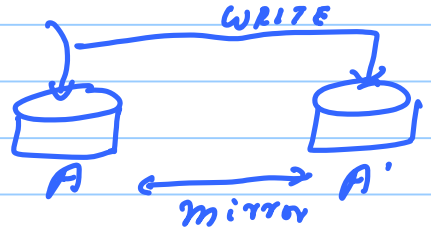
Nov. 23

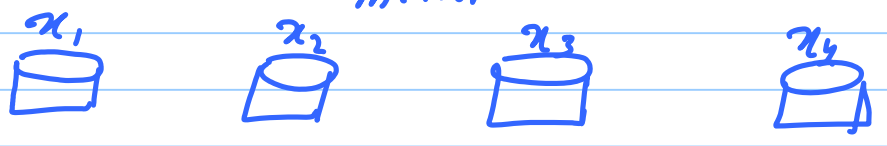
Note Title 23-11-2011

RAID → Redundant array of Inexpensive Disks.

RAID 0 :  No reliability.

RAID 1 : 

{ 100 % wastage

RAID 2 : 

Parity Disk.

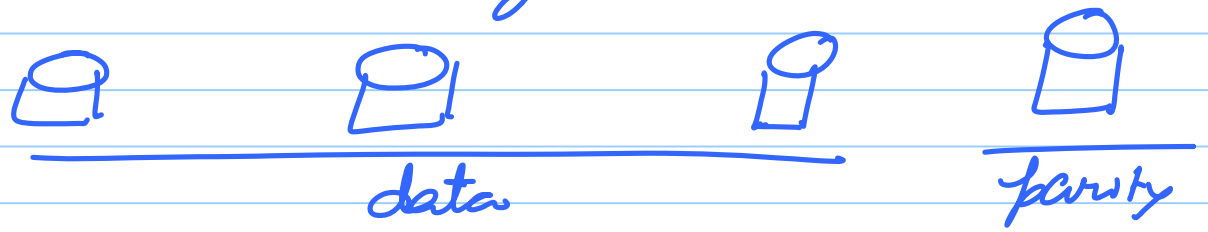
(Bit - interleaving) 

{ n disks
(1/n)th → Parity.

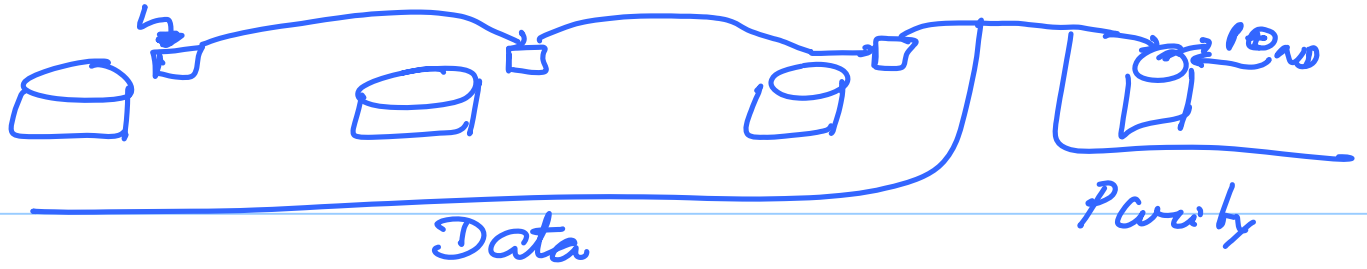
Parity Bit : $x_1 \oplus \cdots \oplus x_i \oplus \cdots \oplus x_n = 0$ ← Parity bit

Problems with RAID 2 : All the disks need to be accessed for a write

RAID 3 : Byte interleaving



RAID 4 : Block interleaving



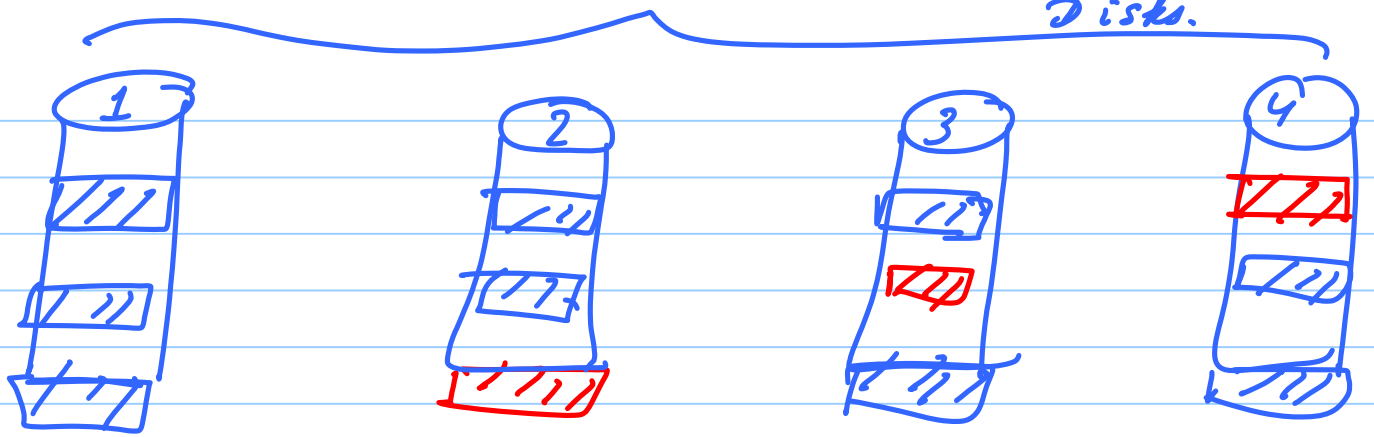
→ Write → 2 disks
(disk that contains the block
+ parity disk)

→ Read → 1 disk
(disk that contains block).

$b_1 \oplus b_2 \oplus b_3 \ldots \oplus b_n = p \qquad p' = p \oplus b_1'$

$b_1' \oplus b_2 \ldots \oplus b_n = p'$

RAID 5 : Distributed Parity Scheme



→ Normal Block

→ Parity

RAID 6 (Highly Reliable Systems)
(n+2) Double Disk Failure

RAID 5 ++

n disks
+2 ---

} For all sets of n blocks → 2 disks contain the parity

Homework Dead line: 26th, 12 PM.