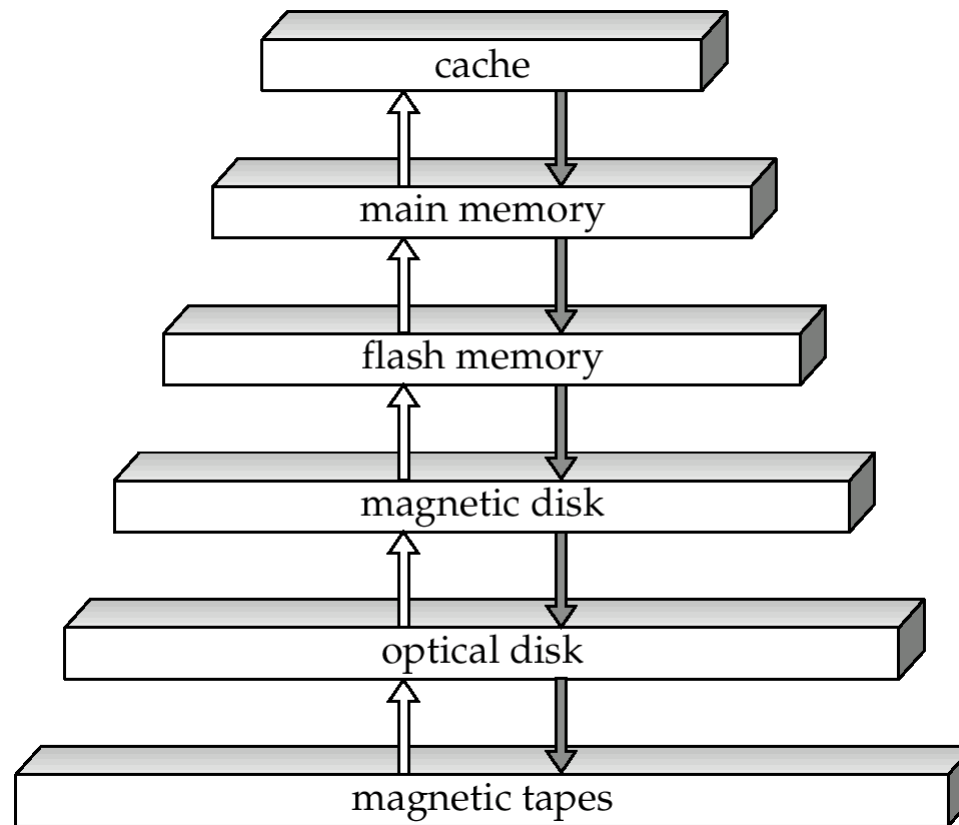


# CHAPTER 10

# DISCUSSIONS

# Discussion 10-1

Describe the characteristics of flash memory (compared to magnetic disk and main memory).



## Discussion 10-2

Why are the following storage mediums not widely used for *on-line storage*?

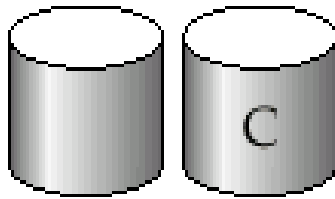
- Magnetic tape
- Optical storage

## Discussion 10-3

What is a *log disk*? In what ways can it improve database performance?

## Discussion 10-4

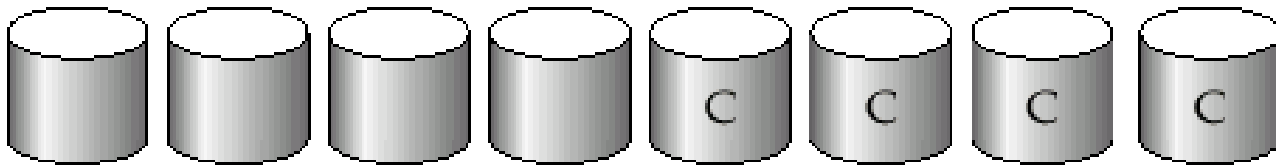
Suppose MTTF of a disk is 100,000 hours and the MTTR is 10 hours. What is the MTTF of a two-disk system that employs mirroring.



## Discussion 10-5

Discuss the relative reliability of RAID 1 vs RAID 5.

- Suppose MTTF of a disk is 100,000 hours and the MTTR is 10 hours
- Consider the situation in which data loss occurs



(b) RAID 1: mirrored disks



(f) RAID 5: block-interleaved distributed parity

## Discussion 10-6

Consider the data and parity-block arrangement on four disks depicted below. What, if any, problem might this arrangement present?

- $P_i$  is the parity block for data blocks  $B_{4i-3}$  and  $B_{4i}$

Disk 1	Disk 2	Disk 3	Disk 4
$B_1$	$B_2$	$B_3$	$B_4$
$P_1$	$B_5$	$B_6$	$B_7$
$B_8$	$P_2$	$B_9$	$B_{10}$
$\vdots$	$\vdots$	$\vdots$	$\vdots$