3

Final class 1
Lab

Paging

Virtual memory; Unit space in a virtual memory is called a page.

We place page to frame. The structure of page and frame is equal. Frame is on main memory and page is on virtual memory. The RAMs storage is multiplied by virtual memory. 1RAM = 3 virtual memory

05/04/2023

Page Replacement Algorithm

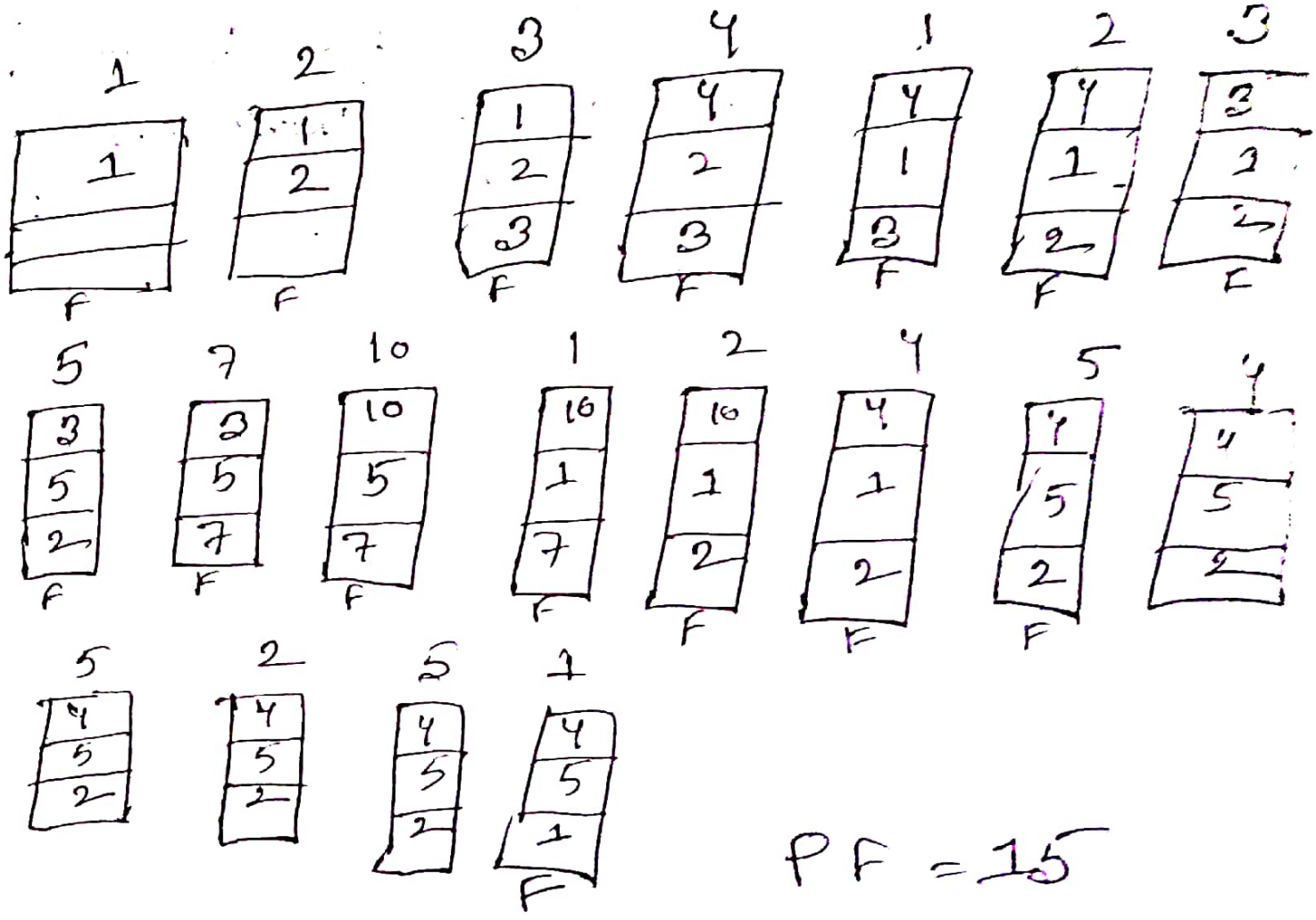
~~LRU~~

~~1, 2, 3, 4, 5, 6, 7~~ FIFO

Page string: 1, 2, 3, 4, 1, 2, 3, 5, 7, 10, 1, 2, 1, 5, 1, 5, 2, 5, 1

Find the page faults?

