Roll no.:-
19BCS0744

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(19BCS0744)

1 Ans

→ Using emp name as a clustered index is possible only when every employee will have a unique name. If this is to be ensured, the tuples will be organized according to the emp name in aplabetical order.

→ Using empid as a clustered index is definitely possible considering everyone already has a unique id assigned to them. The tuples will be organized according to empid.

→ Using both emp name & empid as a clustered indexes may not be possible but if is possible to have one clustered index and one non-clustered index.

Birthday / Anniversary

June • 2015

Wk-26, (173-192)

Monday 22

(19BCS074)

2nd Ans.

→ DDL is important in representing information in DBMS because it is used to describe external and logical schemas.

→ DML is used to update and access data; it is not important for representing data.

(19BCS074)

(3rd Ans.) The Database management System is typically shared among many users in general. The transactions from these users can be interleaved to improve the execution time of the user's queries.

By the interleaving queries, users donot have to wait for other user's transactions to complete fully/completely before their own transaction begins. Without the interleaving if a user "X" begins a transaction that will take 10 seconds to complete, and user "Y" wants to begin a transaction, User "Y" would have to wait an other 10 seconds for user "X"'s transaction to complete before the database would begin processing user Y's request.

Birthday / Anniversary

(18CS074)

4th Ans (a). A user must garantee that his transaction does not corrupt data or insert nonsense in database. For Ex:- In a banking database, a user must garantee that a cash withdraw transaction accurately models the amount a person removes from his or her account. Generally a database application would be worthless if a person removed 2000 rupees from an ATM but the transaction set their balance to zero.

(b). A Data base management System must garantee that the transactions are executed fully and independently of the other transactions which are taking place. An essential propesty of DBMS is that a transaction should execute atomically or as if it is the only transaction running. Also, transactions will either completely fully, or will be aborted and the database returned to it's initial State. This ensures that the database remains consistent.

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(19BCS074).

Ans.

R(R1, Catalog)
C(R2, Catalog)

$\Pi_{R_1.Pid}\ \sigma_{R_1.Pid = R_2.Pid \wedge R1.sid != R_2.Pid}(R_1 \times R_2)$

Catalog:

SID	PID	Cost (₹) → in rupees
1	1	1
2	1	2
2	3	3
3	1	4.

~~Sol I :-~~

(19BCS074)

R1 X R2.

SID	PID	Cost (Z)	SID	PID	Cost (Z)
1	1	1	1	1	1
1	1	1	2	1	2
1	1	1	2	3	3
1	1	1	3	1	4
2	1	2	1	1	1
2	1	2	2	1	2
2	1	2	2	3	3
2	1	2	3	1	4
2	3	3	1	1	1
2	3	3	2	1	2
2	3	3	2	3	3
2	3	3	3	1	4
3	1	4	1	1	1
3	1	4	2	1	2
3	1	4	2	3	3
3	1	4	3	1	4

SQL Query :-

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

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$\sigma_{R1.Pid = R2.Pid}$ (1988CS074) gives us :-

SID	PID	Cost (Z)	SID	PID	Cost (Z)
1	1	1	1	1	1
1	1	1	2	1	2
1	1	1	3	1	4
2	1	2	1	1	1
2	1	2	2	1	2
2	1	2	3	1	4
2	3	3	2	3	3
3	1	4	1	1	1
3	1	4	2	1	2
3	1	4	3	1	4

$\sigma_{R1.Pid = R2.Pid \wedge R1.Pid \neq Pid}$.

SID	PID	Cost (Z)	SID	PID	Cost (Z)
1	1	1	2	1	2
1	1	1	3	1	4
2	1	2	1	1	1
2	1	2	3	1	4
3	1	4	1	1	1
3	1	4	2	1	2

⇒ Projecting on PID gives us a single part number - 1.

Birthday / Anniversary

'15	M	T	W	T	F	S	S
June	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					

'15	M	T	W	T	F	S	S
July			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	31		

(19BCS074)

7am 8th Ans

8

~~πsname(πsid(σcolor='Red'(Parts)) ⋈ Catalog)~~

πsname → The above mentained query in the question is an invalid query.

10 ~~(The question is invalid)~~

11 Explaination :- This relational algebra statement doesn't return anything because of the sequence of the projection operators. Once the sid is projected, it is the only field in the set. therefore, projecting on some will not return anything.

12

1pm

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9 Ans

```
CREATE VIEW SeniorEmp (eid, name, age
                       , Salary)
AS SELECT E.eid, E.ename, E.salary.
FROM Emp E
WHERE E.age > 50.
```