1. What is SQL and short-cut for?

Answer:

- SQL stands for Structured Query Language.
- SQL is used to communicate with a database.
- SQL lets you access and manipulate databases.

2. What SQl can do?

Answer:

- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views
- SQL can execute queries against a database

3. What SQL data type?

Answer:

- SQL Data Type is an attribute that specifies the type of data of any object.
- SQL Server offers six categories of data types.

1) Exact Numeric Data Types:

- Such as: bigint,int,smallint,tinyint,bit,decimal,numeric,money,smallmoney.

2) Approximate Numeric Data Types:

- such as : Float ,real.

3) Date and Time Data Types:

- Such as :dataTime,smalldatatime,date,time.

4) Date and Time Data Types:

-Such as: char,varchar,varchar(max),text.

5) Binary Data Types:

-Such as: binary ,var binary, var binary(max),image.

6) Misc Data Types:

- such as:sql-variant , timestamp , uniqueidentifier ,xml ,cursor,table.

4. Create database?

Answer:

- statement is used to create a new SQL database.
- **Syntax:** create database databaseName ;

5. Create tables?

Answer:

- statement is used to create a new table.
- **Syntax:** create table table_name(
  Column1 datatype,
  Column2 datatype,
  Column3 datatype
  );

6. Drop table?

- statement is used to remove a table definition and all the data, indexes, triggers, constraints and permission specifications for that table.
- **Syntax:** drop table table_name;

7. Drop columns?

- Statement is used to delete a column in an existing table.
- **Syntax:**
  alter table table_name drop column column_name;

8. Select?

- statement is used to select data from a database.
- The data returned is stored in a result table, called the result-set.
- **Syntax:**

  select *column1*, *column2*
  from *table_name*;

9. Insert?

- The SQL INSERT INTO Statement is used to add new rows of data to a table in the database.
- **Syntax:**

  There are two basic syntax.

  1) INSERT INTO TABLE_NAME (column1, column2, column3)
     VALUES (value1, value2, value3);
  2) INSERT INTO TABLE_NAME VALUES (value1,value2,value3);

10. Delete?

- is used to delete the existing records from a table.
- **Syntax:**

  DELETE FROM table_name WHERE [condition];

11. Where clause ?

- The SQL WHERE clause is used to specify a condition while fetching the data from a single table or by joining with multiple tables. If the given condition is satisfied, then only it returns a specific value from the table.
- The WHERE clause is not only used in the SELECT statement, but it is also used in the UPDATE, DELETE statement.
- **Syntax:**

  SELECT column1, column2, columnN
  FROM table_name
  WHERE [condition]

12. Update?

- The SQL UPDATE Query is used to modify the existing records in a table. You can use the WHERE clause with the UPDATE query to update the selected rows, otherwise all the rows would be affected.
- **Syntax:**

  UPDATE table_name
  SET column1 = value1, column2 = value2...., columnN = valueN
  WHERE [condition];

13. Aliases?

- You can rename a table or a column temporarily by giving another name known as **Alias**. The use of table aliases is to rename a table in a specific SQL statement. The renaming is a temporary change and the actual table name does not change in the database. The column aliases are used to rename a table's columns for the purpose of a particular SQL query.
- **Syntax:**

  The basic syntax of a **table** alias is:

  ```
  SELECT column1, column2
   FROM table_name AS alias_name
    WHERE [condition];
  ```

  The basic syntax of a **column** alias is:

  ```
  SELECT column_name AS alias_name
  FROM table_name
  WHERE [condition];
  ```

14. Joins?

- The SQL **Joins** clause is used to combine records from two or more tables in a database. A JOIN is a means for combining fields from two tables by using values common to each.

15. Types of join?

- There are different types of joins available in SQL:
  - INNER JOIN : returns rows when there is a match in both tables.
  - LEFT JOIN : returns all rows from the left table, even if there are no matches in the right table.
  - RIGHT JOIN : returns all rows from the right table, even if there are no matches in the left table.

- FULL JOIN : returns rows when there is a match in one of the tables.
- SELF JOIN : is used to join a table to itself as if the table were two tables, temporarily renaming at least one table in the SQL statement.
- CARTESIAN JOIN : returns the Cartesian product of the sets of records from the two or more joined tables.

16. sql functions?

- SQL has many built-in functions for performing calculations on data
    - **SQL Aggregate functions:**

      SQL aggregate functions return a single value, calculated from values in a column.

        - AVG() - Returns the average value
        - COUNT() - Returns the number of rows
        - FIRST() - Returns the first value
        - LAST() - Returns the last value
        - MAX() - Returns the largest value
        - MIN() - Returns the smallest value
        - SUM() - Returns the sum

    - **SQL Scalar functions**:

      SQL scalar functions return a single value, based on the input value.

        - UCASE() - Converts a field to upper case
        - LCASE() - Converts a field to lower case
        - MID() - Extract characters from a text field
        - LEN() - Returns the length of a text field
        - ROUND() - Rounds a numeric field to the number of decimals specified
        - NOW() - Returns the current system date and time
        - FORMAT() - Formats how a field is to be displayed

17. stored procedures?

- A stored procedure is a prepared SQL code that you can save, so the code can be reused over and over again.

- So if you have an SQL query that you write over and over again, save it as a stored procedure, and then just call it to execute it.

- You can also pass parameters to a stored procedure, so that the stored procedure can act based on the parameter value(s) that is passed.

- **Syntax:**

  CREATE PROCEDURE *procedure_name*
  AS
  sql_statement
  GO;

- EXEC *procedure_name*;

18. Primary key?

- The PRIMARY KEY constraint uniquely identifies each record in a table.
- Primary keys must contain UNIQUE values, and cannot contain NULL values.
- A table can have only ONE primary key; and in the table, this primary key can consist of single or multiple columns (fields).

19. foreign key?

- A FOREIGN KEY is a key used to link two tables together.
- A FOREIGN KEY is a field (or collection of fields) in one table that refers to the PRIMARY KEY in another table.
- The table containing the foreign key is called the child table, and the table containing the candidate key is called the referenced or parent table.