

2. DML: Data Manipulation Language

DML is short name of Data Manipulation Language, which deals with data manipulation and includes most common SQL statements such SELECT, INSERT, UPDATE, DELETE, etc., and it is used to store, modify, retrieve, delete and update data in a database.

Add new Record/Row

The INSERT INTO statement is used to insert new records in a table. It is possible to write the INSERT INTO statement in two ways. The first way specifies both the column names and the values to be inserted

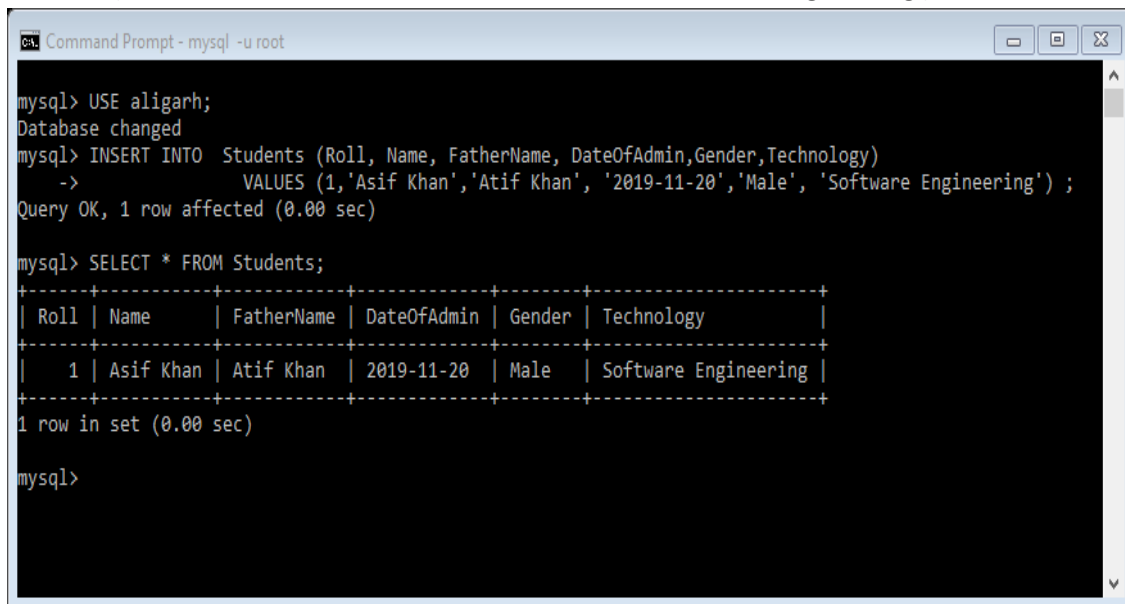
Syntax

INSERT INTO TableName (Column1, Column2, ..) **VALUES** (Value1,Value2, ..)

Example

In this command To add a new record or row in to table named, **Students** with **Roll, Name, FatherName, DateOfAdmin, Gender and Technology** fields/ columns , use the following command:

```
mysql> INSERT INTO Students (Roll, Name, FatherName, DateOfAdmin,Gender,Technology)
VALUES (1,'Asif Khan','Atif Khan', '2019-11-20','Male', 'Software Engineering') ;
```



```
Command Prompt - mysql -u root

mysql> USE aligarh;
Database changed
mysql> INSERT INTO Students (Roll, Name, FatherName, DateOfAdmin,Gender,Technology)
-> VALUES (1,'Asif Khan','Atif Khan', '2019-11-20','Male', 'Software Engineering') ;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Students;
+-----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Asif Khan | Atif Khan  | 2019-11-20  | Male   | Software Engineering |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

In the second way, if you are adding values for all the columns of the table, you do not need to specify the column names in the SQL query. However, make sure the order of the values is in the same order as the columns in the table. The INSERT INTO syntax would be as follows:

Syntax

INSERT INTO TableName **VALUES** (Value1,Value2, ..)

