

# MySQL Functions

# CHAR()

- Definition: Returns the character for each integer passed
- Example 1: `SELECT CHAR(70, 65, 67, 69);`
- Example 2: `SELECT CHAR(65, 67.3, 69.3);`

# CONCAT()

- Definition: Returns concatenated string
- Example: `SELECT CONCAT(name, aggregate) AS 'Name Marks' FROM student WHERE age = 14 OR age = 16;`

# LOWER()/LCASE()

- Definition: Returns the argument in lowercase
- Example 1: `SELECT LOWER('GEEKSFORGEEKS') AS 'LowerName1';`
- Example 2: `SELECT LOWER('Geeks For Geeks') AS 'LowerName2';`

# SUBSTRING()/SUBSTR()

- Definition: Returns the substring as specified
- Example 1: `SELECT SUBSTR('ABSDEFG', 3, 4) AS 'Subs';`
- Example 2: `SELECT SUBSTR('ABCDEFGF', -5, 4) AS 'Subs';`

# UPPER()/UCASE()

- Definition: Converts to uppercase
- Example 1: `SELECT UPPER('Large') AS 'Uppercase';`
- Example 2: `SELECT UCASE('Large') AS 'Uppercase';`

# TRIM()

- Definition: Removes leading and trailing spaces
- Example: `SELECT TRIM(' Bar One ');`

# LENGTH()

- Definition: Returns the length of a string in bytes
- Example: `SELECT LENGTH('CANDIDE') AS 'Length in characters';`



# MOD()

- Definition: Returns the remainder of one expression by dividing by another expression
- Example: `SELECT MOD(11,4) AS 'Modulus';`

# POWER()/POW()

- Definition: Returns the value of one expression raised to the power of another expression
- Example: `SELECT POWER(3,2) AS 'Raised';`

# ROUND()

- Definition: Returns numeric expression rounded to an integer. Can be used to round to decimal points.
- Example: `SELECT ROUND(15.193,1) AS 'Round';`

# SIGN()

- Definition: Returns sign of a given number
- Example: `SELECT SIGN(-15) AS 'Sign';`

# SQRT()

- Definition: Returns the non-negative square root of numeric expression
- Example: `SELECT SQRT(26) AS 'Square root';`

# TRUNCATE()

- Definition: Returns numeric expression truncated to specified decimal places
- Example: `SELECT TRUNCATE(15.79,1) AS 'Truncate';`

# CURDATE()/CURRENT\_DATE()

- Definition: Returns the current date
- Example: `SELECT CURDATE();`

# CURTIME()

- Definition: Returns current time
- Example: `SELECT CURTIME() AS CurrentTime;`



# DATE\_ADD()

- Definition: Adds interval to a date
- Example: `SELECT DATE_ADD(hire_date, INTERVAL 6 MONTH) AS ProbationEnd FROM employees;`

# DATE\_SUB()

- Definition: Subtracts interval from a date
- Example: `SELECT DATE_SUB(hire_date, INTERVAL 15 DAY) AS BeforeHire`  
`FROM employees;`

# DATEDIFF()

- Definition: Returns difference in days between two dates (date1 - date2)
- Example: `SELECT DATEDIFF(CURDATE(), hire_date) AS DaysWorked FROM employees;`

# TIMESTAMPDIFF()

- Definition: Returns difference between two datetimes in given unit (SECOND, MINUTE, HOUR, DAY, MONTH, YEAR)
- Example: `SELECT TIMESTAMPDIFF(YEAR, hire_date, CURDATE()) AS YearsWorked FROM employees;`

# DATE()

- Definition: Extracts the date part of a date or date-time expression
- Example: `SELECT DATE('2020-12-31 01:02:03');`

# MONTH()

- Definition: Returns the month from the date passed
- Example: `SELECT MONTH('2020-12-31');`

# YEAR()

- Definition: Returns the year
- Example: `SELECT YEAR('2020-12-31');`

# NOW()

- Definition: Returns the time at which the function executes
- Example: `SELECT NOW();`



# SYSDATE()

- Definition: Returns the current date and time
- Example 1: `SELECT NOW(), SLEEP(2), NOW();`
- Example 2: `SELECT SYSDATE(), SLEEP(2), SYSDATE();`

Function	What It Does
CHAR(n1, n2, ...)	Returns the characters whose ASCII codes are given.
CONCAT(str1, str2, ...)	Concatenates (joins) two or more strings into one string.
LOWER(str) / LCASE(str)	Converts string to lowercase.
SUBSTRING(str, pos, len) / SUBSTR(str, pos, len)	Returns a substring starting at pos with length len. Negative pos counts from end.
UPPER(str) / UCASE(str)	Converts string to uppercase.
TRIM(str)	Removes leading and trailing spaces from string.
LENGTH(str)	Returns length of string in bytes. (For number of characters, use CHAR_LENGTH(str).)

Function	What It Does
MOD(x, y)	Returns remainder of $x \div y$ .
POWER(x, y) / POW(x, y)	Returns x raised to the power y.
ROUND(x, d)	Rounds x to d decimal places (or to nearest integer if d omitted).
SIGN(x)	Returns sign of x: -1 for negative, 0 for zero, +1 for positive.
SQRT(x)	Returns non-negative square root of x.
TRUNCATE(x, d)	Truncates x to d decimal places (no rounding).

Function	What It Does
CURDATE() / CURRENT_DATE()	Returns current date (YYYY-MM-DD).
DATE(expr)	Extracts date part from date/datetime value.
MONTH(date)	Returns month number (1–12) from date.
YEAR(date)	Returns year from date.
NOW()	Returns current date and time at moment query starts.
SYSDATE()	Returns current date and time at exact moment function executes (can differ from NOW() if query delayed).