Main Memory

Holes

Variable
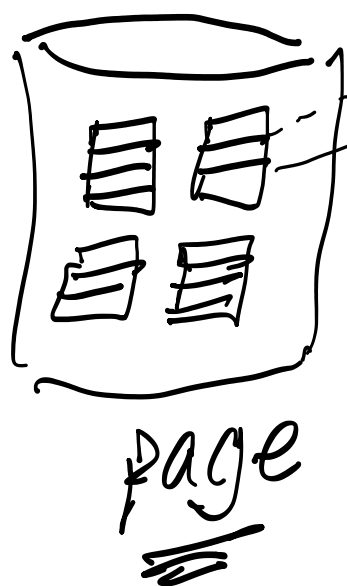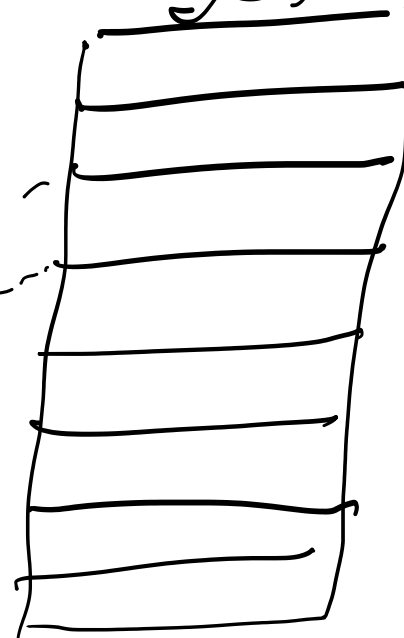Partitioning
and Compaction

- Job size is variable
- When jobs are loaded and when they leave system, they create Holes.
- If the new job requires more memory than a single Hole, O/S requires to transfer data in memory to find all free space in one location. It is called Compaction.
- Compaction happens when a new job is loaded, when system is idle or when user asked for it.
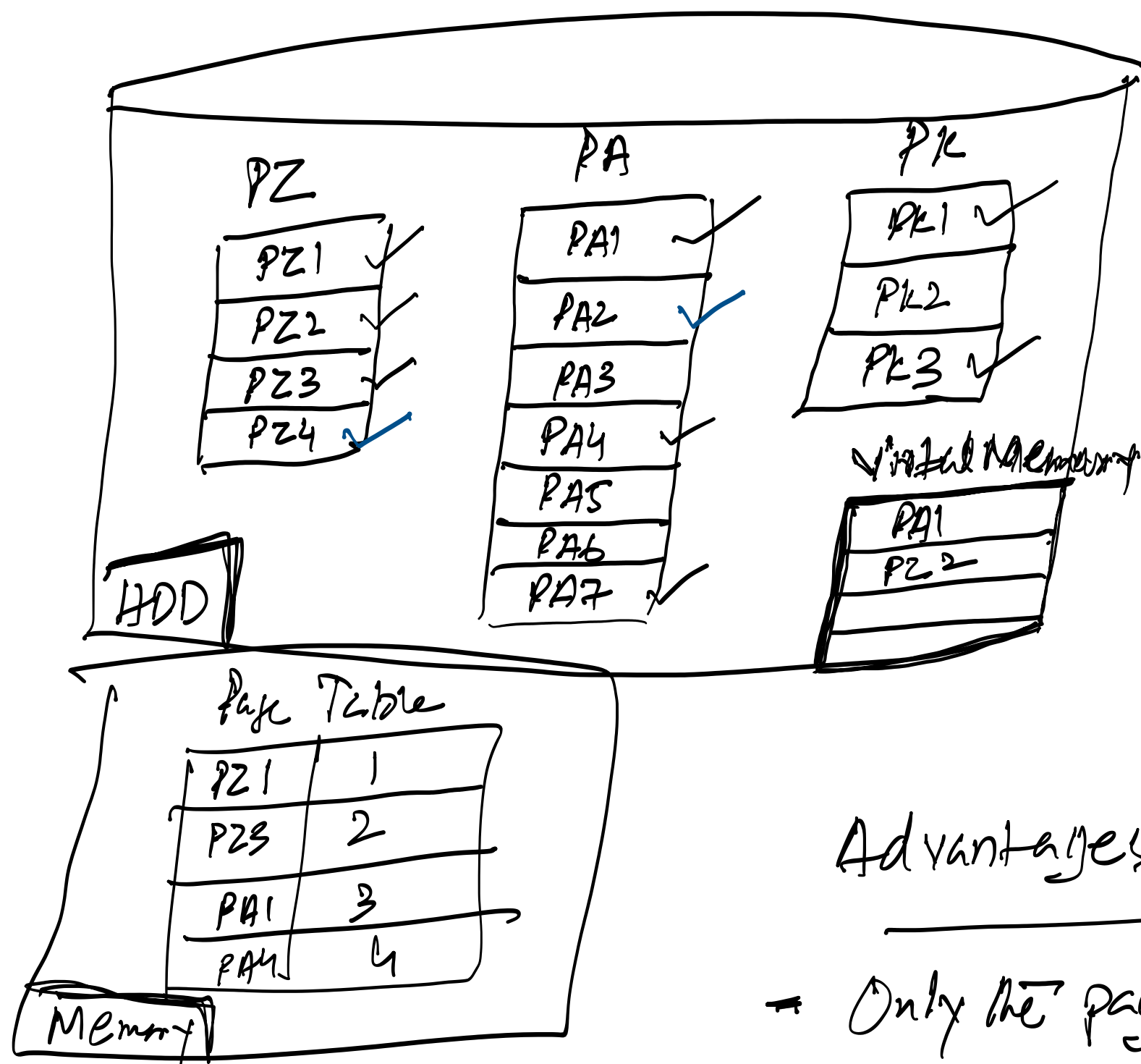
Paging: - Page

page

Main Memory
"Page frame" ✓

Page Table

Memory Page frame.

Page Table

PZ1	1
PZ3	2
PA1	3
PA4	4

Memory

1	PZ1
2	PZ3
3	PA2
4	PA4
5	PK2
6	PZ4
7	PK3
8	PA7

* 3 idle pages

Advantages of paging:

- Only the page required is loaded; not the whole program
- No need of compaction.
- Programs amounting more than the total memory size are loaded.
- Use of virtual memory.
- O/S can load programs far more than available memory.

Disk Thrashing