```
mysql> INSERT INTO Students
VALUES (2,'Muhammad Ali','Hassan Ali', '2018-12-233','Male', 'Information Technology') ;
```

```

Command Prompt - mysql -u root
mysql> USE Aligarh;
Database changed
mysql> INSERT INTO Students
  ->          VALUES (2,'Muhammad Ali','Hassan Ali', '2018-12-233','Male', 'Information Technology') ;
Query OK, 1 row affected, 2 warnings (0.00 sec)

mysql> SELECT * FROM Students;
+-----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Asif Khan | Atif Khan  | 2019-11-20  | Male  | Software Engineering |
| 2    | Muhammad Ali | Hassan Ali | 0000-00-00  | Male  | Information Technolo |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>

```

Insert Data Only in Specified Columns

It is also possible to only insert data in specific columns. The following SQL statement will insert a new record, but only insert data in the "Roll", "Name", "FatherName" and "Technology" columns.

```
mysql> INSERT INTO Students (Roll, Name, FatherName, Technology)
      VALUES (3,'Fatima','Farhan Ahmed', 'Information Technology');
```

```

Command Prompt - mysql -u root
mysql> INSERT INTO Students
  ->          VALUES (3,'Fatima','Farhan Ahmed', '2018-07-11','Female', 'Information Technology') ;
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> SELECT * FROM Students
  -> ;
+-----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Asif Khan | Atif Khan  | 2019-11-20  | Male  | Software Engineering |
| 2    | Muhammad Ali | Hassan Ali | 0000-00-00  | Male  | Information Technolo |
| 3    | Fatima    | Farhan Ahmed | 2018-07-11  | Female | Information Technolo |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>

```

Retrieved/Fetch data from Table

Select is the most commonly used statement in SQL. The SELECT Statement in SQL is used to retrieve or fetch data from a database.

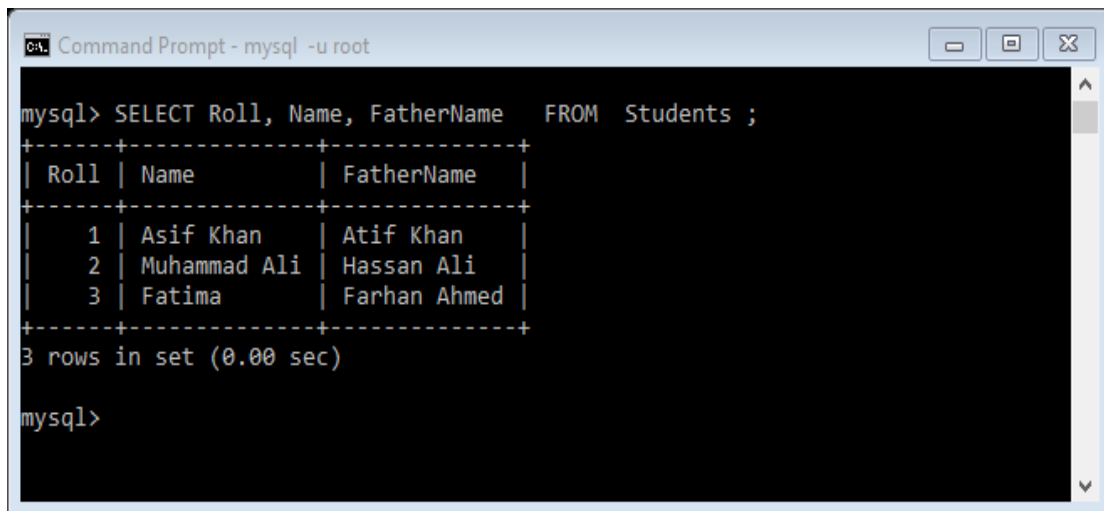
Syntax

```
SELECT Column1, Column2, .. FROM TableName
```

Example

Here, column1, column2 ... are the field names of the table you want to select data from. Query to fetch the fields Roll, Name, FatherName from the table Students. Use the following command:

