# Descriptive *SQL _Ch: 03*

1. How can we make lower case of a string?

Ans: `select lower('string') from dual;`

2. How can we make upper case of a string?

Ans: `select upper('string') from dual;`

3. How can we make initcap case of a string?

Ans: `select initcap('string') from dual;`

4. How can we concate two string?

Ans: `select concat('1st string','2nd string') from dual;`

5. How to take a part from a string?

Ans: `select substr('HelloWorld',1,5) from dual;`

Output: Hello

6. How to find length of a string?

Ans: `select length('HelloWorld') from dual;`

Output: 10

7. How to find an index of a definite character of a string?

Ans: `select instr('HelloWorld','W') from dual;`

Output: 6

8. How to take all number in a fixed length by using pad such as zero (0) or * in the left side?

Ans: `select lpad(123456,10,'*')from dual;`

Output: `****123456`

9. How to take all number in a fixed length by using pad such as zero (0) or * in the right side?

Ans: `select rpad(123456,10,'*')from dual;`

Output: `123456****`

10. How to replace a part from a string?

Ans: `select replace('jack and jue','j','bl') from dual;`

Output: `black and blue`

11. How to remove blank space from the starting and ending side?

Ans: `select trim(' jack and jue ') from dual;`

Output: `jack and jue`

12. Give an example of using concat, length, instr, substr and where clause?

Ans: `select employee_id,concat(first_name,last_name) name, job_id,length(last_name),instr(last_name,'a')"contain 'a'?" from employees where substr(job_id,4)='REP'`

Output:

| EMPLOYEE_ID | NAME | JOB_ID | LENGTH(LAST_NAME) | contain 'a'? |
|---|---|---|---|---|
| 202 | PatFay | MK_REP | 3 | 2 |
| 203 | SusanMavris | HR_REP | 6 | 2 |
| 204 | HermannBaer | PR_REP | 4 | 2 |
| 150 | PeterTucker | SA_REP | 6 | 0 |

13. How can we find the remainder of two numbers?

Ans: `select mod(10,3) from dual;`

Output: 1

14. Give some example round.

Ans: `select round(45.923,3),round(45.923,0),round(45.923,-1)`
`from dual;`

Output:
```
ROUND(45.923,3) ROUND(45.923,0) ROUND(45.923,-1)
--------------- --------------- ----------------
45.923 46 50
```

15. Give some example trunc.

Ans: select trunc(45.923,2),trunc(45.923,0),trunc(45.923,-1) from dual;

Output:
```
TRUNC(45.923,2) TRUNC(45.923,0) TRUNC(45.923,-1)
--------------- --------------- ----------------
45.92 45 40
```

16. How can we find of our system date?

Ans: `select sysdate from dual;`

Output: `08-APR-15`

17. How can we add number with our system date?

Ans: select sysdate+2 from dual;

Output: `10-APR-15`

18. How can we add a number with our guessed date?

Ans: `select to_date('01-JAN-14')+2 from dual;`

Output: `03-JAN-14`

19. How can we count months within a range?

Ans: `select months_between('01-SEP-95','11-JAN-94') from`
`dual;`

Output:
```
MONTHS_BETWEEN('01-SEP-95','11-SEP-94')
---------------------------------------
11.6774194
```

20. How can we convert date into character?

Ans:
`select to_char(sysdate,'dd month yyyy') from dual;`

Output:

```
TO_CHAR(SYSDATE,'
----------------
09 april 2015
```
**21. How can we convert date into character with spelling and ordinal?**

Ans: `select to_char(sysdate,'ddspth month yyyy') from dual;`

Output:
```
TO_CHAR(SYSDATE,'DDSPTHMONTHY
----------------------------
eleventh april 2015
```
**22. How can we convert date fully spelling?**

Ans: `select to_char(sysdate,'Day Month Year') from dual;`

Output:
```
TO_CHAR(SYSDATE,'DAYMONTHYEAR')
-------------------------------
Saturday April Twenty Fifteen
```
**23. How can we convert date in short format?**

Ans: `select to_char(sysdate,'dd/mm/yy') from dual;`

Output:
```
TO_CHAR(
--------
11/04/15
```
**24.How can we remove a leading zero with our date using fm?**

