19Bcs071
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3) Ans. A DBMS is typically shared among many users. Transaction from these users can be interleaved to improve the execution time of user's queries. By interleaving queries, users do not have to wait for other user's transactions to complete fully before their own transactions begins. Without interleaving, if user A begins a transactions 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 user B's request.

~~7~~ Ans.- $P(R_1, catalog)$

$P(R_2, catalog)$.

$\Pi_{R1.pid}(\sigma_{R1.pid = R2.pid \wedge R1.sid != R2.sid}(R_1 \times R_2))$

Using the following:

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

$R_1 \times R_2$ gives us:

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

OR1.pid = R2.pid gives us:

SID	PID	cost	SID	PID	cost
1	1	$10.00	1	1	$10.00
1	1	$10.00	2	1	$9.00
1	1	$10.00	3	1	$11.00

2	1	$9.00	2	1	$9.00
2	1	$9.00	3	1	$11.00
2	3	$34.00	2	3	$34.00
3	1	$11.00	1	1	$10.00
3	1	$11.00	2	1	$9.00
3	1	$11.00	3	1	$11.00

$\sigma R_1.pid = R_2.pid \wedge R_1.sid != R_2.sid$ gives us:

SID	PID	cost	SID	PID	cost
1	1	$10.00	2	1	$9.00
1	1	$10.00	3	1	$11.00
2	1	$9.00	1	1	$10.00
2	1	$9.00	3	1	$11.00
3	1	$11.00	1	1	$10.00
3	1	$11.00	2	1	$9.00

3) Ans
the following view on emp can be updated automatically by updating emp:

Create view Senior Emp (eid, name, age, salary)
As SELECT E.eid, E.ename, E.age, E.salary
FROM Emp E
WHERE E.age > 50.

4) Ans
a) A user must guarantee that his or her transaction does not corrupt data or insert nonsense in the databases. For example, in a banking database, a user must guarantee that a cash withdraw transaction accurately models the amount a person removes from his or her account. A database application would be worthless if a person removed 20 dollars from an ATM but the transaction set their balance to zero!

b) A DBMS must guarantee that transactions are executed fully and independently of other transactions. An essential property of a DBMS is that a transaction should execute atomically, or as if it is the only transaction running. Also transactions will either complete fully, or will be aborted and the databases returned to it's initial state. This ensures that the database remains consistent.

2) Ans

- DDL is important in representing information in DBMS because it is used to describe external and logical schems
- DML is used to update and access data; it is not important for representing data.

1) Ans 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 empnames alphabatically.

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

Using both ~~every~~ emp name & empid as a clustered indexes many no of possible but it is possible two name one clusteled index and one non-clustered index.