```
mysql> SELECT Roll, Name, FatherName FROM Students ;
```



```
mysql> SELECT Roll, Name, FatherName FROM Students ;
```

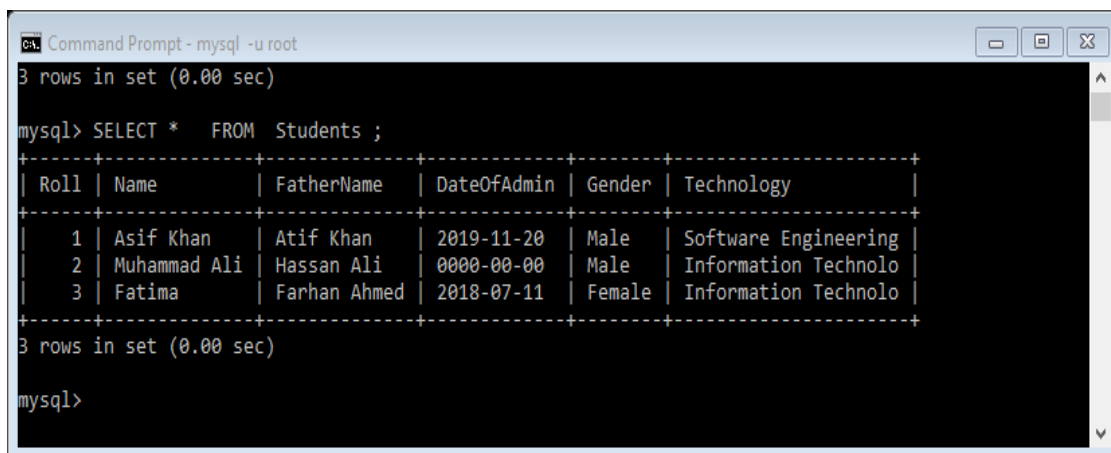
Roll	Name	FatherName
1	Asif Khan	Atif Khan
2	Muhammad Ali	Hassan Ali
3	Fatima	Farhan Ahmed

```
3 rows in set (0.00 sec)
```

```
mysql>
```

If you want to select all the fields available in the table, use the (*) character replace by all column names, use the following command:

```
mysql> SELECT * FROM Students ;
```



```
mysql> SELECT * FROM Students ;
```

Roll	Name	FatherName	DateOfAdmin	Gender	Technology
1	Asif Khan	Atif Khan	2019-11-20	Male	Software Engineering
2	Muhammad Ali	Hassan Ali	0000-00-00	Male	Information Technolo
3	Fatima	Farhan Ahmed	2018-07-11	Female	Information Technolo

```
3 rows in set (0.00 sec)
```

```
mysql>
```

What is an Operator in SQL?

An operator is a reserved word or a character used primarily in an SQL statement's WHERE clause to perform operation(s), such as comparisons and arithmetic operations. These Operators are used to specify conditions in an SQL statement and to serve as conjunctions for multiple conditions in a statement.

- Arithmetic operators
- Comparison operators
- Logical operators
- Operators used to negate conditions

SQL Arithmetic Operators

Assume 'variable a' holds 10 and 'variable b' holds 20, then: –

Operator	Description	Example
+ (Addition)	Adds values on either side of the operator.	a + b will give 30
- (Subtraction)	Subtracts right hand operand from left hand operand.	a - b will give -10
* (Multiplication)	Multiplies values on either side of the operator.	a * b will give 200
/ (Division)	Divides left hand operand by right hand operand.	b / a will give 2
% (Modulus)	Divides left hand operand by right hand operand and returns remainder.	b % a will give 0

SQL Comparison/Relational Operators

Assume 'variable a' holds 10 and 'variable b' holds 20, then: –

Operator	Description	Example
=	Checks if the values of two operands are equal or not, if yes then condition becomes true.	(a = b) is not true.
!=	Checks if the values of two operands are equal or not, if values are not equal then condition becomes true.	(a != b) is true.
<>	Checks if the values of two operands are equal or not, if values are not equal then condition becomes true.	(a <> b) is true.
>	Checks if the value of left operand is greater than the value of right operand, if yes then condition becomes true.	(a > b) is not true.
<	Checks if the value of left operand is less than the value of right operand, if yes then condition becomes true.	(a < b) is true.
>=	Checks if the value of left operand is greater than or equal to the value of right operand, if yes then condition becomes true.	(a >= b) is not true.
<=	Checks if the value of left operand is less than or equal to the value of right operand, if yes then condition becomes true.	(a <= b) is true.

SQL Logical Operators

Here is a list of all the logical operators available in SQL.

Sr. No.	Operator & Description
1	ALL: The ALL operator is used to compare a value to all values in another value set.
2	AND: The AND operator allows the existence of multiple conditions in an SQL statement's WHERE clause.
3	ANY: The ANY operator is used to compare a value to any applicable value in the list as per the condition.
4	BETWEEN: The BETWEEN operator is used to search for values that are within a set of values, given the minimum value and the maximum value.
5	EXISTS: The EXISTS operator is used to search for the presence of a row in a specified table that meets a certain criterion.
6	IN: The IN operator is used to compare a value to a list of literal values that have been specified.
7	LIKE: The LIKE operator is used to compare a value to similar values using wildcard operators.
8	NOT: The NOT operator reverses the meaning of the logical operator with which it is used. Eg: NOT EXISTS, NOT BETWEEN, NOT IN, etc. This is a negate operator.
9	OR: The OR operator is used to combine multiple conditions in an SQL statement's WHERE clause.
10	IS NULL: The NULL operator is used to compare a value with a NULL value.
11	UNIQUE: The UNIQUE operator searches every row of a specified table for uniqueness (no duplicates).

Expression

An expression is a combination of one or more values, operators and SQL functions that evaluate to a value. These SQL EXPRESSIONS are like formulae and they are written in query language. You can also use them to query the database for a specific set of data.

There are different types of SQL expressions, which are mentioned below –

- Relational/Boolean
- Numeric

SQL Boolean Expressions

SQL Boolean Expressions fetch the data based on matching a specific value.

Consider the *Students* table having the following records: –

