Part2: What is the difference between the following objects in SQL Server

1. batch, script and transaction

A batch is a set of Transact-SQL statements that are interpreted together by SQL Server. They are submitted together, and the end of the batch is detected by usage of the keyword GO.

1. trigger and stored procedure

A stored procedure is a user defined piece of code written in the local version of PL/SQL, which may return a value (making it a function) that is invoked by calling it explicitly.

A trigger is a stored procedure that runs automatically when various events happen (eg update, insert, delete).

1. stored procedure and functions
2. drop, truncate and delete statement

DELETE is a DML (Data Manipulation Language) command. This command removes records from a table. It is used only for deleting data from a table, not to remove the table from the database.

TRUNCATE TABLE is similar to DELETE, but this operation is a DDL (Data Definition Language) command. It also deletes records from a table without removing table structure, but it doesn’t use the WHERE clause

The DROP TABLE is another DDL (Data Definition Language) operation. But it is not used for simply removing data from a table; it deletes the table structure from the database, along with any data stored in the table.

1. select and select into statement
2. local and global variables

**Local variable:**

* A user declares the local variable.
* By default, a local variable starts with **@.**
* Every local variable scope has the restriction to the **current batch or procedure** within any given session.

**Global variable:**

* The system maintains the global variable**.**A user cannot declare them.
* The global variable starts with **@@**
* It stores **session related information**.

1. convert and cast statements
2. DDL,DML,DCL,DQL and TCL

[DDL](https://www.geeksforgeeks.org/features-of-structured-query-language-sql/) or Data Definition Language actually consists of the SQL commands that can be used to define the database schema.

Like Ceate ,drop , alter ,truncate

**DQL**statements are used for performing queries on the data within schema objects.

DML :deals with the manipulation of data present in the database

Like insert update delete

DCL includes commands such as GRANT and REVOKE which mainly deal with the rights, permissions, and other controls of the database system. Like grant and revoke

1. For xml raw and for xml auto
2. Table valued and multi statemcent function

**Table valued** : table is specified in the return clause ,and doesn’t have associated return variables ,

Select stmt is the single select statement that defines the return values

**multi statemcent function**: table is specified in the return clause ,function body is used as transact sql statements that populate a table return type

,@return variable is used to store and accumulate rows that are reyurned as a value

1. Varchar(50) and varchar(max)
2. Datetime, datetime2(7) and datetimeoffset(7)

**datetime2 can be considered as an extension of the existing datetime type that has a larger date range, a larger default fractional precision, and optional user-specified precision**.

The DateTimeOffset structure **represents a date and time value, together with an offset that indicates how much that value differs from UTC**. Thus, the value always unambiguously identifies a single point in time

1. Default instance and named instance
2. SQL and windows Authentication

SQL Authentication: Database administrators create SQL logins and provide appropriate permissions for users to authenticate themselves to SQL Server. Users need to specify the login and password while connecting to SQL Server

windows Authentication : , the user should first authenticate himself within [Active Directory](https://www.quest.com/solutions/active-directory/what-is-active-directory.aspx). SQL Server authenticates users through the Windows principal token in the OS. With that, SQL Server does not ask for a password for identity validation. Therefore, Windows confirms users’ identities for authentication. SQL Server does not store the credentials in the Windows authentication. The connection using Windows authentication is called a trusted or integrated connection.

1. Clustered and non-clustered index
2. Group by rollup and group by cube

ROLLUP operators let you extend the functionality of GROUP BY clauses by calculating subtotals and grand totals for a set of columns. The CUBE operator is similar in functionality to the ROLLUP operator; however, the CUBE operator can calculate subtotals and grand totals for all permutations of the columns specified in it.

1. Sequence object and identity
2. Inline function and view

A view in SQL is a virtual table based on the result-set of an SQL statement. A view

contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.

**the inline table valued function can be built with a parameter where a view cannot**

1. Table variable and temporary table
2. Row\_number() and dense\_Rank() function

 ROW\_Number() SQL RANK function to get a unique sequential number for each row in the specified data. It gives the rank one for the first row and then increments the value by one for each row. We get different ranks for the row having similar values as well.

We use DENSE\_RANK() function to specify a unique rank number within the partition as per the specified column value. It is similar to the Rank function with a small difference.

In the SQL RANK function DENSE\_RANK(), if we have duplicate values, SQL assigns different ranks to those rows as well. Ideally, we should get the same rank for duplicate or similar values.