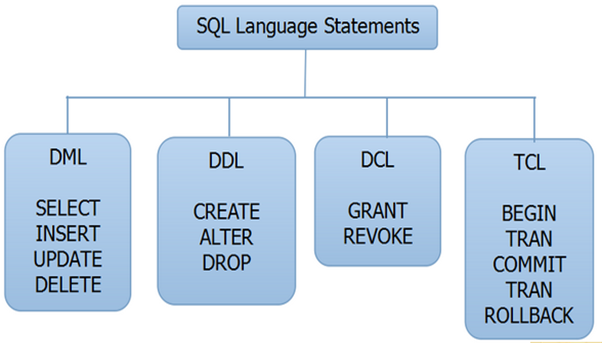
DAY 1 :

How many SQL statements are used? Define them.

ans:-



Enlist some commands of DDL, DML, and DCL.

Ans:-

**What is DDL in SQL?**

DDL allows you to create SQL statements to make operations with database data structures (schemas, tables etc.).

These are SQL DDL commands list and examples:

**CREATE**

CREATE statement is used to create a new database, table, index or stored procedure.

Create database example:

CREATE DATABASE explainjava;

Create table example:

CREATE TABLE user (

id INT(16) PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(255) NOT NULL

);

**DROP**

DROP statement allows you to remove database, table, index or stored procedure.

Drop database example:

DROP DATABASE explainjava;

Drop table example:

DROP TABLE user;

**ALTER**

ALTER is used to modify existing database data structures (database, table).

Alter table example:

ALTER TABLE user ADD COLUMN lastname VARCHAR(255) NOT NULL;

**RENAME**

RENAME command is used to rename SQL table.

Rename table example:

RENAME TABLE user TO student;

**TRUNCATE**

TRUNCATE operation is used to delete all table records.

Logically it’s the same as DELETE command.

Differences between DELETE and TRUNCATE commands are:

* TRUNCATE is really faster
* TRUNCATE cannot be rolled back
* TRUNCATE command does not invoke ON DELETE triggers

Example:

TRUNCATE student;

**What is DML in SQL?**

DML is a Data Manipulation Language, it’s used to build SQL queries to manipulate (select, insert, update, delete etc.) data in the database.

This is DML commands list with examples:

**SELECT**

SELECT query is used to retrieve a data from SQL tables.

Example:

SELECT \* FROM student;

**INSERT**

INSERT command is used to add new rows into the database table.

Example:

INSERT INTO student (name, lastname) VALUES ('Dmytro', 'Shvechikov');

**UPDATE**

UPDATE statement modifies records into the table.

Example:

UPDATE student SET name = 'Dima' WHERE lastname = 'Shvechikov';

**DELETE**

DELETE query removes entries from the table.

Example:

DELETE FROM student WHERE name = 'Dima';

**What is DCL in SQL?**

DCL a Data Control Language.

Its commands are responsible for access restrictions inside of the database.

Let’s take a look at DCL statements definitions.

**GRANT**

GRANT command gives permissions to SQL user account.

For example, I want to grant all privileges to ‘explainjava’ database for user ‘dmytro@localhost’.

Let’s create a user first:

CREATE USER 'dmytro'@'localhost' IDENTIFIED BY '123';

Then I can grant all privileges using GRANT statement:

GRANT ALL PRIVILEGES ON explainjava.\* TO 'dmytro'@'localhost';

and we have to save changes using FLUSH command:

FLUSH PRIVILEGES;

**REVOKE**

REVOKE statement is used to remove privileges from user accounts.

Example:

REVOKE ALL PRIVILEGES ON explainjava.\* FROM 'dmytro'@'localhost';

and save changes:

FLUSH PRIVILEGES;

**What is TCL in SQL?**

TCL is a Transaction Control Language.

Its commands are used to manage transactions in SQL databases.

This is TCL commands list:

**START TRANSACTION (BEGIN, BEGIN WORK)**

START TRANSACTION is used to start a new SQL transaction.

BEGIN and BEGIN WORK are aliases for START TRANSACTION.

Example:

START TRANSACTION;

after that, you’re doing manipulations with a data (insert, update, delete) and at the end, you need to commit a transaction.

**COMMIT**

As a mentioned above COMMIT command finishes transaction and stores all changes made inside of a transaction.