```

C:\> Select Command Prompt - mysql -u root
mysql> select * from students;
+-----+-----+-----+-----+-----+-----+
| Roll | Name       | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Fatima     | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
| 2    | Muhammad Ali | Hassan Ali | 2019-02-19 | Male   | Software Engineering |
| 3    | Asif Khan  | Imran Khan  | 2017-03-17 | Male   | Information Technolo |
| 4    | Farooq Ahmed | Umer Ahmed | 2019-06-18 | Male   | Information Technolo |
| 5    | Farooq Ahmed | Basit Ali  | 2018-08-23 | Male   | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 7    | Nadeem     | Saleem     | 2019-05-29 | Male   | Software Engineering |
| 8    | Farooq Ahmed | Tanveer Ahmed | 2016-04-22 | Male   | Software Engineering |
| 9    | Fozia Ali  | Umer Ali   | 2019-05-21 | Female | Software Engineering |
| 10   | Atif       | Arif       | 2018-06-05 | Male   | Software Engineering |
| 11   | Imran      | Rehan      | 2019-03-08 | Male   | Electronics          |
| 12   | Nadia Khan | Jamal Khan | 2018-04-08 | Female | Electronics          |
| 13   | Sara Khan  | Waseem Ahmed | 2017-05-03 | Female | Electronics          |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql>

```

The following table is a simple example showing the usage of various SQL Boolean Expressions. Use Following command with Boolean expression (Gender='Female') is true: –

mysql> SELECT * FROM Students WHERE Gender='Female';

```

C:\> Command Prompt - mysql -u root
mysql> SELECT * FROM Students WHERE Gender='Female';
+-----+-----+-----+-----+-----+-----+
| Roll | Name       | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Fatima     | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 9    | Fozia Ali  | Umer Ali   | 2019-05-21 | Female | Software Engineering |
| 12   | Nadia Khan | Jamal Khan | 2018-04-08 | Female | Electronics          |
| 13   | Sara Khan  | Waseem Ahmed | 2017-05-03 | Female | Electronics          |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.03 sec)

mysql>

```

Numeric Expression

These expressions are used to perform any mathematical operation in any query. Here, the Numerical expression is used for a mathematical expression or any formula.in this command Addition of (**Maths +English + Urdu**) fields of database and result in the logical **ObtainMark** field. Following is a simple example showing the usage of SQL Numeric Expressions: –

Consider the **Marks** table having the following records: –

```

Select Command Prompt - mysql -u root

mysql> select * from marks;
+-----+-----+-----+-----+-----+-----+
| Roll | Month      | Maths | English | Urdu | ObtainMarks |
+-----+-----+-----+-----+-----+-----+
| 1    | 2019-05-20 | 45    | 67     | 78   | NULL        |
| 2    | 2019-05-20 | 66    | 56     | 66   | NULL        |
| 3    | 2019-05-20 | 80    | 78     | 56   | NULL        |
| 4    | 2019-05-20 | 55    | 66     | 77   | NULL        |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

mysql> SELECT Roll, Maths, English, Urdu, (Maths+English+urdu) AS ObtainMark FROM Marks;

```

Command Prompt - mysql -u root

mysql> SELECT Roll, Maths, English, Urdu, (Maths+English+urdu) as ObtainMark FROM Marks;
+-----+-----+-----+-----+-----+
| Roll | Maths | English | Urdu | ObtainMark |
+-----+-----+-----+-----+-----+
| 1    | 45    | 67     | 78   | 190       |
| 2    | 66    | 56     | 66   | 188       |
| 3    | 80    | 78     | 56   | 214       |
| 4    | 55    | 66     | 77   | 198       |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>

