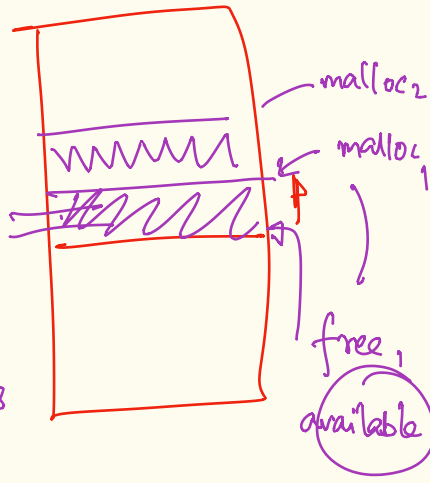
SJF
SRTF

PA



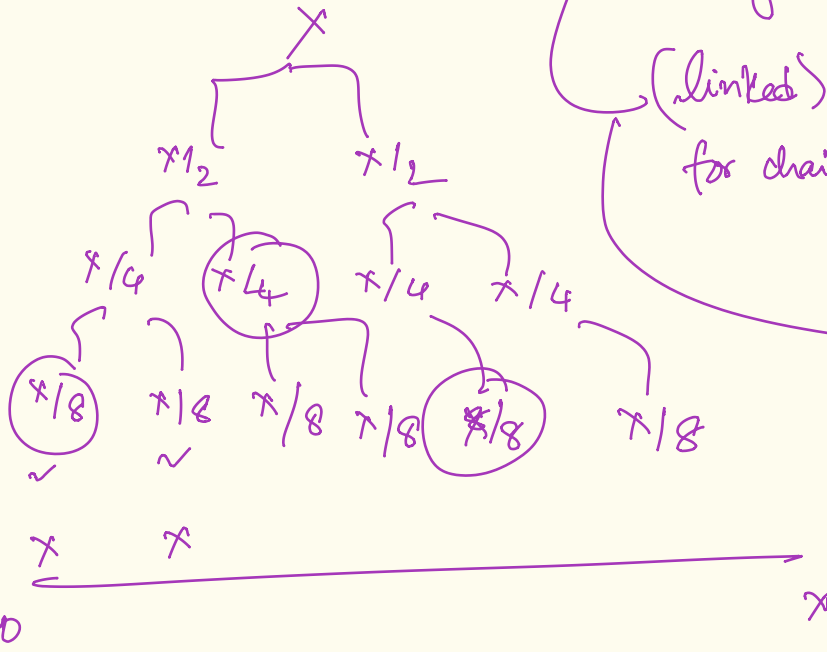
stack

VA



buddy allocation

(linked) lists
for chains of VA regions



Slab allocator

(ii) device drivers. — Linux Device Drivers

(iii) IO handling

{ network processing path.
disk

{ scheduling

(iv) case studies

{ OS flavors
File system flavors
scheduling flavors.

{ booting process

advanced topics.

① — virtualization (virtual machines)

{ hypervisor

{ virtual machine monitor.

} vmware
esx

} Xen
qemu +
kvm

② — containerization (docker)

{ cgroups Kubernetes

{ (process group)

↳ virtualbox

— unikernels

— micro kernels

⑧ security & OS

- OS + new hardware capabilities
 - GPUs
 - TPUs
 - RDMA
 - NVMe
- eBPF
 - (kernel extension mechanisms)
 - SmartNICs / programmable add-ons

⑨ Systems (infrastructure of compute world)

- + OS
- + Computer Networks
- + Computer Architecture
- + Compilers
- + Programming languages
- + distributed systems
- + embedded systems — Drone OS!
- + Systems security.