**SQL DRILLS**

Cartesian Joins

Part 1: 25 \* 10 = 250

Part 2

|  |  |
| --- | --- |
| 1 | 10 |
| 1 | 11 |
| 1 | 12 |
| 2 | 10 |
| 2 | 11 |
| 2 | 12 |
| 3 | 10 |
| 3 | 11 |
| 3 | 12 |
| 4 | 10 |
| 4 | 11 |
| 4 | 12 |

Foreign Keys

employees: employee\_id PK, first\_name, last\_name, department\_id FK

departments: id PK, dept\_name

ACID

Atomicity: The atomicity acid property in SQL. It means either all the operations (insert, update, delete) inside a transaction take place or none. Or you can say, all the statements (insert, update, delete) inside a transaction are either completed or rolled back.

Consistency: This SQL ACID property ensures database consistency. It means, whatever happens in the middle of the transaction, this acid property will never leave your database in a half-completed state.

* + If the transaction completed successfully, then it will apply all the changes to the database.
  + If there is an error in a transaction, then all the changes that already made will be rolled back automatically. It means the database will restore to its state that it had before the transaction started.
  + If there is a system failure in the middle of the transaction, then also, all the changes made already will automatically rollback.

Isolation: Every transaction is individual, and One transaction can’t access the result of other transactions until the transaction completed. Or, you can’t perform the same operation using multiple transactions at the same time. We will explain this SQL acid property in a separate article.

Durability: Once the transaction completed, then the changes it has made to the database will be permanent. Even if there is a system failure, or any abnormal changes also, this SQL acid property will safeguard the committed data.

CASES

INDICES

“SQL Indexes are nothing but optional structure associated with the table which may or may not improve the performance of Query”

“In simple words suppose we want to search the topic in to book we go to index page of that book and search the topic which we want. Just like that to search the values from the table when indexing is there you need not use the full table scan.”

SQL Indexes are nothing but way of reducing the cost of the query. More the cost of the query less the performance of the query. The main task of query tuner is to reduce the cost of the query using indexing, Reduce the Full table scans, reduce the time to fetch the records from the query.

There are following types of SQL Indexes:

1.Normal index

2.Unique Index

3.Bit Map Index

4.Composite Index

5.B-Tree Index(Oracle considered Normal indexes as B-Tree Indexes)

6.Function Based Index

7.Clustered Index

8.Non-Clustered Index.