```

Delete Records from Table

The DELETE Statement in SQL is used to delete existing records from a table. We can delete a single record or multiple records depending on the condition we specify in the WHERE clause. If we omit the WHERE clause then all of the records will be deleted and the table will be empty.

Syntax

DELETE FROM TableName **WHERE** SpecificCondition

Example

Here delete the row from the table Students where Roll number is 2. This will delete 1 row/record (second row) from the table. Use the following command with specific condition:

mysql> DELETE FROM Students **WHERE** Roll = 2 ;

```

C:\> Command Prompt - mysql -u root

mysql> DELETE FROM Students WHERE Roll = 2 ;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Students ;
+-----+-----+-----+-----+-----+-----+
| Roll | Name   | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Asif Khan | Atif Khan | 2019-11-20 | Male  | Software Engineering |
| 3    | Fatima   | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>

```

All of the records in the table will be deleted, there are no records left to display. The table Students will become empty. Use the following command without WHERE clause:

mysql> DELETE FROM Students ;

```

C:\> Command Prompt - mysql -u root

mysql> SELECT * FROM Students ;
+-----+-----+-----+-----+-----+-----+
| Roll | Name   | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Asif Khan | Atif Khan | 2019-11-20 | Male  | Software Engineering |
| 3    | Fatima   | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> DELETE FROM Students ;
Query OK, 2 rows affected (0.00 sec)

mysql> SELECT * FROM Students ;
Empty set (0.00 sec)

mysql>

```

Delete command with IN operator/clause

Let us say we have a list of *students* we want to delete. We can use the WHERE clause along with *IN* operator/clause. Executing the following command deletes *Students* with Roll number 3 and 4 from our *Students* table.

mysql> DELETE FROM Students WHERE Roll IN(3,4);


```

C:\> Select Command Prompt - mysql -u root
mysql> select * from students;
+-----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Fatima    | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
| 2    | Muhammad Ali | Hassan Ali   | 2019-02-19 | Male   | Software Engineering |
| 3    | Asif Khan | Imran Khan  | 2017-03-17 | Male   | Information Technolo |
| 4    | Farooq Ahmed | Umer Ahmed  | 2019-06-18 | Male   | Information Technolo |
| 5    | Farooq Ahmed | Basit Ali   | 2018-08-23 | Male   | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 7    | Nadeem    | Saleem      | 2019-05-29 | Male   | Software Engineering |
| 8    | Farooq Ahmed | Tanveer Ahmed | 2016-04-22 | Male   | Software Engineering |
| 9    | Fozia Ali | Umer Ali    | 2019-05-21 | Female | Software Engineering |
| 10   | Atif      | Arif        | 2018-06-05 | Male   | Software Engineering |
| 11   | Imran     | Rehan       | 2019-03-08 | Male   | Electronics           |
| 12   | Nadia Khan | Jamal Khan  | 2018-04-08 | Female | Electronics           |
| 13   | Sara Khan | Waseem Ahmed | 2017-05-03 | Female | Electronics           |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.06 sec)

mysql> DELETE FROM Students WHERE Roll IN(3,4);
Query OK, 2 rows affected (0.02 sec)

mysql> SELECT * FROM Students;
+-----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+-----+-----+-----+-----+-----+-----+
| 1    | Fatima    | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
| 2    | Muhammad Ali | Hassan Ali   | 2019-02-19 | Male   | Software Engineering |
| 5    | Farooq Ahmed | Basit Ali   | 2018-08-23 | Male   | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 7    | Nadeem    | Saleem      | 2019-05-29 | Male   | Software Engineering |
| 8    | Farooq Ahmed | Tanveer Ahmed | 2016-04-22 | Male   | Software Engineering |
| 9    | Fozia Ali | Umer Ali    | 2019-05-21 | Female | Software Engineering |
| 10   | Atif      | Arif        | 2018-06-05 | Male   | Software Engineering |
| 11   | Imran     | Rehan       | 2019-03-08 | Male   | Electronics           |
| 12   | Nadia Khan | Jamal Khan  | 2018-04-08 | Female | Electronics           |
| 13   | Sara Khan | Waseem Ahmed | 2017-05-03 | Female | Electronics           |
+-----+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

mysql>

```

Update SQL command

The Update command is used to modify rows in a table. The update command can be used to update a single field or multiple fields at the same time. It can also be used to update a table with values from another table.