~~Page~~ Frame size 3

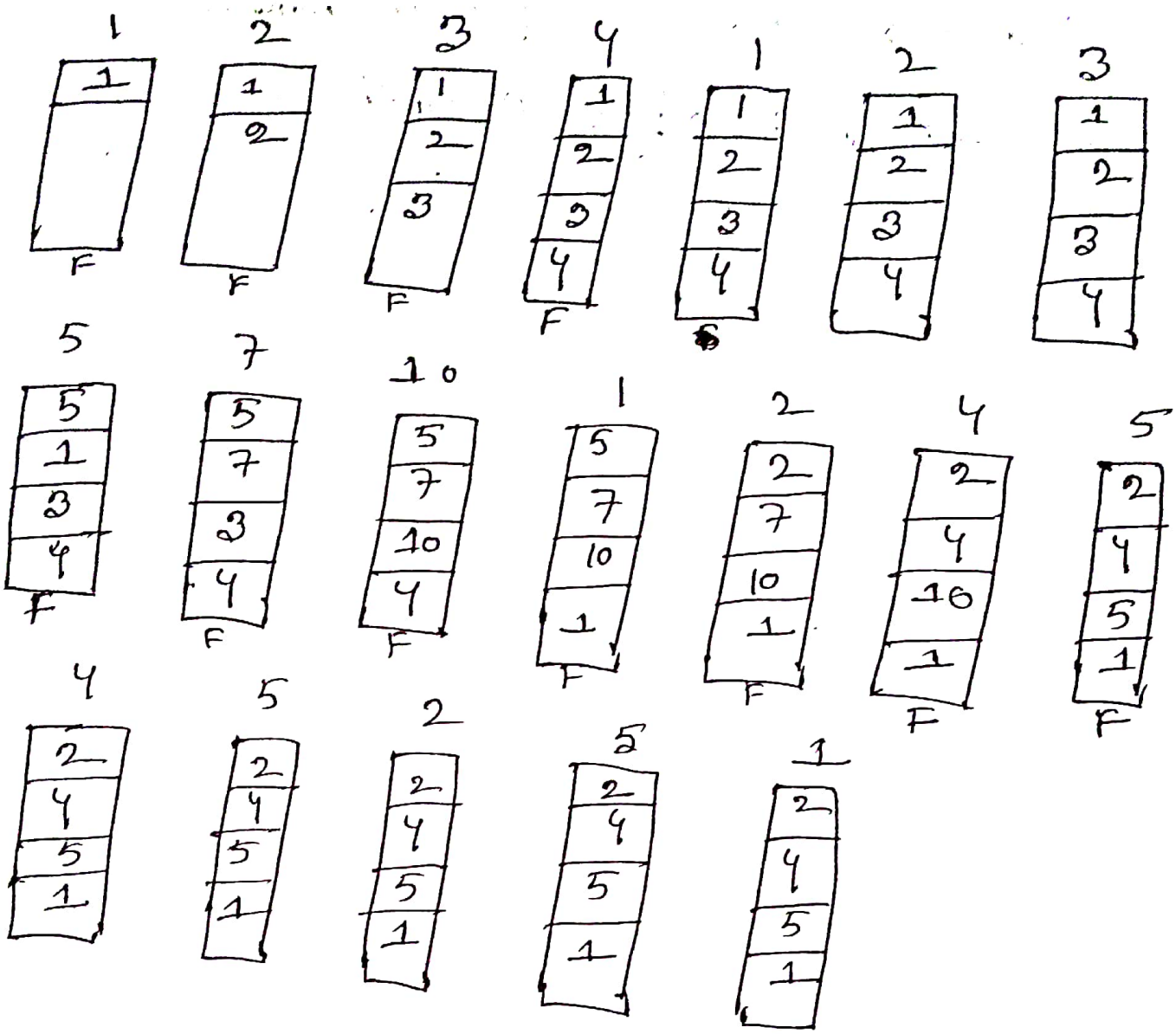


PF = 15

page string = 4

Page string:

1, 2, 3, 4, 1, 2, 3, 5, 7, 10, 1, 2, 4, 5, 4, 5, 2, 5, 1



PF = 11.