Example:

START TRANSACTION;

INSERT INTO student (name, lastname) VALUES ('Dmytro', 'Shvechikov');

COMMIT;

**ROLLBACK**

ROLLBACK statement reverts all changes made in the scope of transaction.

Example:

START TRANSACTION;

INSERT INTO student (name, lastname) VALUES ('Dmytro', 'Shvechikov');

ROLLBACK;

3.What is RDBMS? How is it different from DBMS?

Ans:-

DBMS:-(database management system)

Ms-excel -🡪 slow and expensive

Readymade software that allows you to manage your data.

ANSI definition:- (AMERICAN NATIONAL STANDAD INSTITUTE)

* Collection of program readymade software that allows you to insert,update, delete and process.
* Various DBMS available:-
* Ms excel,dbase,foxbase,foxpro,clipper,dataflex,advanced revelation DB vita, Quttro pro etc.
* Fields
* Records
* File
* Slower in terms of network traffic processing on client server.
* In DMBS client server architecutre not support .
* No security of data.

RDBMS:-(RELATIONAL DATABASE MANAGEMENT SYSTEM)

Ex:-Oracle, mysql etc.

Column, attribute, rows,tables,tuple entity

Faster in terms of network traffic processing on server machine.

Naming conventions are different than DBMS.

Relationship between 2 tables can be specified at the time of table creation(Foregin key constraint).

Less programming.

Less time is required for software development.

Hardware cost, network cost, infrastructure cost .

Most of the RDBMS support client server architecture.

Row level locking

Sutable for clients.

Every row of table work as file so client work on separate row,.

Supports Distributed database

Multiple level of security.

4.What is the difference between SQL and MySQL?

Ans:- SQL is a language for querying databases and MySQL is an **open source database product**. SQL is used for accessing, updating and maintaining data in a database and MySQL is an RDBMS that allows users to keep the data that exists in a database organized.

5.What is the default port number of MySQL?

Ans:- 3306

6.What are the differences between CHAR and VARCHAR and nvarchar data types?

Ans:- char and nchar are fixed-length which will reserve storage space for number of characters you specify even if you don't use up all that space. varchar and nvarchar are **variable-length** which will only use up spaces for the characters you store. It will not reserve storage like char or nchar

7.What is the purpose of using the TIMESTAMP data type?

Ans:- **When the date and time of an event is recorded**, we say that it is timestamped. ... Timestamps are important for keeping records of when information is being exchanged or created or deleted online. In many cases, these records are simply useful for us to know about. But in some cases, a timestamp is more valuable.

8.Differentiate between FLOAT and DOUBLE?

Ans:- A FLOAT is for single-precision, while a DOUBLE is for double-precision numbers. MySQL uses four bytes for single-precision values and **eight bytes for double-precision** values. There is a big difference from floating point numbers and decimal (numeric) numbers, which you can use with the DECIMAL data type.

9.What is the difference between BLOB AND TEXT?

Ans:- BLOB is used for storing binary data while Text is used **to store large string**. BLOB values are treated as binary strings (byte strings). They have no character set, and sorting and comparison are based on the numeric values of the bytes in column values. TEXT values are treated as nonbinary strings (character strings).

10.What are the issues of traditional file-based systems that make DBMS a superior alternative?

* Ans:- Data redundancy: duplicate data in multiple files, leading to data inconsistency, different values used for the same attribute.
* Program-data dependency: Changes in programs requiring changes to the data.
* Lack of flexibility.
* Poor security.

DAY 2:

1.What is the difference between columnar and row-based databases?

Ans:-

Columnar databases prefer to **process inserts**, updates and deletes (or merges) as batch operations. Row-based databases, built for fast and efficient On-Line Transaction Processing (OLTP) in highly concurrent environments, often heavily indexed, are very good at processing single-row operations.

column based database are "No SQL" database such as HBase and Cassandra. Column oriented databases do not support "traditional" transactional secondary indices

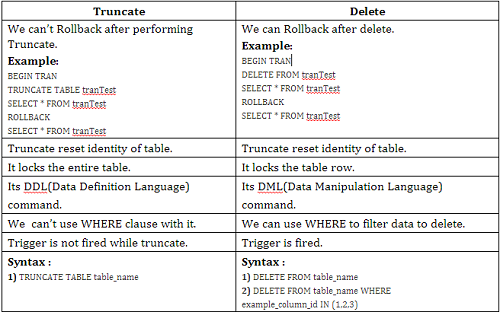
2.What are entities and attributes referring to?