Syntax

UPDATE table_name **SET** column1 = value1, column2 = value2, ... **WHERE** condition;

Example

UPDATE `table_name` is the command that tells MySQL to update the data in a table. SET `column_name` = `new_value` are the names and values of the fields to be affected by the update query. Note, when setting the update values, strings data types must be in single quotes. Numeric values do not need to be in quotation marks. Date data type must be in single quotes and in the format 'YYYY-MM-DD'. [WHERE condition] is optional and can be used to put a filter that restricts the number of rows affected by the UPDATE query. If you omit the WHERE clause, all records in the table will be updated!

To update the “Name” and “Gender” of a Student whose “Roll” is 1 in the “Students” table, we can use the following command:

```
mysql> UPDATE Students SET Name='Umer' , Gender='Male' WHERE Roll=1 ;
```

```

C:\> Select Command Prompt - mysql -u root
mysql> SELECT * FROM Students;
+----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+----+-----+-----+-----+-----+-----+
| 1    | Sara Khan | Farhan Ahmed | 2018-07-11 | Female | Information Technolo |
| 2    | Muhammad Ali | Hassan Ali | 2019-02-19 | Male   | Software Engineering |
| 5    | Farooq Ahmed | Basit Ali | 2018-08-23 | Male   | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 7    | Nadeem     | Saleem     | 2019-05-29 | Male   | Software Engineering |
| 8    | Farooq Ahmed | Tanveer Ahmed | 2016-04-22 | Male   | Software Engineering |
| 9    | Fozia Ali  | Umer Ali   | 2019-05-21 | Female | Software Engineering |
| 10   | Atif       | Arif       | 2018-06-05 | Male   | Software Engineering |
| 11   | Imran      | Rehan      | 2019-03-08 | Male   | Electronics          |
| 12   | Nadia Khan | Jamal Khan | 2018-04-08 | Female | Electronics          |
| 13   | Sara Khan  | Waseem Ahmed | 2017-05-03 | Female | Electronics          |
+----+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

mysql> UPDATE Students SET Name='Umer' , Gender='Male' WHERE Roll=1 ;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM Students;
+----+-----+-----+-----+-----+-----+
| Roll | Name      | FatherName | DateOfAdmin | Gender | Technology |
+----+-----+-----+-----+-----+-----+
| 1    | Umer      | Farhan Ahmed | 2018-07-11 | Male   | Information Technolo |
| 2    | Muhammad Ali | Hassan Ali | 2019-02-19 | Male   | Software Engineering |
| 5    | Farooq Ahmed | Basit Ali | 2018-08-23 | Male   | Information Technolo |
| 6    | Samina Khan | Rashid Khan | 2017-01-26 | Female | Information Technolo |
| 7    | Nadeem     | Saleem     | 2019-05-29 | Male   | Software Engineering |
| 8    | Farooq Ahmed | Tanveer Ahmed | 2016-04-22 | Male   | Software Engineering |
| 9    | Fozia Ali  | Umer Ali   | 2019-05-21 | Female | Software Engineering |
| 10   | Atif       | Arif       | 2018-06-05 | Male   | Software Engineering |
| 11   | Imran      | Rehan      | 2019-03-08 | Male   | Electronics          |
| 12   | Nadia Khan | Jamal Khan | 2018-04-08 | Female | Electronics          |
| 13   | Sara Khan  | Waseem Ahmed | 2017-05-03 | Female | Electronics          |
+----+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

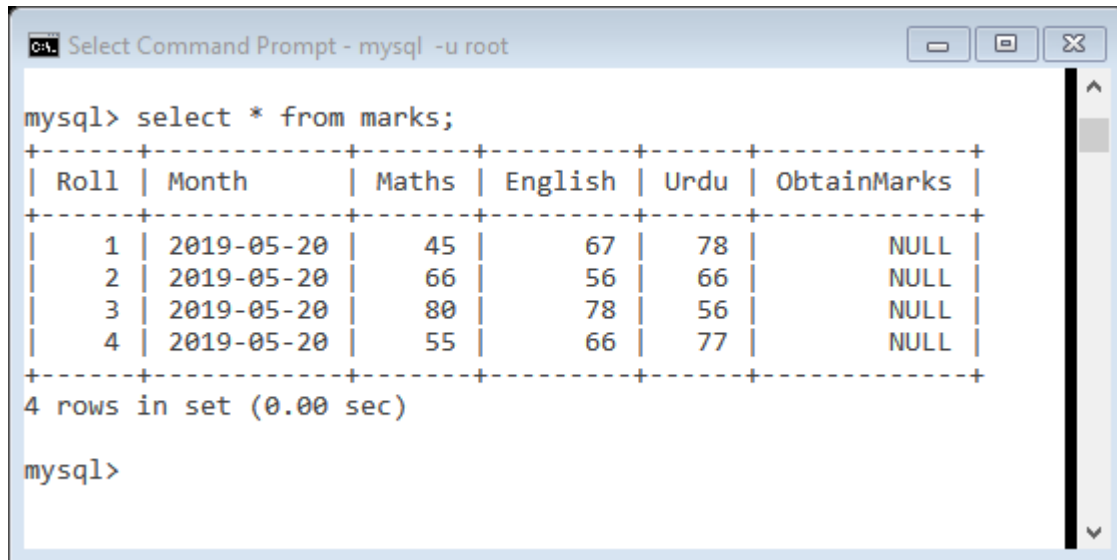
mysql>

