

# MYSQL

# Overview

- In this module you will learn about MySQL , its categories and commands.

# Contents

In this section we are going to discuss about:

- What is MySQL
- Features of MySQL
- Pros and cons of using MySQL.
- Different categories of SQL statements.
- SQL commands and example.

# Learning Objectives

At the end of this course. You will be able to:

- Explain what is MySQL
- Features of MySQL
- Pros and cons of using MySQL.
- Different categories of SQL statements such as DDL, DCL, DML, TCL.
- SQL commands – it's syntax and example.

# What is MySQL?

- MySQL is released under an open-source license.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL supports large databases, up to 50 million rows or more in a table.
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

# Features of MySQL

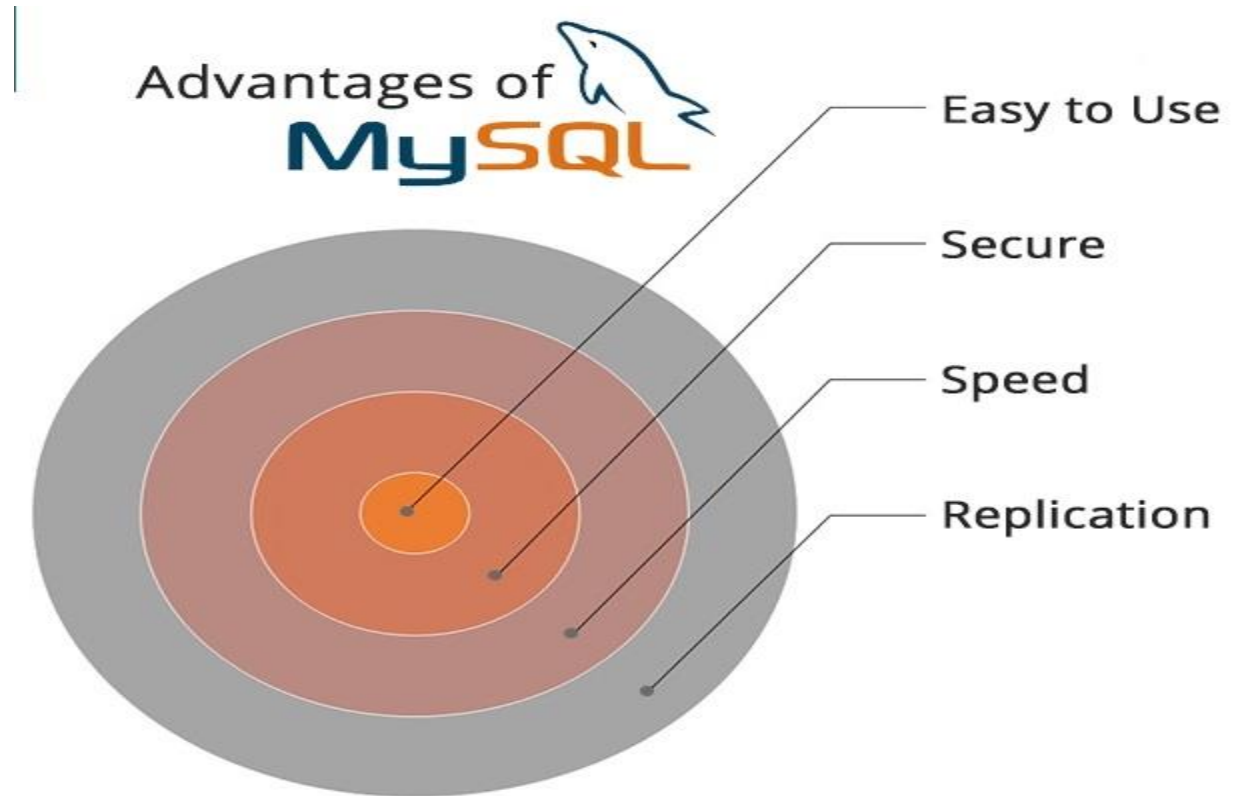
- Speed
- Ease of use
- Cost
- Query Language Support
- Capability
- Connectivity and security
- Portability



