

Beaconfire Inc, Home Work, Week2 Day9.

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Short Answer:

1. What is an aggregate function? What are some examples of aggregate functions?

-> to calculate or to compute on a set of values, then return a single scalar value. Ex: MIN(), MAX(), COUNT(), AVG(), SUM()... we often use with GROUP BY

2. What are joins? What are the basic types of joins?

-> are used to combine two or more table or data set on a row by row level base on matching column. The basic types of joins are Inner join, left join, right join, full outer join, cross join, self join.

3. What is a sub-query?

-> sub-query is query that appears in another query statement. It's also refer to sub-select or net select. Like we can have sub-query in where clause.

4. What are set operators? How is it different from a join?

-> combine to result of two or more component query to a single result.

Join combine column from separate table, but set combine row from separate table.

5. What are the differences between UNION and UNION ALL?

-> UNION return all unique rows, UNION ALL allow return duplicate rows.

6. What are some rules you have to follow when you use set operators?

-> both query must be same number column, and same data type. If need order the result, must put to the end of statement.

<https://codingsight.com/t-sql-set-operators-part-1-union-and-union-all/>

7. What are views? How is it different from a table? What happens if you modify data on view?

-> similar to virtual table, consist row and column just like table. it builds on the top of table It just display the data but not hold any data, if data on the table change, the view will following change too. If we modify data on view, the source data will modify as well.

8. What is user defined stored procedure? Why do you need it?

-> are just stored procedure by create by user. It contain one or more SQL statement.

We need it because they can be used to encapsulate and represent business transactions. For example, you can create a stored procedure to represent a product sale, a credit update, or the addition of a new customer.

9. What are indexes? Why are they needed?

-> it use for store and optimize data fetch time or (get data by index) operating same index on book.

Because indexed improves the speed of retrieval operation on table, and are special look up table that will be use by the database search engine.

10. Is index always useful? Is it a good idea to always create as many indexes as possible?

-> NO, it should be used for large table, not small. And avoid using with column that return high percentage of data rows. It is not good idea to create many indexed, because it's trade off like, more index you have in the table mean the slower INSERT, UPDATE, and DELETE operations will be.

11. How is data stored if there is no clustered index? How about when you create a clustered index?

-> Non-Clustered Indexes will NOT store data in the Leaf Pages, instead they'll point to the rows they're referencing or stored in a separate location from the data table. A non-clustered index is like a book index, which is located separately from the main contents of the book.

-> Clustered Indexes is created by stored data in Leaf Pages of balance tree structure, and sort them based on the Key values of the column you choose.

12. What are the differences between clustered and non-clustered indexes?

-> If table contains a clustered index the data row on the table stored in sorted order, and call clustered table. can be only one clustered index per table. Clustered index is faster. requires less memory for operations. In clustered index, index is the main data.

If no clustered index on table mean data row are stored unordered structure that call HEAP. A table can have multiple non-clustered index. In Non-Clustered index, index is the copy of data.