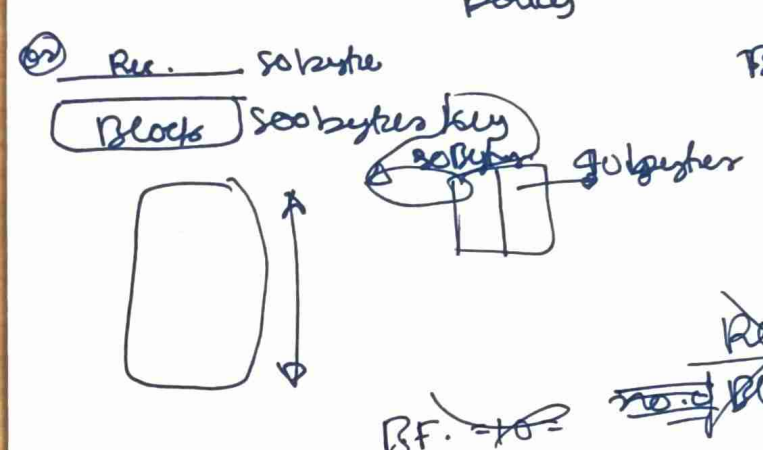


- Q1) main mem \rightarrow page
- Q2) optimum uniform replacement policy



BF = Buffer Factor = $10 \pm \frac{\text{Block size}}{\text{each Record size}}$

"no of Rec. per Block"

BF = 10

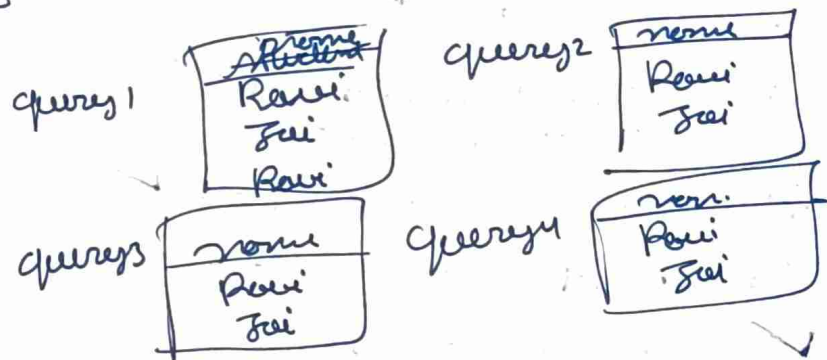
no. of Rec. = 28800

Q3)

enrolled			
name	branch		
Ravi	CSE		
Jai	CSE		
Ravi	CSSS		
Venu	CSE		

Paid			
name	Rr		
Ravi	800000		
Jai	400000		
Ravi	500000		

Q5) a b c d



- Q6) Natural Join
- Q7) a Comm. x, b Asso. x, c Full of Assoc. x, d Dist. x

- Q8) a Recover correct, b Count. all. rec., c commit then abort, d strict 2pl check Rec.

Q9) R \bowtie S

R(A B C D) \bowtie S(A E F)

H

Attributes.

Q10) memories (STD-ID, ptr)

STUDENT (STD-ID, STD-Name, STD-Dept, STD-Hotel)

Client \rightarrow dept \rightarrow Student table

Rot. = 6000 rpm
speed

avg
seek = 5 ms
time

avg
Access = seek time + Rot.
time time

For one
block
only.