Reference: <https://i2.wp.com/d3d2ir91ztzaym.cloudfront.net/uploads/2020/06/Features-of-MySQL.jpg>

# Benefits of MySQL

- Flexible and easy to use
- High performance
- A mature DBMS
- Secure database
- Free installation
- Simple syntax



Reference: [https://www.janbasktraining.com/blog/uploads/images/image\\_750x\\_5dcd28ff0dfd4.jpg](https://www.janbasktraining.com/blog/uploads/images/image_750x_5dcd28ff0dfd4.jpg)

# Cons of MySQL

- Owned by Oracle
- Scalability issues
- Limited support for SQL standards
- Large databases
- Tools
- Data corruption



# Categories of SQL Statements

## DDL (Data Definition Language)

- DDL statements are used to alter/modify a database or table structure and schema.

These statements handle the design and storage of database objects.

- CREATE – create a new Table, database, schema
- ALTER – alter existing table, column description
- DROP – delete existing objects from database

# Categories of SQL Statements

## DML (Data Manipulation Language)

These are basic operations we perform on data such as selecting a few records from a table, inserting new records, deleting unnecessary records, and updating/modifying existing records.

- SELECT – select records from a table
- INSERT – insert new records
- UPDATE – update/Modify existing records
- DELETE – delete existing records

# Categories of SQL Statements

## DCL (Data Control Language)

DCL statements control the level of access that users have on database objects.

- GRANT – allows users to read/write on certain database objects
- REVOKE – keeps users from read/write permission on database objects

# Categories of SQL Statements

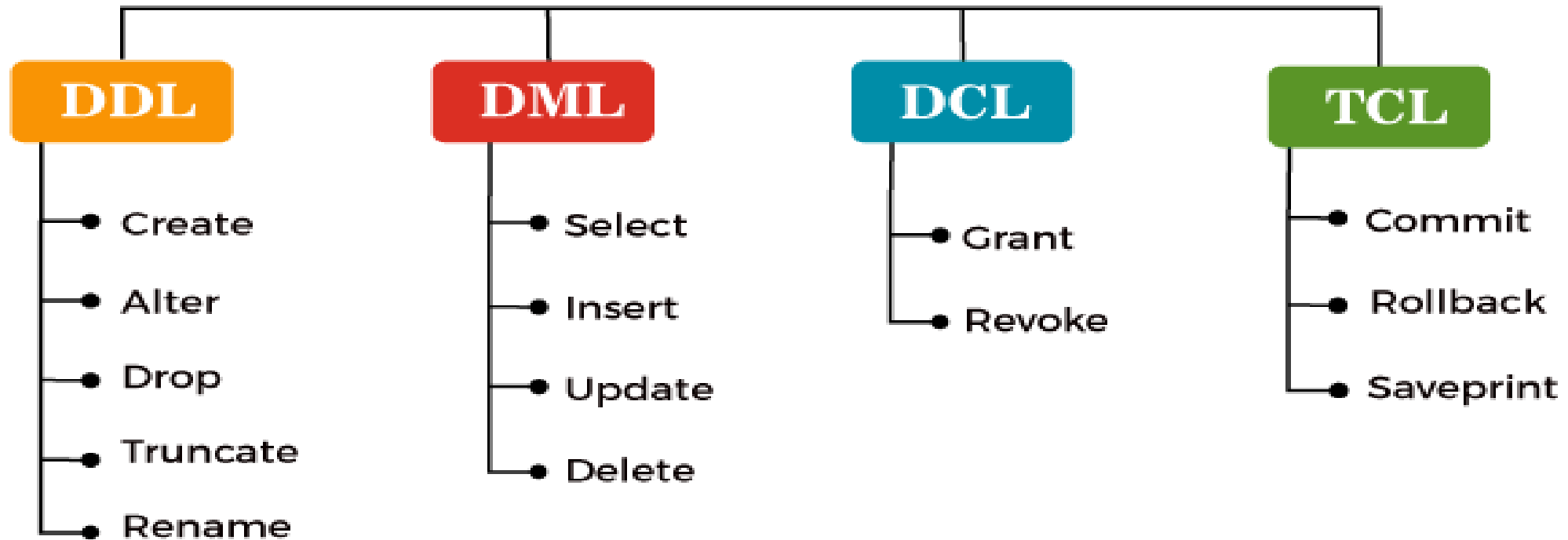
## TCL (Transaction Control Language)

TCL statements allow you to control and manage transactions to maintain the integrity of data within SQL statements.