When page fault increasss OS get slower.

So, page fault decreases OS get faster.

If frame increases page fault decreases

- Belady's Anomaly is when frame increases page fault get no changes.
- What is Belady's Anomaly

10/04/2023

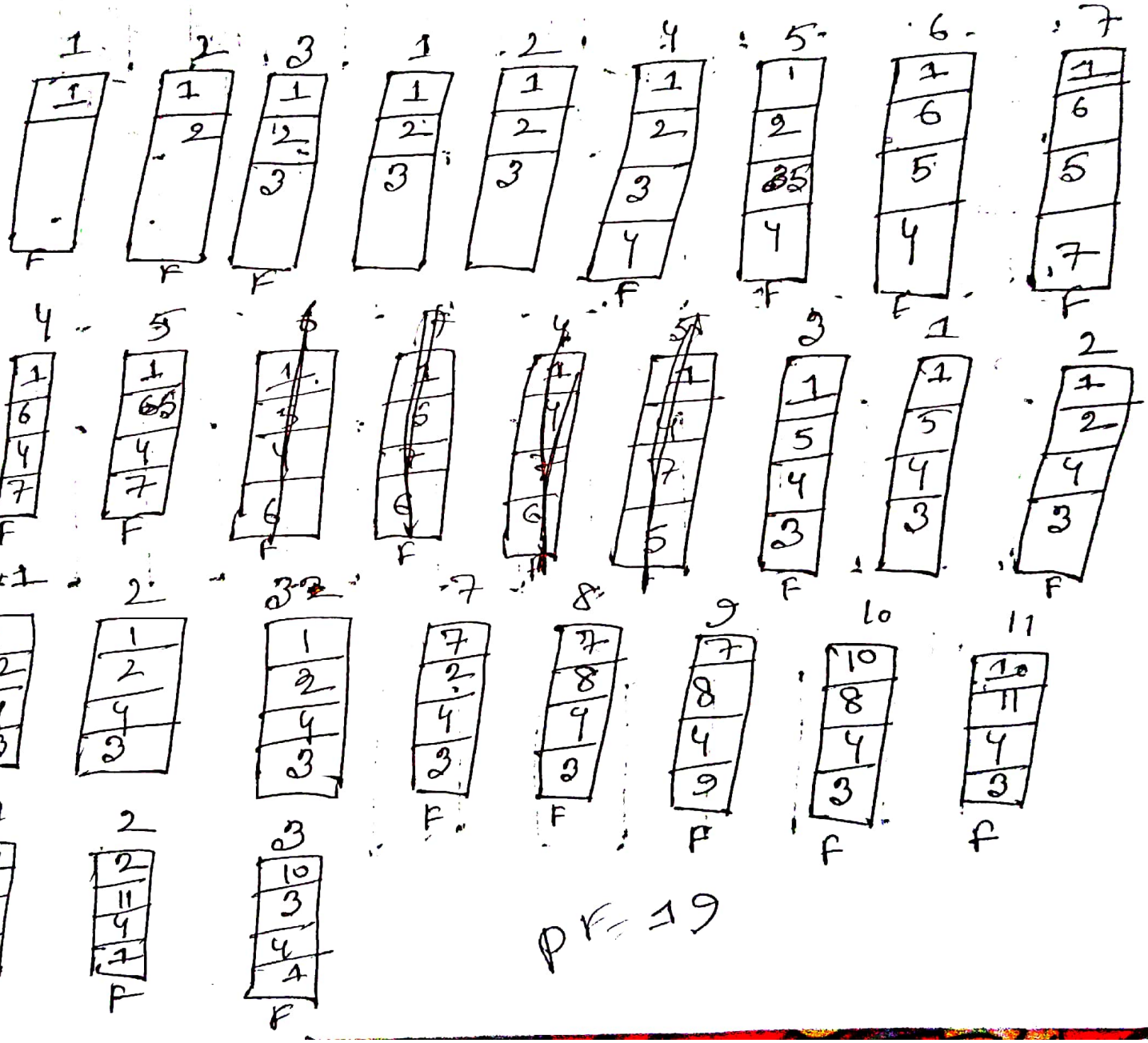
Least Recently Used Algorithm (LRU)

