String Functions in SQL*Plus (Oracle) & MySQL

String functions allow you to **manipulate and process text data** in SQL. Below is a detailed comparison of **SQL*Plus (Oracle)** and **MySQL** string functions, including examples.

1. String Functions in SQL*Plus (Oracle)

1.1 CONCAT – String Concatenation

DONE

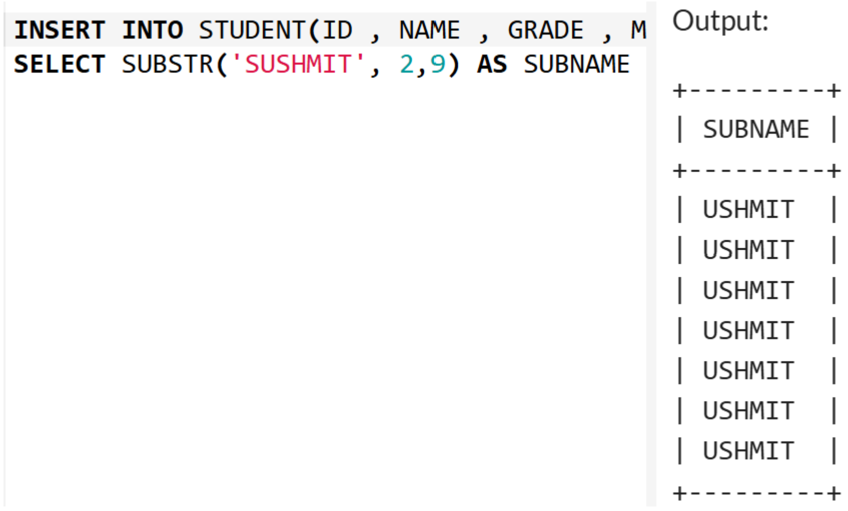
```
SELECT CONCAT('Hello', ' World') FROM dual; -- Result: Hello World
SELECT 'Hello' || ' World' FROM dual; -- Alternative method using ||
```

1.2 LENGTH – String Length

DONE

```
SELECT LENGTH('Oracle Database') FROM dual; -- Result: 16
```

1.3 SUBSTR – Extract Substring



```
INSERT INTO STUDENT(ID , NAME , GRADE , M
SELECT SUBSTR('SUSHMIT', 2,9) AS SUBNAME
```

Output:

```
+---------+
| SUBNAME |
+---------+
| USHMIT  |
| USHMIT  |
| USHMIT  |
| USHMIT  |
| USHMIT  |
| USHMIT  |
| USHMIT  |
+---------+
SELECT SUBSTR('Oracle Database', 8, 3) FROM dual; -- Extracts 'Dat' (Start from 8, length 3)
```

1.4 INSTR – Find Position of a Substring

DONE

```
SELECT INSTR('Oracle Database', 'D') FROM dual; -- Finds position of 'D' (Result: 8)
```

1.5 REPLACE – Replace a Substring

DONE

```
SELECT REPLACE('Oracle Database', 'Database', 'SQL') FROM dual; -- Result: Oracle SQL
```

1.6 TRANSLATE – Replace Multiple Characters

DONE

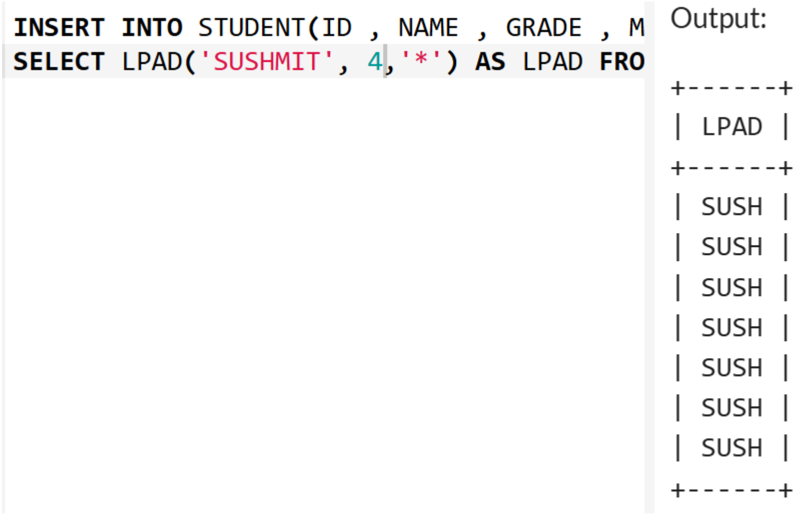
```
SELECT TRANSLATE('123-456-7890', '123', 'XYZ') FROM dual; -- Result: XYZ-456-7890
```

1.7 TRIM – Remove Spaces or Characters

DONE

```
SELECT TRIM('   Oracle   ') FROM dual; -- Removes leading and trailing spaces
SELECT TRIM('O' FROM 'Oracle') FROM dual; -- Removes 'O' from both ends
```