- BEGIN Transaction – opens a transaction
- COMMIT Transaction – commits a transaction
- ROLLBACK Transaction – ROLLBACK a transaction in case of any error

# SQL Commands

## Types of SQL Commands



Reference: <https://static.javatpoint.com/sqlpages/images/types-of-sql-commands.png>

# SQL Commands

S.No	DDL Commands	Description	Sample Query
1.	<b>CREATE</b>	Used to create tables or databases.	<b>CREATE</b> table student;
2.	<b>ALTER</b>	Used to modify the values in the tables.	<b>ALTER</b> table student add column <u>roll_no</u> int;
3.	<b>RENAME</b>	Used to rename the table or database name.	<b>RENAME</b> student to <u>student_details</u> ;
4.	<b>DROP</b>	Deletes the table from the database.	<b>DROP</b> table <u>student_details</u> ;
5.	<b>TRUNCATE</b>	Used to delete a table from database.	<b>TRUNCATE</b> table <u>student_details</u> ;

<https://minigranth.in/sql-tutorial/images/tutorials/SQL%20IMAGES/DDL%20Commands.jpg>

# SQL Commands

S.No	DML Command	Description	Sample Query
1.	INSERT	Used to insert new rows in the tables.	<b>INSERT</b> into student( <u>roll_no</u> , name) values(1, Anoop);
2.	DELETE	Used to delete a row or entire table.	<b>DELETE</b> table student;
3.	UPDATE	Used to update values of existing rows of tables.	<b>UPDATE</b> students set <u>s_name</u> = 'Anurag' where <u>s_name</u> like 'Anoop';
4.	LOCK	Used to lock the privilege as either read or write.	<b>LOCK</b> tables student read;
5.	MERGE	Used to merge two rows of existing tables in database.	

Reference: <https://minigranth.in/sql-tutorial/images/tutorials/SQL%20IMAGES/DML%20Commands.jpg>



# SQL Commands

S.No	DCL Commands	Description	Sample Query
1.	<b>GRANT</b>	Used to provide access to users.	<b>GRANT CREATE</b> table to user1;
2.	<b>REVOKE</b>	Used to take back the access privileges from the users.	<b>REVOKE CREATE</b> table from user1;

Reference: <https://minigranth.in/sql-tutorial/images/tutorials/SQL%20IMAGES/DCL%20Commands.jpg>



# SQL Commands

S.No	TCL Commands	Description	Sample Query
1.	ROLL BACK	Used to cancel or UNDO the changes made in the database.	<b>ROLLBACK;</b>
2.	COMMIT	Used to deploy or apply or save the changes in the database.	<b>COMMIT;</b>
3.	SAVEPOINT	Used to save the data on temporary basis in the database.	<b>SAVEPOINT</b> <u>roll_no</u> ;

Reference: <https://minigranth.in/sql-tutorial/images/tutorials/SQL%20IMAGES/TCL%20Commands.jpg>

# Conclusion

In this section we have learned about:

- MySQL is an open-source relational database management system.
- Features of MySQL such as speed, Ease of use, Cost, Query Language Support, Capability, Connectivity and security, Portability.
- Pros and cons of MySQL.
- DDL commands in SQL used for changing the structure of a table.
- The Data Manipulation Language commands help in modifying a relational database
- DCL is used to grant/revoke permissions on databases and their contents.
- Transaction Control Language commands can only be used with DML commands. As these operations are auto-committed in the database, they can't be used while creating or dropping tables.

# Thank You