SQL

**Q. What are the sub sets of SQL?**

• Data Definition Language

• Data Manipulation Language

• Data Control Language

**Q. What is Data Definition Language?**

* Data Definition Language (DDL) allows us to create, alter, and delete database objects such as schemas, tables, views, sequences, catalogs, indexes, and aliases.

**Q. What is Data Manipulation Language?**

* DML is a language, which enables users to access and manipulate data.
* Data Manipulation Language is used to Perform below Operations:

• Insertion of data into the database

• Retrieval of data from the database

• Updating data in the database

• Deletion of data in the database

**Q. What is Data Control Language?**

* Data Control Language (DCL) allows us to control access to the database. 'DCL' commands include-

'GRANT' to allow specific users to perform specified tasks

'REVOKE' to cancel previously denied or granted permissions

**Q. What is referential integrity?**

* Referential integrity refers to the consistency that must be maintained between primary and foreign keys, i.e. every foreign key value must have a corresponding primary key value.

**Q. What is the difference between group by and order by?**

* Group by controls the presentation of the rows; order by controls the presentation of the columns for the results of the SELECT statement.
* GROUP BY: arrange identical data into groups.
* ORDER BY: sort the data in ascending or descending order.

**Q. What is a sub select? Is it different from a nested select?**

* Subselect is a select, which works in conjunction with another select. A nested select is a kind of sub select where the inner select passes to the where criteria for the outer select.

**Q. What is the use of CASCADE CONSTRAINTS?**

When this clause is used with the DROP command, a parent table can be dropped even when a child table exists.

**Q. What are the advantages of procedures?**

Advantages of procedures:

• Loaded once and used many times.

• Performance better coz all SQL statements are sent in one go from the application to the database.

• Security (no object privileges are given directly).

• Invoker's rights possible.

• Data integrity, productivity.

**Q. Differentiate between a primary key and a unique key.**

- By default, clustered index on the column are created by the primary key whereas no clustered index are created by unique key.   
  
- Primary key does not allow NULLs, but unique key allows one NULL.

**Q. Differentiate between DELETE and TRUNCATE and Drop .**

- Truncate and Drop cannot be rolled back while Delete can be.   
  
- Truncate keeps the lock on table while Delete keeps the lock on each row.   
  
- Truncate resets the counter of the Identity column while Delete does not do so.   
  
- Trigger is not fired in Truncate while it happens in Delete.

**Q. Explain different types of Locks in SQL Server.**

There are 3 kinds of locks in SQL Server:

i.) **Shared locks:** They are used for operations, which do not allow any change or update of data. For e.g.

SELECT

ii.) **Update locks:** They are used when SQL Server wants to modify a page. The update page lock is then promoted to an exclusive page lock before actually making the changes.

iii.) **Exclusive locks**: They are used for the data modification operations. For e.g.

UPDATE, INSERT, or DELETE.

**Q. What is difference between View and Materialized view?**

- View result set doesn’t save anywhere on disk and executes the query definition whenever they are called, while materialized view are disk based and its result set table is updated periodically.  
  
- Materialized view is similar to regular views but the output of select query has been saved to a table.  
  
- View either shows the latest data all the time while the materialized view only shows the fresh data after its result table is updated by setting a schedule or based on the change in the underlying tables.  
  
- The performance of the view depends on how good the selected statement the view has. If the select statement has too many joins then it the view will perform poorly.  
  
- While in the case of materialized view, we are querying a table, which may also be indexed, that increase its performance

## Statement Vs PreparedStatement Vs CallableStatement In Java :

|  |  |  |
| --- | --- | --- |
| **Statement** | **PreparedStatement** | **CallableStatement** |
| It is used to execute normal SQL queries. | It is used to execute parameterized or dynamic SQL queries. | It is used to call the stored procedures. |
| It is preferred when a particular SQL query is to be executed only once. | It is preferred when a particular query is to be executed multiple times. | It is preferred when the stored procedures are to be executed. |
| You cannot pass the parameters to SQL query using this interface. | You can pass the parameters to SQL query at run time using this interface. | You can pass 3 types of parameters using this interface. They are – IN, OUT and IN OUT. |
| This interface is mainly used for DDL statements like CREATE, ALTER, DROP etc. | It is used for any kind of SQL queries which are to be executed multiple times. | It is used to execute stored procedures and functions. |
| The performance of this interface is very low. | The performance of this interface is better than the Statement interface (when used for multiple execution of same query). | The performance of this interface is high. |