Ans: `select to_char(sysdate,'fm dd/mm/yy') from dual;`
Output:
```
TO_CHAR(S
---------
11/4/15
```
**25. How can we insert a string inside our date?**

Ans: `select to_char(sysdate,'day "of" Month Year') from dual;`

Output:
```
TO_CHAR(SYSDATE,'DAY"OF"MONTHYEAR')
-----------------------------------------------------------
saturday of April Twenty Fifteen
```
**26. How can we our system date with hour, minute and second?**

Ans: `select to_char(sysdate,'HH:MM:SS PM') from dual;`

Output:
```
TO_CHAR(SYS
-----------
05:04:11 PM
```
**27. How can we insert $ sign in our currency field?**

Ans: `select to_char(salary,'$99,999.00') from employees`

```
where department_id=100;
```
Output:

O_CHAR(SAL

-----------

$12,000.00

$9,000.00

28. How can we substr under concat by using nested function?

Ans: `select concat(substr(last_name,1,4),'_us') from employees where department_id=100;`

Output:
```
CONCAT(
-------
Gree_us
Favi_us
Chen_us
```

29. How can we replace null value with zero?

Ans: `select last_name,nvl(commission_pct,0) from employees where department_id=90;`

Output:
```
LAST_NAME NVL(COMMISSION_PCT,0)
------------------------- ---------------------
King 0
Kochhar 0
De Haan 0
```

30. How does nvl2 works?

Ans: It examine the first expression, if it is not null it returns the second expression otherwise it returns the third expression. E.g:
```
select department_id,nvl2(commission_pct,'sal+com','com')
from employees where department_id in(50,80);
```
Output:
```
DEPARTMENT_ID NVL2(CO
------------- -------
50 com
80 sal+com
```

31. How does nullif function wroks?

Ans: The nullif function compares two expression, if they are equal the function returns null otherwise it returns first expression. E.g:
```
Select
first_name,length(first_name),last_name,length(last_name),
nullif(length(first_name),length(last_name)) result from
employees where department_id=100;
Output:
```

| FIRST_NAME | LENGTH(FIRST_NAME) | LAST_NAME | LENGTH(LAST_NAME) | RESULT |
|---|---|---|---|---|
| Nancy | 5 | Greenberg | 9 | 5 |
| Daniel | 6 | Faviet | 6 | |
| John | 4 | Chen | 4 | |
| Ismael | 6 | Sciarra | 7 | 6 |
| Jose Manuel | 11 | Urman | 5 | 11 |
| Luis | 4 | Popp | 4 | |

## 32. How does coalesce function works?

Ans: coalesce returns the first non-null expression. E.g:

```
select last_name,coalesce(commission_pct,manager_id,-1)
comm from employees;
```

Output:

```
LAST_NAME COMM
------------------------ ----------
OConnell 124
Grant 124
Whalen 101
Hartstein 100
Fay 201
Mavris 101
Baer 101
Higgins 101
Gietz 205
King -1
Kochhar 100
```

## 33. How can we set different condition of different field of our table?

Ans: `select last_name,job_id,salary, case job_id when 'IT_PROG' then 1.10*salary when 'ST_CLERK' then 1.15*salary when 'SA-REP' then 1.20*salary else salary end "REVISED SALARY" from employees;`

Output:

```
LAST_NAME JOB_ID SALARY REVISED SALARY
------------------------ ---------- ---------- ---------
De Haan AD_VP 17000 17000
Hunold IT_PROG 9000 9900
Nayer ST_CLERK 3200 3680
Mikkilineni ST_CLERK 2700 3105
Sully SA_REP 9500 9500
McEwen SA_REP 9000 9000
```

## 34. How can we set different condition of different field of our table by using decode?

Ans: `select last_name,job_id,salary, decode(job_id, 'IT_PROG',1.10*salary,'ST_CLERK',1.15*salary,'SA_REP',1.20*`

```
salary,salary) "REVISED SALARY" from employees;
```
Output:
```
LAST_NAME JOB_ID SALARY REVISED SALARY
------------------------- ---------- ---------- ---------
De Haan AD_VP 17000 17000
Hunold IT_PROG 9000 9900
Nayer ST_CLERK 3200 3680
Mikkilineni ST_CLERK 2700 3105
Sully SA_REP 9500 9500
McEwen SA_REP 9000 9000
```
35. What is function? Why do we use it?

