

NOVEMBER						
M	T	W	T	F	S	S
18	1	2	3	4		
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

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Friday

## CS 310 DBMS End Sem

Gourab Chakraborty

6.5.2021

19BCS118

1) Using emp name as a clustered index

is possible only when every employee will have a unique name.

If this is ensured, the tuples will

be organized according to emp name alphabetically.

Using emp id as a clustered index

is definitely possible considering

everyone already has a unique id assigned to them.

The tuples will be organized

according to emp id.

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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

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Sunday

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10:00

Using both empname & empid  
as clustered index may not be  
possible but it is possible  
two name one clustered index  
and one non-clustered index.

11:00

12:00

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3	4	5	6	7	8	9	10
10	11	12	13	14	15	16	17
17	18	19	20	21	22	23	24
24	25	26	27	28	29	30	31

2) DDL is important in SQL in DBMS because it is used to describe data structures and modify data.

DML is used to add, retrieve and update data; it is not important for creating database structures.

3) The statement is True.

A DBMS is typically shared among many users. Transactions from these users can be interleaved to improve the execution time of user's queries.

By interleaving queries, users do

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3	22	23	24	25	26	27
4	29	30	31			28

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- not have to wait for other user's transactions to complete fully before their own transactions begin.
- Without interleaving, if user A begins a transaction that will take 10 seconds to complete, and user B wants to begin a transaction, user B would have to wait an additional 10 seconds for user A's transaction to complete before the database would begin processing B's request.

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esday

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- 3) a) In transaction management and database consistency there is nothing the users must guarantee.
- The users must be honest, truthful, law-abiding and sincere when it comes to the bank transaction.
  - The users should not try any unethical methods to use the services and must not share their transaction details with anybody.
  - So, the user responsibility and

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Wednesday

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honesty cannot be assured in terms of transaction and database consistency.

b) In a multiprogramming environment where multiple transactions can be executed simultaneously, it is highly important to control the concurrency of transactions.

Concurrency control protocols to ensure atomicity, isolation, and ~~serialisation~~ serializability of concurrent transactions.

Integrity constraints must be maintained so that the database is consistent before and after the

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24	25	26	27	28	29	30

transaction.

It refers to the correctness of a database.

Ans 3) Yes, we can determine the key of relation with the help of instance. For Eg:

In a one to many relation we can consider the column with unique values as a primary.

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	T	F	S	S
M	2	3	4	5
T	9	10	11	12
W	16	17	18	19
T	23	24	25	26
F	30	31		1

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Sunday

Ans 6) a) CREATE CLUSTERED INDEX

cluster - ~~test~~ ON STUDENT TABLE

(Student Name Asc)

Query :-

SELECT Email FROM STUDENT TABLE

15.00 Output :-

Email
jaya@xyz.com
jk@xyz.com
Null
Krishna@pqr.com

b) Output :-

Student ID	Student Name	Email	Age
1005	Krishna	Krishna@pqr.com	22
1020	John	Jh@xyz.com	22
1030	John	NULL	23

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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

09.00

2). Relational Algebra :

10.00

 $\Pi_{R1.pid} (\sigma_{R1.pid = R2.pid \wedge R1.sid \neq R2.sid}$ 

11.00

(Pr1 Catalog  $\times$  Pr2 Catalog))

12.00

SQL

15.00

SELECT C.pid

16.00

FROM Catalog C

17.00

WHERE EXISTS (SELECT C1.sid

18.00

FROM Catalog C1

19.00

WHERE C1.pid = C.pid

AND C1.sid  $\neq$  C.sid)

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8	9	10	11	12	13	14
15	16	17	18	19	20	21
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29	30	31				

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09.00

8) CatalogParts

10.00	SID	PID	Cost	PID	Sname	Color
11.00	1	1	15	1	Ahash	Red
12.00	1	2	30	2	Ayaan	Blue
13.00	2	3	40	3	Mayank	Green
14.00	2	1	9			
	2	3	110			

15.00

Supplies:

16.00

17.00

18.00

19.00

SID	SName	Address
1	Mayank	Bihar
2	Ahash	JP

Output

S Name
Mayank
Ahash

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aturday

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	M	T	W	T	F	S	S
1						1	8
2						2	9
3	3	4	5	6	7	3	10
4	10	11	12	13	14	11	18
5	17	18	19	20	21	22	29
6	24	25	26	27	28	29	30

- q) The following view on Emp can be updated automatically by updating Emp.

CREATE VIEW TestEmp (eid, name, age, salary)

AS SELECT E.eid, E.ename,  
E.age, E.salary

FROM Emp E

WHERE E.age > 50