Frame size = 4

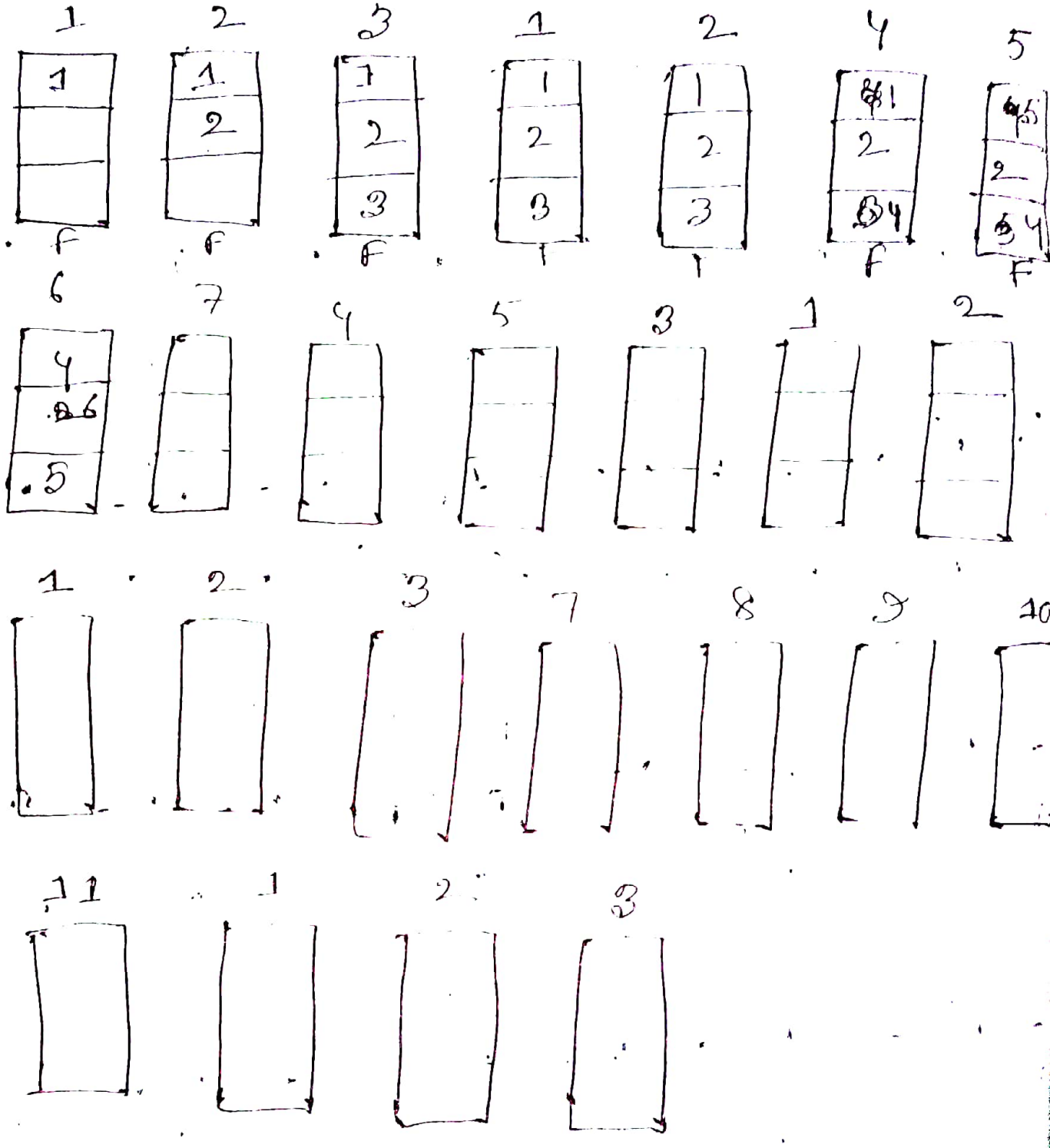
Page string:

1, 2, 3, 1, 2, 4, 5, 6, 7, 4, 5, 6, 7, 4, 5, 3, 1, 2, 1, 2, 3, 7, 8,

9, 10, 11, 1, 2, 3



1, 2, 3, 1, 2, 4, 5, 6, 7, 4, 5, 3, 1, 2, 1, 2, 3, 7, 8, 9, 10,
11, 1, 2, 3.

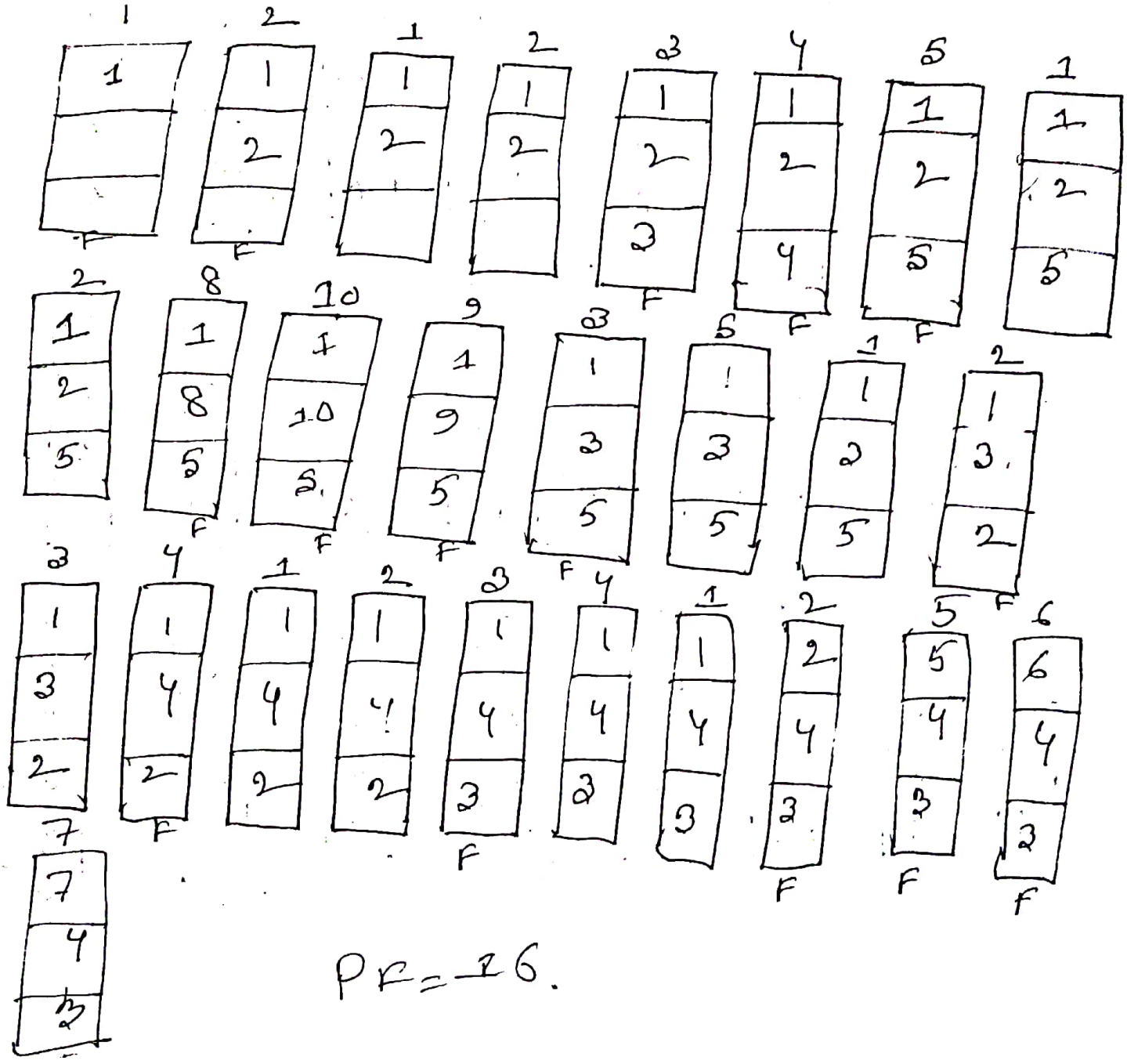


