Embedded Operating Systems

Trainer: Nilesh Ghule

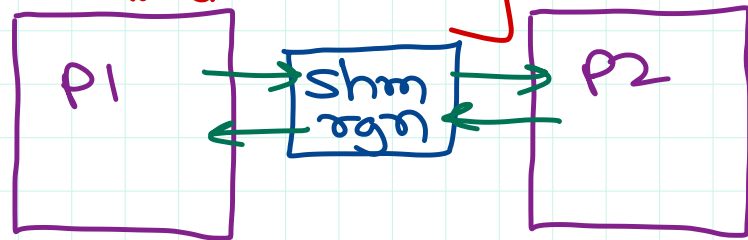# IPC models

① Message Passing

P1 ⟶ OS ⟶ P2

linux IPC
(a) Signal
(b) msg que
(c) Pipe
(d) Socket

② Shared memory

P1 ⟷ Shm rgn ⟷ P2

linux IPC
(a) shared mem

Shared Memory

P1 — wr → Shm rgn — rd → P2
P1 ← rd — Shm rgn ← wr — P2

Shm rgn
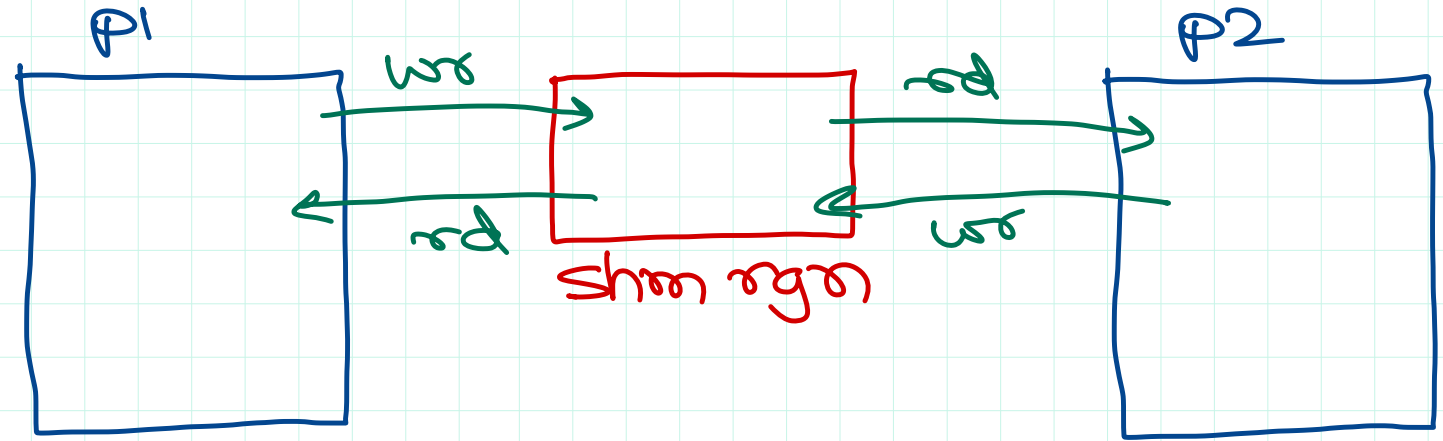
PCB-P1   Shm tbl   Shm obj   PCB-P2
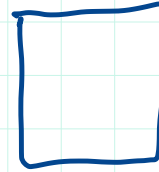
Shm id →

Shm obj
Key
perm
owner
size
nattach
addr

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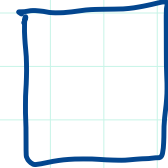
Shared Memory Programming Steps

① req OS to create shm rgn.
   shmid = shmget(key, size, IPC_CREAT|0600);

② get ptr to the shm.
   ptr = (struct *) shmat(shmid, NULL, 0);

③ write/read in shm rgn.
   ptr → member = ...;   // wr
   x = ptr → member;   // rd

④ release ptr of shm.
   shmdt(ptr);

⑤ req OS to destroy shm rgn
   shmctl(shmid, IPC_RMID, NULL);

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Thank you!

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