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1) Using emp name as a clustered index is possible only when every employee will have a unique name. If this is ensured, the table will be organized according emp name alphatitically

Using empid as a clustered index is definitely possible considering everyone already has a unique id assigned to them the by table will be organized according to empid.

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

(2) * DDL is important in representing information in DBMS need to because it need to describe external and logical schemas

* DML is used to update and a used data it is not important for representating data

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(5) 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 not have to wait for other user's transactions to be complete fully before their own transaction is to complete begins. without interleaving, if users A begins a transaction that will take 10 seconds to complete; and user B wants to begins a transaction user B would have to wait an additional 10 seconds for user's A's transaction for complete before the database would begin processing user's B's request.

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(4) a) A user must guarantee that his or her transaction does not corrupt data or insert non uniue in the database. 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 here account. A database application would be worthless if a person removed 20 dollar 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 the only transaction running. Also transaction will either complete fully or will be aborted and the database returned to its initial state This ensures that the database remains consistent

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

(7) *RA

$P(R_1, Catalog)$

$P(R_2, Catalog)$

$\pi R_1.bid \sigma R_1.pid = R_2.bid \wedge R_1.sid \neq R_2.sid (R_1 \times R_2)$

* 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).
```

(8) $\pi Sname (\pi sid ((\sigma Col\ or = Oredo (Parts)) \times (\neg Cost < 100 (Catalog)) \times Suppliers))$

Invalid query.

The relational algebra statment does not return anything because of the sequence of projection operators. Once the sid is projected, it is the only field in the set. Therefore, projecting sname will not return anything.

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

```
CREATE VIEW SeniosEMP (eid, ename, age, salary)
AS SELECT E.eid, E.ename, E.age, E.salary.
FROM EMP E.
  WHERE E.age > 50.
```