15/04/2023

Important

Optimal Page Replacement Algorithm

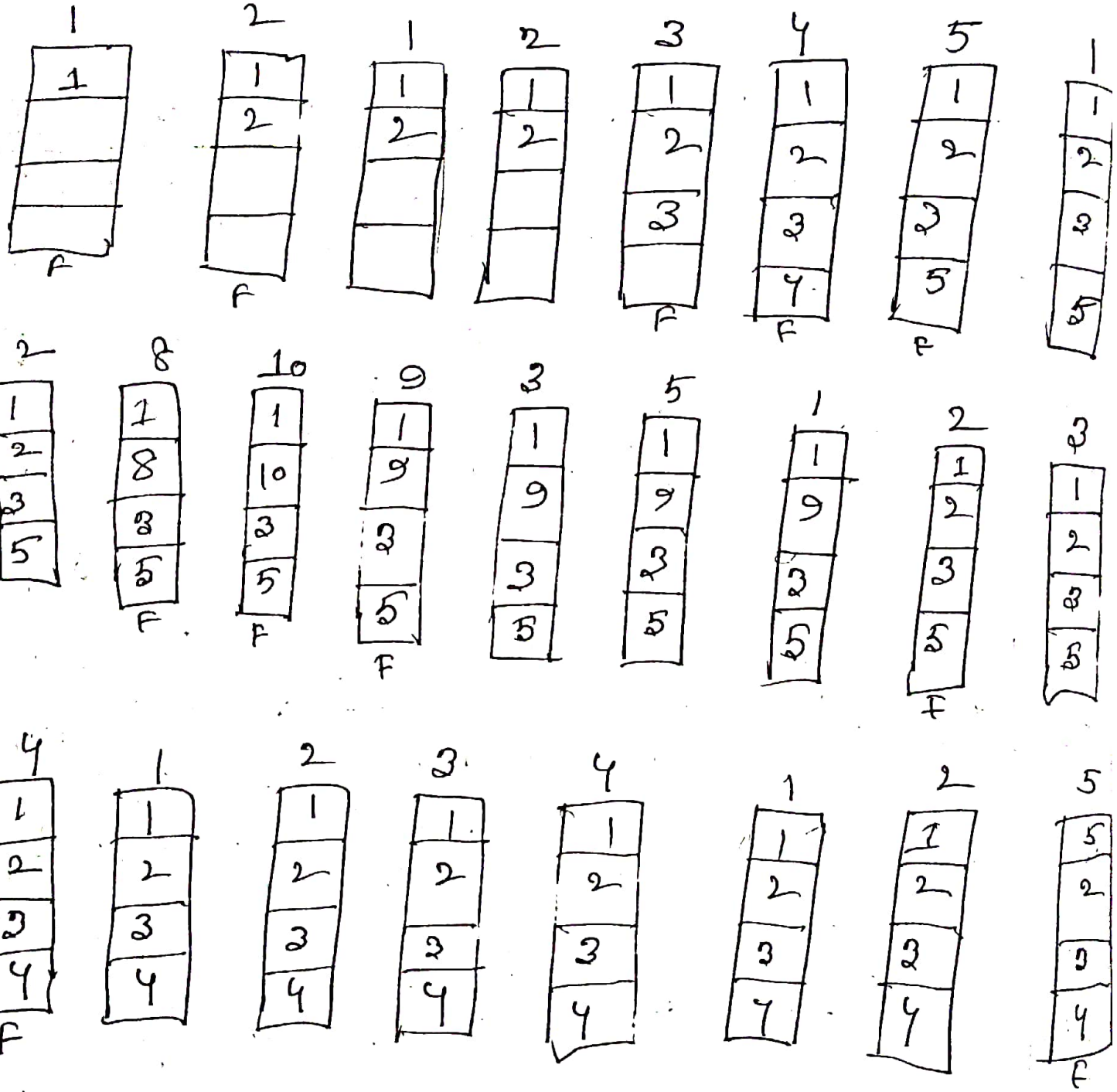
1, 2, 1, 2, 3, 4, 5, 1, 2, 8, 10, 9, 3, 5, 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, 5, 6, 7

