

SQL[Section 1- unit 1 and 2] Case and Character Manipulation Functions

DUAL: a dummy table used to view results from functions and calculations

```
SELECT(400+600)/ 5  
FROM DUAL;
```

Following are the **single-row functions** (functions that operate on single rows only and return one result per row) that perform case conversion and/or character manipulation

- Character case-manipulation functions LOWER, UPPER, and INITCAP in a SQL query.
 - Select and apply character-manipulation functions CONCAT, SUBSTR, LENGTH, INSTR, LPAD, RPAD, TRIM, and REPLACE in a SQL query
1. **UPPER:** Converts alpha characters to upper case
 2. **Lower:** Converts alpha characters to upper case
 3. **INITCAP:** Converts alpha character values to uppercase for the first letter of each word, all other letters in lowercase.

Examples:

```
SELECT UPPER(title) AS "Rock Stars"  
FROM My_cds  
WHERE cd_number = 60; [converts title into upper case for cds with cd_ number = 60  
in My_cds table]
```

```
SELECT title  
FROM d_cds  
WHERE INITCAP(title) = 'Carpe Diem';
```

Case Conversion Functions:

CONCAT: Concatenates [joins] the first character value to the second character value; equivalent to concatenation operator (||).

SUBSTR: Returns specific characters from character value starting at a specific character position and going specified character positions long

INSTR: Returns the numeric position of a named string.

LENGTH: Returns the number of characters in the expression

LPAD: Pads the left side of a character, resulting in a right-justified value

RPAD: Pads the right-hand side of a character, resulting in a left-justified value.

TRIM: Removes all specified characters from either the beginning or the ending of a string.

REPLACE: Replaces a sequence of characters in a string with another set of characters.

Function	Result
CONCAT ('Hello', 'World')	HelloWorld
SUBSTR ('HelloWorld', 1, 5)	Hello
Function	Result
LENGTH ('HelloWorld')	10
INSTR ('HelloWorld', 'W')	6
LPAD (salary, 10, '*')	*****24000
RPAD (salary, 10, '*')	24000*****
TRIM ('H', FROM 'HelloWorld')	elloWorld
Function	Result
REPLACE('JACK and JUE','J','BL')	BLACK and BLUE

```
SELECT LOWER (last_name)||LOWER(SUBSTR(first_name,1,1)) AS "User Name"
FROM f_staffs;
```

|| can be used in place of CONCAT function

```
SELECT *
FROM employees
WHERE last_name = :l_name [:substitution variable used for taking input from the user]
We use * when we want to select all records.
```

Number functions: These functions accept numeric input and return numeric values.

1. **TRUNC:** Used to terminate the column, expression, or value to a specified number of decimal places
2. **MOD:** Returns the remainder of a division. E.g. MOD (100, 2)
3. **ROUND:** Rounds the column, expression, or value to a set number of decimal places.

Syntax is

```
ROUND (column|expression, decimal places)
TRUNC (column/expression, decimal places)
```

```
Round (458.789, 2)
FROM DUAL; [ will give the output 458.79]
```

To round digits to the left of decimal place we use minus sign with the number.
e.g. ROUND(458.79, -2)

Using the above SQL commands write solution for the following questions. Before attempting them read Section I of the Database Design and Programming with SQL. E-mail your homework to rsawhney@vasantvalley.org . The first one has been done for you.

Accessing the Apex Account

Address: <https://iacademy4.oracle.com>

School: IN_2910

User: IN_2910_SQL01_S01 [the number runs up to S30]

Password: oracle

1. Using the three separate words "Oracle," "Internet," and "Academy," use one command to produce the following output:

The Best Class

Oracle Internet Academy

Solution

```
SELECT CONCAT('Oracle ', 'Internet')|| ' Academy' AS "The Best Class"  
FROM DUAL;
```

AS “The Best Class” is used as a column alias. Alias is used when you want to give your own column heading in the output.

2. What's the position of “I” in "Oracle Internet Academy"?
3. Starting with the string "Oracle Internet Academy", pad the string to produce:

Oracle\$\$\$Internet\$\$\$Academy

4. Using the string 'Oracle Internet Academy', produce the output shown using the REPLACE function.

The Best Class

Oracle 2009-2010 Academy

5. Divide each employee's salary by 3. Display only those employees' last names and salaries who earn a salary that is a multiple of 3.
6. Use a MOD number function to determine whether 38873 is an even number or an odd number.
7. Use the DUAL table to process the following numbers:
 - a. 845.553 - round to one decimal place
 - b. 30695.348 - round to two decimal places
 - c. 30695.348 - round to -2 decimal places

- d. 2.3454 - truncate the 454 from the decimal place
- 8. List the order date and the order total from the Global Fast Foods F_ORDERS table. Name the order total as TOTAL, and fill in the empty spaces to the left of the order total with \$.
- 9. Display employee last_name and salary for those employees who work in department 80.