



SQL

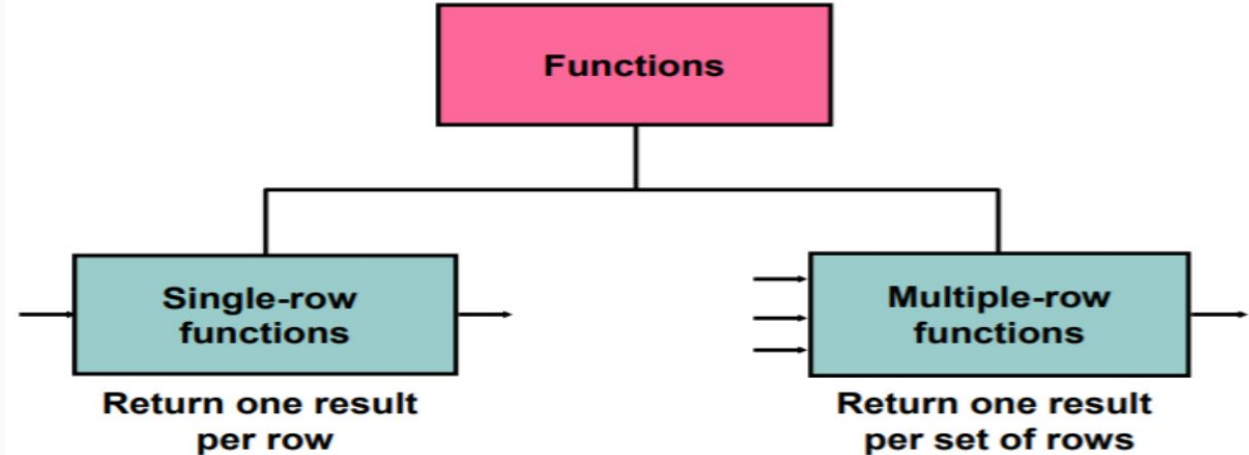
Class 3

Agenda

Functions in SQL

Functions in SQL

- Is a set of statements that performs the task
- Accepts values through parameters
- Returns the processed value



Single Row Functions

- Act on each row and return one result per row
- Can be used in Select and Where Clauses
- Accepts arguments that can be a column or an expression

Types of Single Row Functions:

- Character functions
- Conversion functions
- Date functions
- Number functions
- General functions

These functions operate on single rows only and return one result per ROW

Single Row Functions

Case Manipulation Functions

LOWER, UPPER, and INITCAP

Syntax

```
Select Lower/Upper/Initcap (column name)  
      From Table Name;
```

OR

```
Select column name  
      From Table Name  
Where Lower /Upper/Initcap (column name) =  
      condition;
```

Single Row Functions

Case Manipulation Functions

Display employee number, name and department number for employee Higgins

```
SELECT employee_id, last_name, department_id
FROM   employees
WHERE  last_name = 'higgins';
no rows selected
```

```
SELECT employee_id, last_name, department_id
FROM   employees
WHERE  LOWER(last_name) = 'higgins';
```

Multiple row (Aggregate Functions)

Performs calculation on a set of values and return a single value

Syntax

```
Select max/count/min/avg/sum(column name)  
                From Table Name;
```

Max(), Count(), Sum(), Min(), Avg()

Multiple row (Aggregate Functions)

Performs calculation on a set of values and
return a single value

```
Select job_id, Count(*) From Employees  
Group By job_id;
```



Multiple
ROW
Function

	JOB_ID	COUNT(*)
1	AC_ACCOUNT	1
2	AC_MGR	1
3	AD_ASST	1
4	AD PRES	1
5	AD_VP	2
6	FI_ACCOUNT	5
7	FI_MGR	1
8	HR_REP	1
9	IT_PROG	5
10	MK_MAN	1
11	MK_REP	1
12	PR_REP	1
13	PU_CLERK	5
14	PU_MAN	1
15	SA_MAN	5
16	SA_REP	30

Group By Clause

Used with Aggregate Functions to collect data across multiple records and group the results by one or more columns.

Syntax:

SELECT column1, function_name(column2)

From Table Name

Where condition

Group By column name1

Having Clause

Multiple Row Function → Having Clause

Syntax

```
Select max/count/min/avg/sum(column name),  
       column name  
From Table Name  
Group by column name  
Having group condition;
```

Where

vs

Having

Where Clause

- Used to filter Rows
- Applied before Group BY
- Used if condition doesn't contain Group Function

Having Clause

- Used to filter Groups
- Applied after Group BY
- Used if condition contains Group Function

This is one of the most popular interview questions