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CSE

DBMS END SEM

1. using empname 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 empname alphabetically

using empid as a clustered index is definetely possible Considering everyone has a unique id assigned to them. the tuples will be organized according to empid

using both empname and empid as clustered indexes may not be possible but it is possible to have one Clustered indx and one-non clustered index.

2-> DDL is important in SQL in DBMS because it is used to discribe data structures and modify data

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

3→ A DBMS is typically shared among many users. Transactions from these users can be ~~interated~~ interleaved to improve the execution time of users' queries. By interleaving queries users do not have to wait for other user's transaction to complete fully before their own transaction begins. without Interleaving if user A begins a transaction that will take 10 seconds to Complete, the user B wants to begins a transaction, user B would have to wait for additional 10 seconds for user A's transaction to Complete befor Database begins to proceed user B's transaction.

4.→

a→ in transaction management and database Consistency there is nothing the users must Gaurantee.

b→ the users must be honest, truthfull, law-abiding and sincere when it Comes to the bank transaction

c→ the users must not try any unethical method to use the services and must not share their transaction details with anybody.

d→ So, the users responsibility and honesty Cannot be assured in the terms of transaction and database Consistency.

4.6 → In a multiprogramming environment where multiple transactions can be executed simultaneously it is highly important to control the concurrency of transactions. Concurrency control protocol to ensure atomicity, isolation, and serializability of concurrent transaction.

Integrity constraints must be maintained so that the database is consistent before and after the transaction.
it refers to the correctness of database.

5→ Yes, we can determine the key of relation with the help of instance. for eg. :- In a one of many relation we can consider the column with unique values as a primary key.

7→

P(R1, Catalog)

P(R2, Catalog)

$\Pi_{R1.pid}\ \sigma_{R1.Pid = R2.pid \wedge R1.sid != R2.sid}\ (R1 \times R2)$

using the following

SID	PID	Cost
1	1	$10.00
2	1	$ 9.00
2	3	$ 34.00
3	1	$ 11.00

6→

(a) CREATE CLUSTERED INDEX ~~CLUSTER~~ cluster_1

ON STUDENTSTABLE (StudentName Asc)

↓

(To create a clustered index)

Query

SELECT Email from ~~student table~~ STUDENTSTABLE

Output

Email
Yashi@xyz.com
akash@yahoo.com
Nitin@gmail.com

Output

Student ID	Student Name	Email	Age
1006	Yashi	Yashi@xyz.com	20
9745	Ayaan	akash@yahoo.com	21
8236	Mayank	Null	21

9→ The following view on Emp can be updated automatically by updating Emp:

~~Create VIEW of Emp~~

Create VIEW Old Emp (eid, name, age, salary)
AS SELECT E.eid , E.ename , E.age , E.salary
From Emp E
WHERE E.age > 50

7→ Let the two supplies be R_1 and R_2

P(R_1, catalog)

P(R_2, Catalog)

$\Pi_{R_2.pid}\ \sigma\ R_1.pid = R_2.pid \wedge R.sid\ !=\ R_2.sid\ (R_1 \times R_2)$

using the following.

SID	PID	Cost
1	1	1000
2	1	2000
2	3	3000
3	1	4000

$R_1 \times R_2$ given as.

SID	PID	Cost	SID	PID	Cost
1	1	1000	1	1	1000
1	1	1000	2	1	2000
1	1	1000	2	3	3000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	2	1	2000
2	1	2000	2	3	3000
2	1	2000	3	1	4000
2	3	3000	1	1	1000
2	3	3000	2	1	2000
2	3	3000	2	3	3000
2	3	3000	3	1	4000

SID	PID	Cost	SID	PID	Cost
3	1	4000	1	1	1000
3	1	4000	2	1	2000
3	1	4000	2	3	3000
3	1	4000	3	1	4000

$\sigma R_1.PID = R_2.PID$ gives us:

SID	PID	Cost	SID	PID	Cost
1	1	1000	1	1	1000
1	1	1000	2	1	2000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	2	1	2000
2	1	2000	3	1	4000
2	3	3000	2	3	3000
3	1	4000	1	1	1000
3	1	4000	2	1	2000
3	1	4000	3	1	4000

$\sigma R_1.pid = P_2 Pid \wedge R_1.sid = R_2.sid$ gives us.

SID	PID	Cost	SID	PID	Cost
1	1	1000	2	1	2000
1	1	1000	3	1	4000
2	1	2000	1	1	1000
2	1	2000	3	1	4000
3	1	4000	1	1	1000
3	1	4000	2	1	2000

SQL:

```
SELECT  C.sid
FROM Catalog C
WHERE EXISTS (SELECT C1.sid
FROM Catalog C1
WHERE C1.pid = C.pid AND C1.sid = C.sid)
```

Ans 8) Catalog

SID	PID	Cost
1	1	15
1	2	30
1	3	40
2	1	9
2	3	110

Parts

PID	Pname	Color
1	abc	Red
2	def	Blue
3	xyz	green

Suppliers

SID	S name	address
1	X	a
2	Y	b

Output

Sname
X
Y