```

Update all records with Numerical Expression

These expressions are used to perform any mathematical operation in the UPDATE query. Here, the Numerical expression is used for a mathematical expression or any formula. In this command Addition of **(Maths +English + Urdu)** fields of database and result in the other **ObtainMark** field updating all records in the **Students** table. Following is a simple example updating the usage of SQL Numeric Expressions with UPDATE command: –

Consider the **Marks** table having the following records: –



```

C:\> Select Command Prompt - mysql -u root

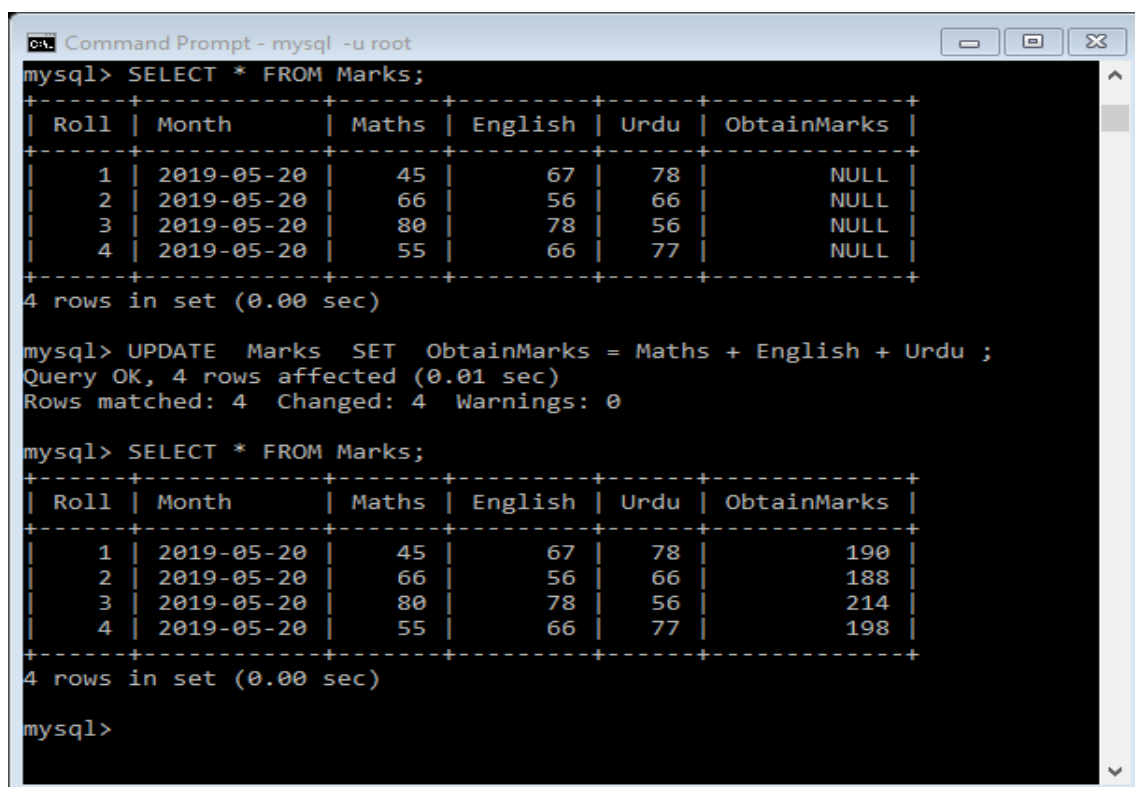
mysql> select * from marks;
+-----+-----+-----+-----+-----+-----+
| Roll | Month      | Maths | English | Urdu | ObtainMarks |
+-----+-----+-----+-----+-----+-----+
| 1    | 2019-05-20 | 45    | 67     | 78   | NULL        |
| 2    | 2019-05-20 | 66    | 56     | 66   | NULL        |
| 3    | 2019-05-20 | 80    | 78     | 56   | NULL        |
| 4    | 2019-05-20 | 55    | 66     | 77   | NULL        |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

Example

mysql> UPDATE Marks **SET** ObtainMarks = Maths + English + Urdu ;