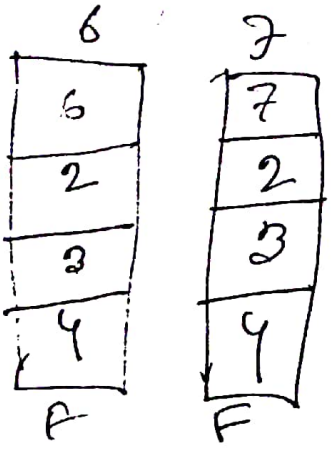


PF = 16.

optimum, optimal

1, 2, 1, 2, 3, 4, 5, 1, 2, 8, 10, 9, 3, 5, 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, 5, 6, 7.





pf = 13

06/05/2023 | Lab

LRU (least recently used Algorithm)

Optimal page Algorithm

06/05/2023

273 → page → Memory management

280 → swapping

Demand paging

Main memory → Hard Disk → Main mem

swapping

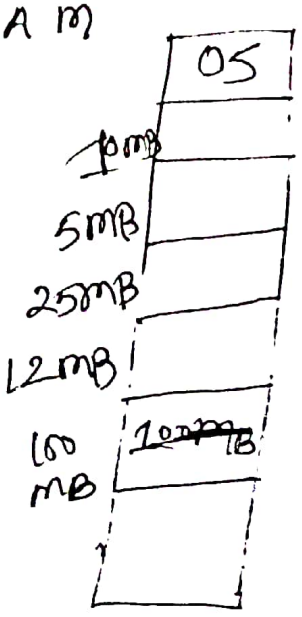
(*) Swapper who do the swapping.

283

Contiguous Memory Allocation.

First fit
Worst fit
best fit

RAM



(***) When requirment storage is satisfied its called Best fit.

286P

worst fit, First fit ⇒ when requirment size satisfied first time its called first fit.

⊛ Best Fit is the best strategy.

