Built-in Functions in MySQL

Instructor: Sriya Ivaturi

Built-in Functions in MySQL

➢ MySQL provides ready-to-use functions for:

- ○ String manipulation

- ○ Numeric processing

- ○ Date & time handling

- ○ Aggregation

- ○ Conditional logic

String Built In Functions

Function	Description	Example	Output
UPPER(str)	Convert to uppercase	UPPER('sql')	SQL
LOWER(str)	Convert to lowercase	LOWER('MySQL')	mysql
LENGTH(str)	Length in bytes	LENGTH('abc')	3
CHAR_LENGTH(str)	Length in characters	CHAR_LENGTH('नमस्ते')	6
CONCAT(a, b)	Join strings	CONCAT('Hello', 'SQL')	HelloSQL
SUBSTRING(str, pos, len)	Extract part of string	SUBSTRING('abcdef', 2, 3)	bcd
REPLACE(str, from, to)	Replace substring	REPLACE('abcabc', 'a', 'z')	zbczbc

Numeric Functions In MySQL

Function	Description	Example	Output
ROUND(x, d)	Round to d decimals	ROUND(12.3456, 2)	12.35
FLOOR(x)	Largest integer ≤ x	FLOOR(5.9)	5
CEIL(x)	Smallest integer ≥ x	CEIL(5.1)	6
ABS(x)	Absolute value	ABS(-25)	25
MOD(x, y)	Remainder	MOD(10, 3)	1
POWER(x, y)	x raised to y	POWER(2, 3)	8

Date & Time Functions

Function	Description	Example	Output
NOW()	Current date and time	NOW()	'2025-04-07 14:00:00'
CURDATE()	Current date	CURDATE()	'2025-04-07'
CURTIME()	Current time	CURTIME()	'14:00:00'
DATEDIFF(d1, d2)	Days between dates	DATEDIFF('2025-04-10', '2025-04-01')	9
DATE_ADD(d, INTERVAL x)	Add to date	DATE_ADD('2025-04-01', INTERVAL 5 DAY)	'2025-04-06'
DATE_FORMAT(d, fmt)	Format date	DATE_FORMAT(NOW(), '%Y-%m')	'2025-04'

Aggregate Functions

Function	Description	Example	Use Case
COUNT(*)	Total rows	SELECT COUNT(*) FROM emp;	Row count
SUM(col)	Total sum	SUM(salary)	Total salary
AVG(col)	Average value	AVG(marks)	Mean marks
MAX(col)	Highest value	MAX(age)	Oldest person
MIN(col)	Lowest value	MIN(salary)	Lowest pay

Conditional Functions in MySQL

Function	Description	Example	Output
IF(condition, a, b)	If-else logic	IF(5>3, 'Yes', 'No')	'Yes'
CASE WHEN	Multiple conditions	See below	Pass

```sql
SELECT
  CASE
    WHEN marks >= 50 THEN 'Pass'
    ELSE 'Fail'
  END AS result
FROM students;
```