```

C:\> Command Prompt - mysql -u root

mysql> SELECT * FROM Marks;
+-----+-----+-----+-----+-----+-----+
| Roll | Month      | Maths | English | Urdu | ObtainMarks |
+-----+-----+-----+-----+-----+-----+
| 1    | 2019-05-20 | 45    | 67     | 78   | NULL        |
| 2    | 2019-05-20 | 66    | 56     | 66   | NULL        |
| 3    | 2019-05-20 | 80    | 78     | 56   | NULL        |
| 4    | 2019-05-20 | 55    | 66     | 77   | NULL        |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> UPDATE Marks SET ObtainMarks = Maths + English + Urdu ;
Query OK, 4 rows affected (0.01 sec)
Rows matched: 4  Changed: 4  Warnings: 0

mysql> SELECT * FROM Marks;
+-----+-----+-----+-----+-----+-----+
| Roll | Month      | Maths | English | Urdu | ObtainMarks |
+-----+-----+-----+-----+-----+-----+
| 1    | 2019-05-20 | 45    | 67     | 78   | 190        |
| 2    | 2019-05-20 | 66    | 56     | 66   | 188        |
| 3    | 2019-05-20 | 80    | 78     | 56   | 214        |
| 4    | 2019-05-20 | 55    | 66     | 77   | 198        |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

Note: Update Warning! Be careful when updating records. If you omit the WHERE clause, ALL records will be updated.

Exercise

Theory Question

- 1) Write list of DML Commands of SQL.
- 2) Write Syntax of INSERT commands of SQL.
- 3) Write Relation operators of SQL.
- 4) Define five logical operator of SQL.
- 5) How many type of expression in SQL.

Practical Question

- 1) You insert a new record into Students. The value for **Roll** number should be 55, **Name** should be "Saleem Khan", and **Gender** should be "Male"..
- 2) Remove records from **Students** table where **Gender** is Male.
- 3) Modify to field **FatherName** replace by "Javed Ahmed" where Student **Roll** is number 55.
- 4) Display all records from **Students** table.
- 5) Delete All Record from **Students** where **Technology** is Electronics.

Objective MCQ's

- 1) Data manipulation language (DML) includes statements that modify the _____ of a database.
 - a) Structure
 - b) Data
 - c) Users
 - d) Size
- 2) _____ is a DML statement used to retrieve records from a database.
 - a) QUERY
 - b) INSERT
 - c) UPDATE
 - d) SELECT
- 3) To remove data from a database, use the _____ DML command.
 - a) REMOVE
 - b) DELETE
 - c) EXTRACT
 - d) UPDATE
- 4) DML command that creates a new record or row in a table
 - a) Update
 - b) Insert
 - c) Delete
 - d) Select
- 5) Which of the following is not included in DML (Data Manipulation Language)
 - a) INSERT
 - b) UPDATE
 - c) DELETE
 - d) CREATE