4 Transac.

T1: Rs 1000 ^{Release.} 2000 ✓

T2: col. 10% s line. balance ✓
amt by 10% as interest

T3: deduct 200 (acc. service fee) ✓

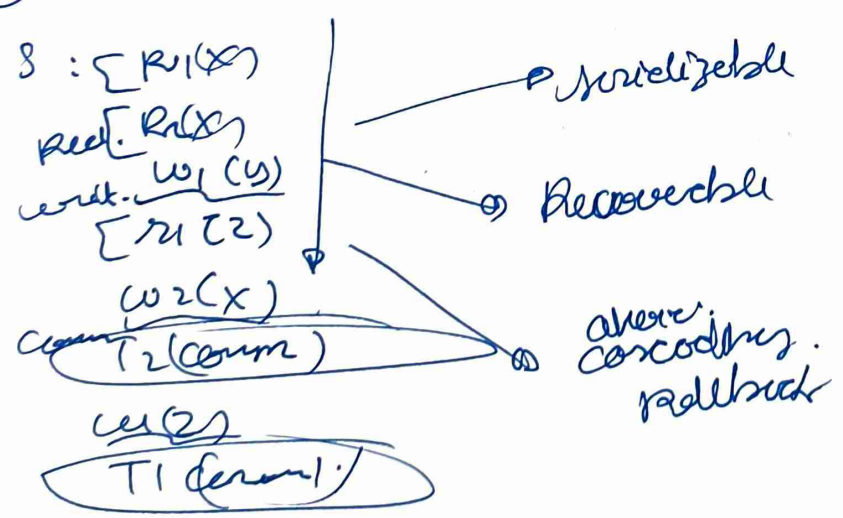
T4: deduct 1000 (loan payment) ✓

redo, redo, redo, undo

Q10

Index \rightarrow Isoperche.
 \rightarrow 2) + queries
performance.

Q11



Q12

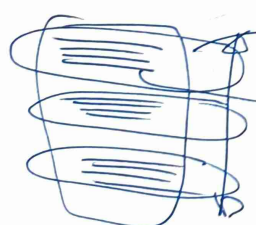
Materialized
views. can
be incremental.
maintain,
all
updated.
key?

disk sub time slow
 disk data transfer = 300mb/s
 tuple check
 ant > x → 10ms

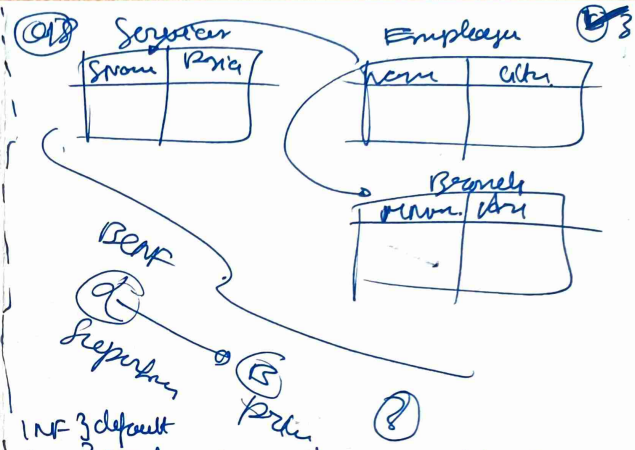
disk
 net
 4ms → data 300MB
 from
 base
 top of data X } 10ms?

- ②
- ③
- ④
- ⑤

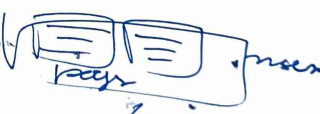
Read
 only
 transaction
 → detect data anomaly
 → Business Intell Rep.
 → not question
 → detect data
 → Analyst Report

③

 4096 bytes
 100 bytes
 size 100 bytes
 block factor = $\frac{\text{Block size}}{\text{each Rec. sz}} = \frac{4096}{100} = 40$
 + 1 head

pg 4



1NF 3 default
 2NF 3 no func. depend. (primary) other than primary key
 3NF 7
 BCNF 8 (complex) → 2NF +
 4NF
 5NF
 Prime(s) or. np → np

④

 Sort & write back
 no change
 Query process
 data in DBMS
 data anomaly
 backup & restore
 4GB no. of buff. begin
 → 2? why
 Main, mod
 Rel.
 in each Rel
 consistency check
 remove ambiguity
 select

Q21) power to boot
8 pages
writing 3 buff pages.
= 4

Q22) BPD → Rel ~~1~~ NF sure :)

Q23) transaction

Q24) "

Q25) RPD → Rel. 2 (ignum) (E)

Q26) Rel. Cal.

Q27) Rel. Cal.

Q28) serialize.

Q29) lock

Q30) dltk

Q31) R (A, B, C, D, E, F, G, H, I, J)

ABDI

Pri
loey {ABD} ~~1~~ sure :)

Q13) 10
2 ✓
3 ✓
4 ✓

Q14) 3 not the. desc. B + W.
2 ?
1 ✓
1 ?

Parent.
Modella.
child
Right
Whole.

Q15) enrolled
Modell coers. Relatio Rel
Btudo anent

art. 201.
unit.

"list all coers taken by student who
have 'Rel' transaction"

dltk
o seeks using
p from fu. 10m.
banded. 2 300mb CS
sup about 20 40m.