Function: Function is a powerful feature. We use it to perform calculation, to modify individual data items, to manipulate output for groups of rows etc.

36. How many kinds of function? What are they?

Ans: There are two types of functions. Such as:

i) Single-row function

ii) Multiple-row function

37. What is single-row function?

Ans: The function which operates on a single row and returns one result per row is called a single-row function. It covers various data types such as: Character, Number, Date, Conversion and General.

38. What is Multiple-row function?

Ans: The function which can manipulate groups of rows and returns one result on the whole set of rows is called multiple-row function.

39. Suppose you need to make a report to your Authority that all of your employees wants 3 times of their salary. Now make a query to show what would be the salary list with their current and desired salary.

Ans:
```
select last_name||' earns
'||to_char(salary,'fm$99,999.00')||' monthly but wants
'||to_char(salary*3,'fm$99,999.00') "Dream Salaries" from
employees;
```
Output:
```
Dream Salaries
-----------------------------------------------------------
OConnell earns $2,600.00 monthly but wants $7,800.00
Grant earns $2,600.00 monthly but wants $7,800.00
Whalen earns $4,400.00 monthly but wants $13,200.00
```

40. Make a query to find out the date of first Monday after six months of their services in the format "Monday, the Thirty-first of July,2000." of all employees.
Ans: `select`
`to_char(next_day(add_months(hire_date,6),'monday'),'fmDay`
`, "the" ddspth "of" Month, YYYY') from employees;`
Output:
```
TO_CHAR(NEXT_DAY(ADD_MONTHS(HIRE_DATE,6),'MONDAY
------------------------------------------------
Monday, the twenty-seventh of December, 1999
Monday, the seventeenth of July, 2000
Monday, the twenty-first of March, 1988
Monday, the nineteenth of August, 1996
Monday, the twenty-third of February, 1998
```
41. Make a query to find out the day of the joining date of all employee and to display the data in order starting from Monday.
Ans: `select last_name,hire_date,to_char(hire_date,'Day')`
`from employees order byto_char(hire_date-1,'d')`
Output:
```
LAST_NAME                 HIRE_DATE TO_CHAR(H
------------------------- --------- ---------
Bloom                     23-MAR-98 Monday
Smith                     10-MAR-97 Monday
Errazuriz                 10-MAR-97 Monday
Bernstein                 24-MAR-97 Monday
Olsen                     30-MAR-98 Monday
Mikkilineni               28-SEP-98 Monday
```
42. Make a query for all `employees` to replace their commission by "No Commission"  whose commission is null.
Ans: `select nvl(to_char(commission_pct),'No Commission')`
`from employees;`
Output:
```
NVL(TO_CHAR(COMMISSION_PCT),'NOCOMMISSIO
----------------------------------------
.1
No Commission
No Commission
```
43. Make a query to display the first eight character of the employee's last_name and indicates the amount of salary with asterisk where each asterisk signifies a thousand dollars. Sort the data in descending order, Label the column EMS.

Ans: `select rpad(last_name,8)||rpad(' ',salary/1000+1,'*')`
`ems from employees;`
Output:
```
EMS
------------------------
OConnell **
Grant     **
Whalen    ****
Hartstei ************
Fay       ******
```
44. Make a query to find the grade of all employees based on the value of the

column job_id, using the following data.

Ans: `select`
`job_id,decode(job_id,'AD_PRES','A','ST_MAN','B','IT_PROG'`
`,'C','SA_REP','D','ST_CLERK','E',0) Grade from employees;`
Output:
```
JOB_ID     G
---------- -
AD_ASST    0
AD_PRES    A
AD_VP      0
```
45. Make a query to find the grade of all employees based on the value of the

column job_id, using the following data.{use case}

Ans: `select job_id,case job_id when'AD_PRES' then 'A' When`
`'ST_MAN' then 'B' when 'IT_PROG' then 'C' when 'SA_REP'`
`then 'D' when 'ST_CLERK' then 'E' else '0' en`
`d grade from employees;`
Output: `same as above.`