CAST and CONVERT Functions

CAST FUNCTION:

The CAST() function converts a value of any type into a value that has a specified type. The syntax of the MySQL CAST() function is as follows:

- **CAST**(expression AS TYPE);

The target type can be any one of the following types:

- **BINARY**
- **CHAR**
- **DATE**
- **DATETIME**
- **TIME**
- **DECIMAL**
- **SIGNED**
- **UNSIGNED**

For Example:

1. If we want to convert the integer type value(123003) to a TIME. Then:

Select CAST("123003" AS TIME);

Output: 12:30:03

2. We can change the data type of a whole column in a table. We will use CAST function. Look at the following example

We have a table "student" and we want to convert his "GPA" column data type to integer.

std_id	std_first_name	std_last_name	std_gender	std_gpa
0	Muhammad	Farhan	Male	3.1
0	Muneeb	Akram	Male	3
0	Adil	Saeed	Male	2.5
0	Sara	Khan	Female	3.7
0	Syeda	Hira	Female	3.1
0	Nouman	Khan	Male	2.8

Query: select std_gpa, CAST(std_gpa AS int) AS NewGPA from student;

https://www.w3schools.com/sql/sql_ref_mysql.asp
Link for other date, time and mathematical functions

Result:

std_gpa	NewGPA
3.1	3
3.1	3
3	3
2.5	2
3.7	4
2.8	3

CONVERT FUNCTION:

CONVERT() function also converts one data type to the another data type. The MySQL CONVERT() function is also used for converting a value from one character set to another character set. It accepts two parameters which are the input value and the type to be converted in.

Syntax: CONVERT(input value, data type)

Syntax for converting character set:

CONVERT(input value USING character_set)

Example 1: select CONVERT ('2020-06-24', DATETIME);

Output: 20-06-24 00:00:00

Example 2: select CONVRT('database' USING utf8)

Output: database

What is the difference between CAST() and CONVERT() function?

CONVERT is SQL Server specific, CAST is ANSI (American National Standards Institute). CONVERT is more flexible in that you can format dates etc. Other than that, they are pretty much the same. If you don't care about the extended features, use CAST.

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Mathematical Functions

- **ABS():** Returns the absolute value of a number

For example: select ABS(-245.23);

Output: 245.23

- **CEILING():** Returns the greater integer value that is >= to a float number

For example: select CEILING(24.25);

Output: 25

- **FLOOR():**Returns the smallest integer value that is >= to a float number

For example: select FLOOR(24.25);

Output: 24

- **POWER():** Returns the value of a number raised to the power of another number

For example: select POWER(4, 2);

Output: 16

- **RAND():** Returns a random number

For example: select RAND();

Output: 0.44364312053066035

- **ROUND():** Rounds a number to a specified number of decimal places

For example: select ROUND(23.56871, 3);

Output: 23.568

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- **SQRT():** Return the square root of a number

For example: select SQRT(81);

Output: 9

- **LOG():** Returns the natural logarithm of a number or the logarithm of number to a specified base

For example: select LOG(2);

Output: 0.6931471805599453

THE END

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