1.8 LPAD & RPAD – Padding Strings

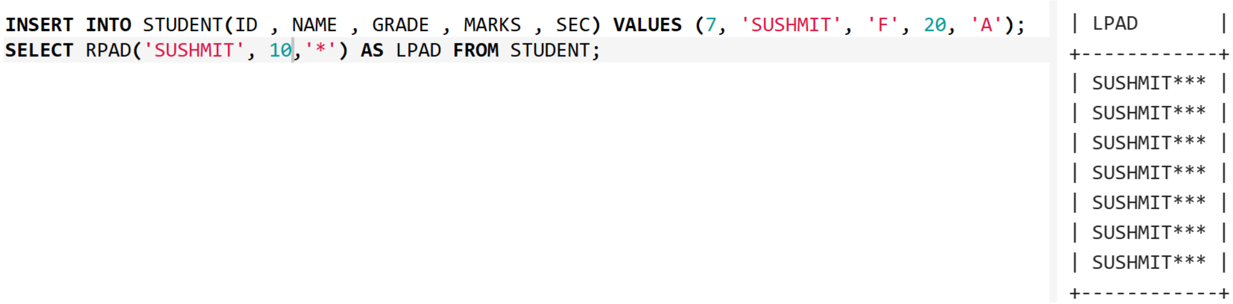


```
INSERT INTO STUDENT(ID , NAME , GRADE , M
SELECT LPAD('SUSHMIT', 4,'*') AS LPAD FRO
```

Output:

```
+------+
| LPAD |
+------+
| SUSH |
| SUSH |
| SUSH |
| SUSH |
| SUSH |
| SUSH |
| SUSH |
+------+
```

```
SELECT LPAD('Oracle', 10, '*') FROM dual; -- Result: ****Oracle SELECT
RPAD('Oracle', 10, '*') FROM dual; -- Result: Oracle****
```



```
INSERT INTO STUDENT(ID , NAME , GRADE , MARKS , SEC) VALUES (7, 'SUSHMIT', 'F', 20, 'A');
SELECT RPAD('SUSHMIT', 10,'*') AS LPAD FROM STUDENT;
```

```
| LPAD       |
+------------+
| SUSHMIT*** |
| SUSHMIT*** |
| SUSHMIT*** |
| SUSHMIT*** |
| SUSHMIT*** |
| SUSHMIT*** |
| SUSHMIT*** |
+------------+
```

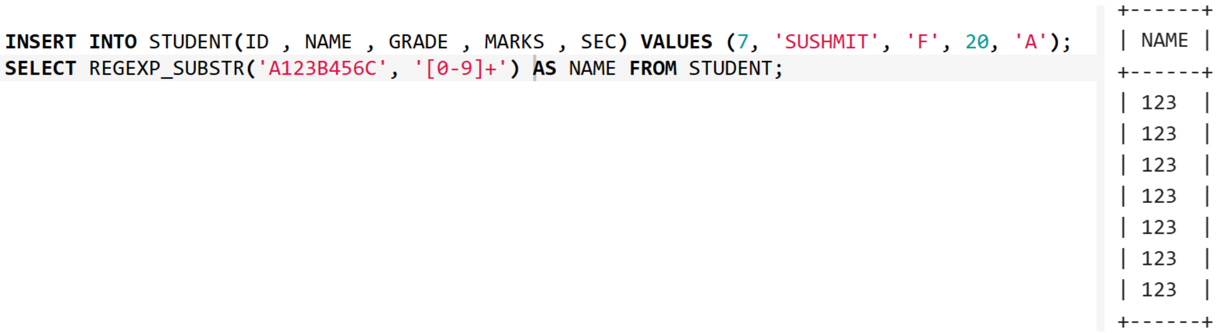
1.9 LOWER, UPPER, INITCAP – Case Conversion

DONE

```
SELECT LOWER('Oracle Database') FROM dual; -- Result: oracle database
SELECT UPPER('Oracle Database') FROM dual; -- Result: ORACLE DATABASE
SELECT INITCAP('oracle database') FROM dual; -- Result: Oracle
Database
```