288P

Figure 9.6

289P

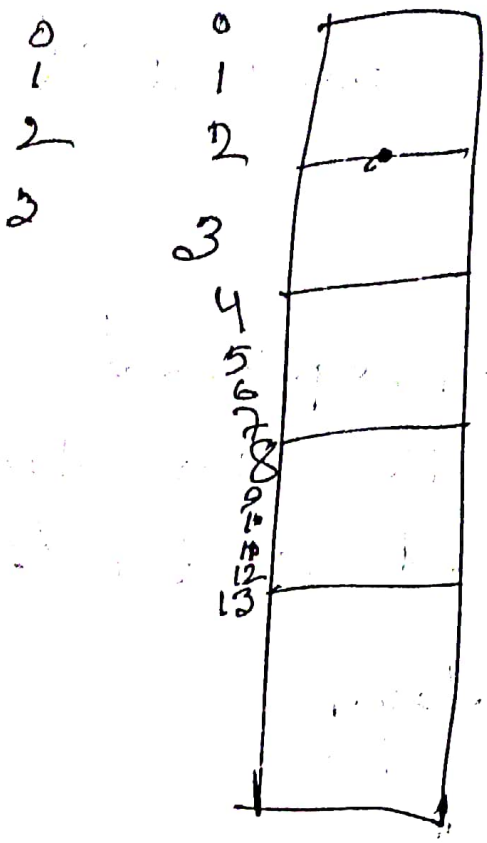
9.8 → Important

Logical memory ⇒ Hard Disk

Physical memory ⇒ RAM

→ data address and data

0	a
1	b
2	c
3	d
4	



5 × 4 + 0 → abcat value

= 20

i = 8

fig : 9.10

page table

TLB

Translation look aside buffer

Apurba ISHU

Figure 9.1.9 → Page 297.

outer Table

08/05/2023

paging → class Test saturday

Class Test

Page Table → Page no. frame no.

TLB

* What do you mean by TLB?
* What is the works of TLB?

Why use page table ?

* Page table use করলে tlb তেও use করবো কারণটা কি?
* 2 Level and 1 Level difference

9.5 Segmentation.

What is segmentation?

⇒

Segment table,

Figure 9.19

logical addres to physical address

Segment 0 → 1400 - 2399

1 বাদে

base + limit - 1

(1400 + 1000) - 1

= 2399

371page

Chapter - 11

File system Interface

(1) What do you mean by file attribu

A file's attributes : Name, Identifier, Type, Location, Size, Protection, Time, date and user identification.

373

File operations:

Figure 11.1 common file types → work's difference

while compile → obj file → error free file

executable file's work

grammatically

.bat operating system is loader file

379

Access Methods

→ Sequential access

→ direct access.

383 Directory structure

11.3.1

Single-level Directory

If there are no sub folder in a folder that is called single-level directory.

Two-level directory → If there are sub-fi

Figure: 11.8 → Tree-structured directory

13/05/2023

Lab

Memory Allocation :

Comparison of different kinds of fitting of memory.

total size → 2GB

Input → size of operating system

Arbitary

software load and size → as input

best fit, worst fit and first fit

2GB

OS = 100MB

2048 − 100MB

=

Software space = 30m

Best fit

worst fit

first fit

7th Edition

Theory

Monday
9:00pm

Fig: 11.9 → Acyclic-graph directory structure

@ 11.3.5

Chapter 12, 14, 15

Chapter → 14

Domain of protection:

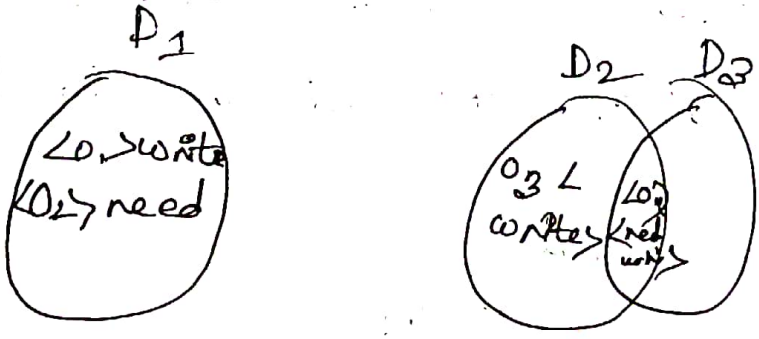


Fig: 14.3

Object / Domain	F1	F2	F3	Printer
D1	read			
D2			write	
D3		*read		write
D4				
D5				

Domain is a logical borden where some entity ~~do~~ belong

yahoo.com

respect of ~~geographical~~ distance

domain controllers

domain users

main.yahoo.com

There can be more domain controllers

Who configure domain controllers?
↓
an engineer.

* Access matrix → OS writes on access matrix using array
* Multidimensional array.

when there are a temporary permission it denotes as (*) sign. such as → * read.

546

14.7 not important

* Immediate
* selective vs general
* partial vs
* Temporarily vs permanent.

Security

Chapter-15 → important

P → 560 → 559

Security

1. Breach of confidentiality