CS310 06-05-2024
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19BCS004

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 definitely possible considering everyone already has a unique id assigned to them. The tuples will be organized according to empid.

Using both empname & empid as a clustered indexes may not be possible but it is possible to have one clustered index and one non-clustered index.

2. • representing info
external
logical schemas

• access
update
representing data

3. DBMS interleave the actions of different transactions instead of executing transactions one after the other. A DBMS is typically shared by more than one user. So, it is not practical to execute transactions one after the other since the users have to wait for previous users to finish up. Transactions from these users can be interleaved to improve the execution time of users' queries. The first users' transaction has to complete before the processing of second users' request without interleaving.

4. (a) A users' transaction must not corrupt present data or insert data that is illogical. Although this usually does not happen, but through certain loopholes an entire banking system can faces issues. A user should be honest, sincere, law abiding and keep the contract made with the bank.

(b) A DBMS must guarantee that every transaction which takes place is executed fully & independent of other such transactions.

The transaction must execute fully or abort successfully and return the database to its original state ensuring its consistency.

6. ~~The following query can be used for 1st part:~~

6. CREATE CLUSTERED INDEX newthing ON ~~Student Name~~ Tablename. StudentName ; is the query required to create a clustered index.

In order to get only email:

SELECT newthing.Email FROM (CREATE CLUSTERED INDEX newthing ON Tablename. StudentName);

If the clause WHERE S.Age >= is added (changing S with tablename because of above assumption), the output will be

~~Th@~~ Null
Th@myz.com
Krishna@pgr.com

Akanksha Nuya
classmate
Date
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7. R(R1, Catalog)
R(R2, Catalog)

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

SID	PID	~~tot~~ Cost
1	1	7
2	2	6
3	3	5
3	1	9

~~R1 X R2 gives~~ :

$\sigma_{R1.pid = R2.pid \wedge R1.sid != R2.sid}$ gives

SID	PID	Cost	SID	PID	Cost
1					
2					
3					

8. All suppliers that sell parts of red color which costs less than 100

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

CREATE VIEW newEmp (eid, name, age, salary) AS SELECT E.eid, E.ename, E.age, E.salary FROM Emp E WHERE E.age > 40

5. You cannot determine a key of a relation given only one instance of the relation. The same relation may have an instance that contains a totally different set of tuples, and we cannot make predictions about them based only upon the instance that we are given