Ans:-

An entity can be of two types: **Tangible Entity**: Tangible Entities are those entities which exist in the real world physically. Example: Person, car, etc. Intangible Entity: Intangible Entities are those entities which exist only logically and have no physical existence. The main difference between Entity and Attribute is that **an entity is a real-world object that represents data in RDBMS** while an attribute is a property that describes an entity. Relational Database Management System (RDBMS) is a type of database management system based on the relational

3.What is the Similarity and Difference between Truncate and Delete?

Ans:-



3.List the reason for poor performance of query.

Ans:-

- No indexes.  
  
- Excess recompilations of stored procedures.  
  
- Procedures and triggers without SET NOCOUNT ON.  
  
- Poorly written query with unnecessarily complicated joins.  
  
- Highly normalized database design.  
  
- Excess usage of cursors and temporary tables.  
  
- Queries with predicates that use comparison operators between different columns of the same table.  
  
- Queries with predicates that use operators, and any one of the following are true:   
  
. There are no statistics on the columns involved on either side of the operators.  
  
  
 The predicate uses the not equal to (!=) comparison operator or the NOT logical operator.  
  
  
- Queries that involve joining columns through arithmetic or string concatenation operators.  
  
4. Explain SELECT, LIKE, IN, Regular-Expression in mySQL?

Ans:-

SELECT :- SELECT is **the keyword that starts the query and instructs MySQL on what task it must perform**. FROM is a mandatory clause that specifies the table or tables to select the data from (if you apply to multiple tables, you must separate their names by commas or use the JOIN method)

LIKE:- The LIKE operator is used in a **WHERE clause to search for a specified pattern in a** column. There are two wildcards often used in conjunction with the LIKE operator: The percent sign (%) represents zero, one, or multiple characters. The underscore sign (\_) represents one, single character.

IN :- The MySQL IN condition is used **to help reduce the need to use multiple OR conditions** in a SELECT, INSERT, UPDATE, or DELETE statement.

5.Give string types available for column

Ans:- The string data types are **CHAR , VARCHAR , BINARY , VARBINARY , BLOB , TEXT , ENUM , and SET** . In some cases, MySQL may change a string column to a type different from that given in a CREATE TABLE or ALTER TABLE statement.

6. What are all the Common SQL Function

* Ans:- 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.

7.How to find the unique values if the value in the column is repeated

Ans:- To get unique or distinct values of a column in MySQL Table, use the following SQL Query. **SELECT DISTINCT(column\_name) FROM your\_table\_name**; You can select distinct values for one or more columns. The column names has to be separated with comma.

8. How to get unique records in MySQL?

Ans:- You can use **the DISTINCT command** along with the SELECT statement to find out unique records available in a table. mysql> SELECT DISTINCT last\_name, first\_name -> FROM person\_tbl -> ORDER BY last\_name; An alternative to the DISTINCT command is to add a GROUP BY clause that names the columns you are selecting.

9.How to create a date column in MySQL Server?

Ans:- First, create a table named people with birth date column with DATE data type. Next, insert a row into the people table. Then, query the data from the people table. After that, use the two-digit year format to insert data into the people table.

10.What is the meaning of Not Null in MySQL?

Ans:- A NOT NULL constraint in SQL is **used to prevent inserting NULL values into the specified column**, considering it as a not accepted value for that column. This means that you should provide a valid SQL NOT NULL value to that column in the INSERT or UPDATE statements, as the column will always contain data

How to create a table

What are tables and Fields?

What is the difference between DELETE TABLE and TRUNCATE TABLE commands?

How do you remove a column from a database?

How to Delete Data From a MySQL Table?

How to add users in MySQL?

What is the difference between CHAR\_ LENGTH and LENGTH?

Day 3 :

What is ACID Property?

What are the two modes of transaction supported in MySQL?

What isolation levels are available in a transaction?

What are COMMIT and ROLLBACK ?

If locking is not implemented, what issues can occur?

What are the different levels of data abstraction?

What are database locks and its types?

What is the difference between the following transaction states: Aborted vs Failed and Active vs Committed?

How do GROUP and ORDER BY Differ?

What is the difference between UNION and UNION ALL