1.10 REGEXP Functions – Regular Expressions

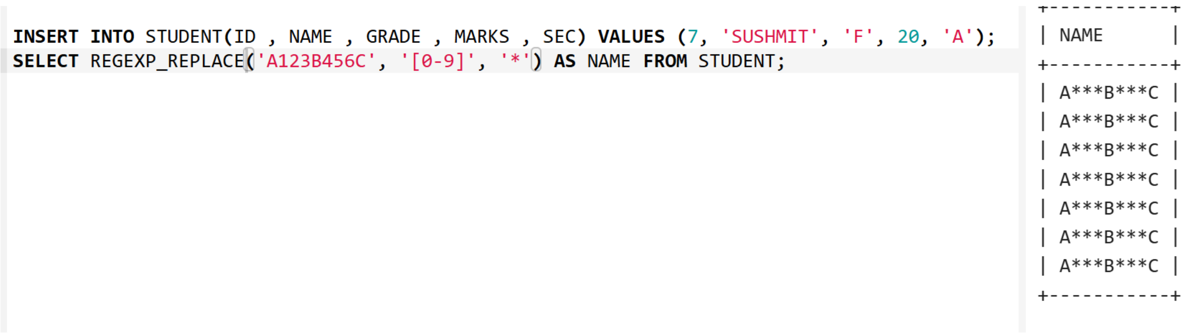
```
SELECT REGEXP_SUBSTR('A123B456C', '[0-9]+') FROM dual; -- Extracts
first number (Result: 123)
```



```
INSERT INTO STUDENT(ID , NAME , GRADE , MARKS , SEC) VALUES (7, 'SUSHMIT', 'F', 20, 'A');
SELECT REGEXP_SUBSTR('A123B456C', '[0-9]+') AS NAME FROM STUDENT;
```

```
+------+
| NAME |
+------+
| 123  |
| 123  |
| 123  |
| 123  |
| 123  |
| 123  |
| 123  |
+------+
```

```
SELECT REGEXP_REPLACE('abc123xyz', '[0-9]', '*') FROM dual; -- Replaces digits with '*' (Result: abc***xyz)
```



```
INSERT INTO STUDENT(ID , NAME , GRADE , MARKS , SEC) VALUES (7, 'SUSHMIT', 'F', 20, 'A');
SELECT REGEXP_REPLACE('A123B456C', '[0-9]', '*') AS NAME FROM STUDENT;
```

```
+-----------+
| NAME      |
+-----------+
| A***B***C |
| A***B***C |
| A***B***C |
| A***B***C |
| A***B***C |
| A***B***C |
| A***B***C |
+-----------+
```

2. String Functions in MySQL

2.1 CONCAT – String Concatenation

```
SELECT CONCAT('Hello', ' World'); -- Result: Hello World
```

2.2 LENGTH – String Length

```
SELECT LENGTH('MySQL Database'); -- Result: 15
```

2.3 SUBSTRING – Extract Substring

```
SELECT SUBSTRING('MySQL Database', 8, 3); -- Extracts 'Dat' (Start from 8, length 3)
```

2.4 LOCATE & INSTR – Find Position of a Substring

```
SELECT LOCATE('D', 'MySQL Database'); -- Result: 8
SELECT INSTR('MySQL Database', 'D'); -- Result: 8
```

2.5 REPLACE – Replace a Substring

```
SELECT REPLACE('MySQL Database', 'Database', 'Server'); -- Result: MySQL Server
```

2.6 TRIM – Remove Spaces or Characters

```
SELECT TRIM('   MySQL   '); -- Removes leading and trailing spaces
SELECT TRIM('M' FROM 'MySQL'); -- Removes 'M' from both ends
```

2.7 LPAD & RPAD – Padding Strings

```
SELECT LPAD('MySQL', 10, '*'); -- Result: *****MySQL
SELECT RPAD('MySQL', 10, '*'); -- Result: MySQL*****
```

2.8 LOWER, UPPER – Case Conversion

```
SELECT LOWER('MySQL Database'); -- Result: my database
SELECT UPPER('MySQL Database'); -- Result: MYSQL DATABASE
```

2.9 REGEXP Functions – Regular Expressions

```
SELECT REGEXP_SUBSTR('abc123xyz', '[0-9]+'); -- Extracts first number (Result: 123)
SELECT REGEXP_REPLACE('abc123xyz', '[0-9]', '*'); -- Replaces digits with '*' (Result: abc***xyz)
```

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3. Key Differences Between SQL*Plus (Oracle) and MySQL String Functions

Function	Oracle (SQL*Plus)	MySQL
Concatenation	CONCAT(str1, str2) or `'	
Substring	SUBSTR(str, start, length)	SUBSTRING(str, start, length)
Find Position	INSTR(str, substring)	LOCATE(substring, str) or INSTR(str, substring)
Replace Substring	REPLACE(str, old, new)	REPLACE(str, old, new)
Trim Spaces	TRIM(str)	TRIM(str)
Padding	LPAD(str, length, pad_char), RPAD(str, length, pad_char)	LPAD(str, length, pad_char), RPAD(str, length, pad_char)
Case Conversion	UPPER(str), LOWER(str), INITCAP(str)	UPPER(str), LOWER(str)
Regular Expressions	REGEXP_SUBSTR(), REGEXP_REPLACE()	REGEXP_SUBSTR(), REGEXP_REPLACE()

4. Special Notes

- Oracle has **INITCAP()**, which capitalizes the first letter of each word, whereas MySQL does **not**.

- `CONCAT()` in Oracle only takes **two** arguments, while in MySQL it can take **multiple**.
- Regular expressions (`REGEXP_...`) are available in both, but Oracle has more advanced capabilities.