JOINS

Topic will cover in this session

What is JOINS

Types of JOINS

1. INNER JOINS
2. OUTER JOIN
    a. LEFT JOIN
    b. RIGHT JOIN
3. CROSS JOIN
4. FULL JOINS

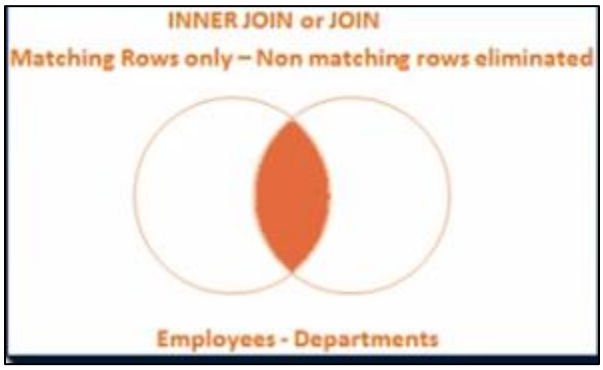
Ques What is Join? Types of Join in SQL

Ans. Joins help retrieving data from two or more database tables.

The tables are mutually related using primary and foreign keys.

INNER Join, Outer Join (Left Join and Right Join),Full Join and Cross Join

Inner Join return on the matching rows between both the tabe.Non matching are eliminated

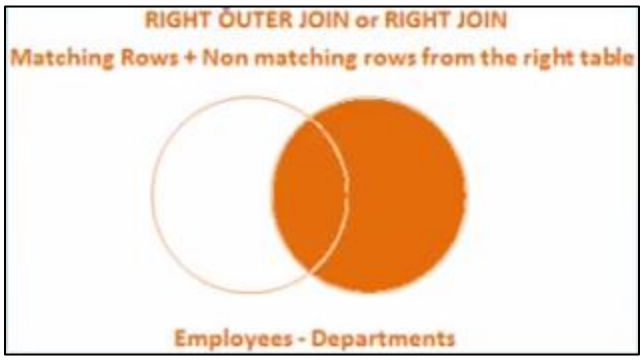


Left Outer Join or Outer Join

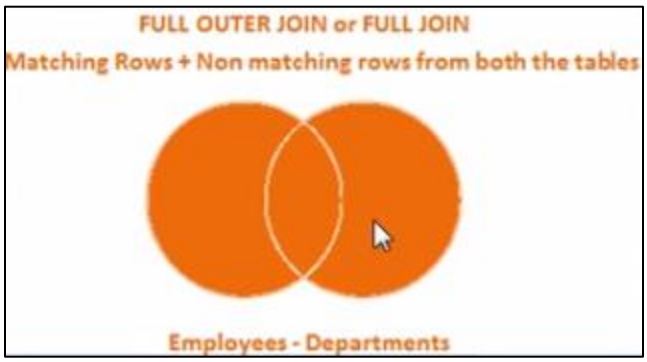
Left Join return all the matching rows + non matching row from the left table.

Right Outer Join or Right Join

Right Join return all the matching rows + non matching row from the right table.



FULL JOIN returns all rows from the both the left and right tables, including the non matching rows.



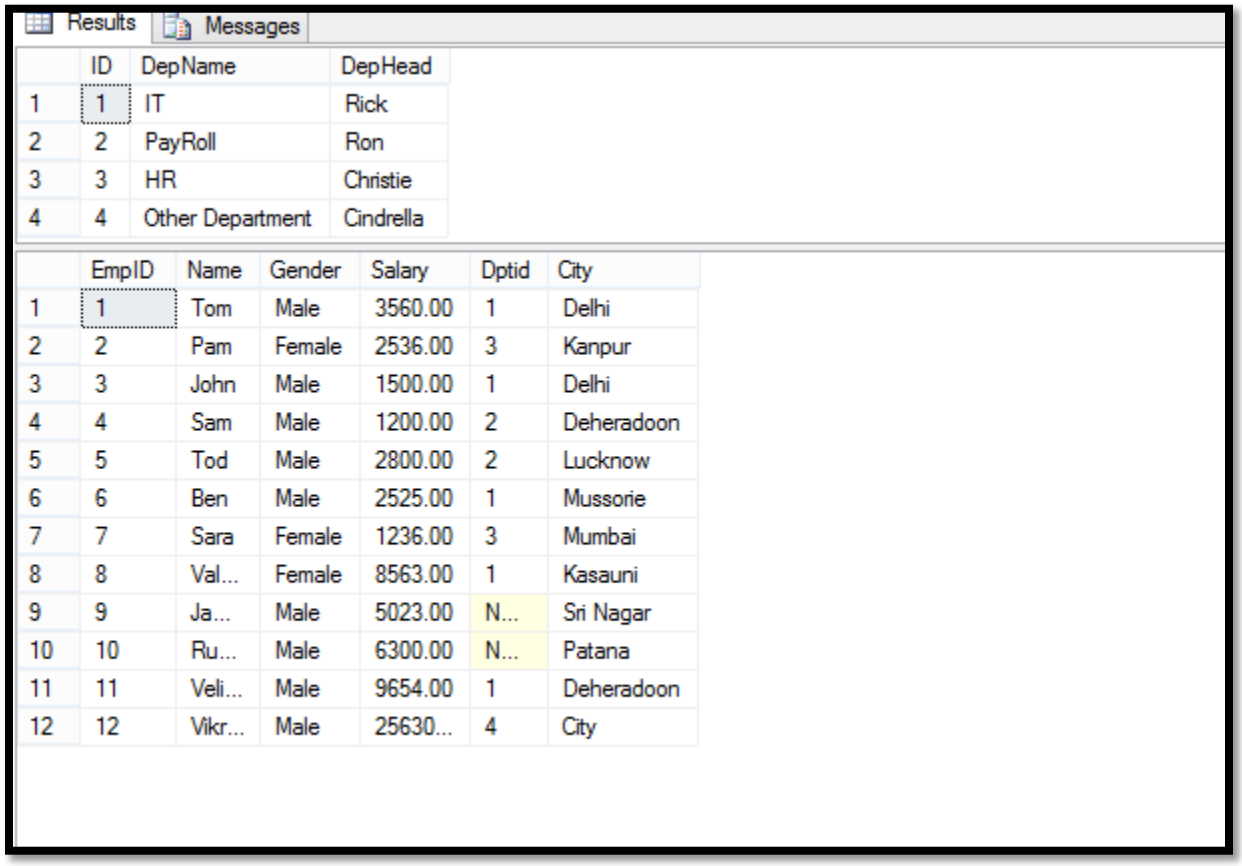
CROSS JOIN, produces the Cartesian product of the 2 tables involved in the join. For Example, in the Employee table we have 10 column and in the Department table we have 4 rows. So, a cross join between the 2 tables produce 40 columns.

CROSS JOIN, return Cartesian product of the tables involved in the join.

Example Inner Join:

tblEmployee	tblDepartment
ID (Primary Key)	ID (Primary Key)
Name	DeptName
Gender	Location
Salary	DeptHead
DeptID (Foreign Key)	

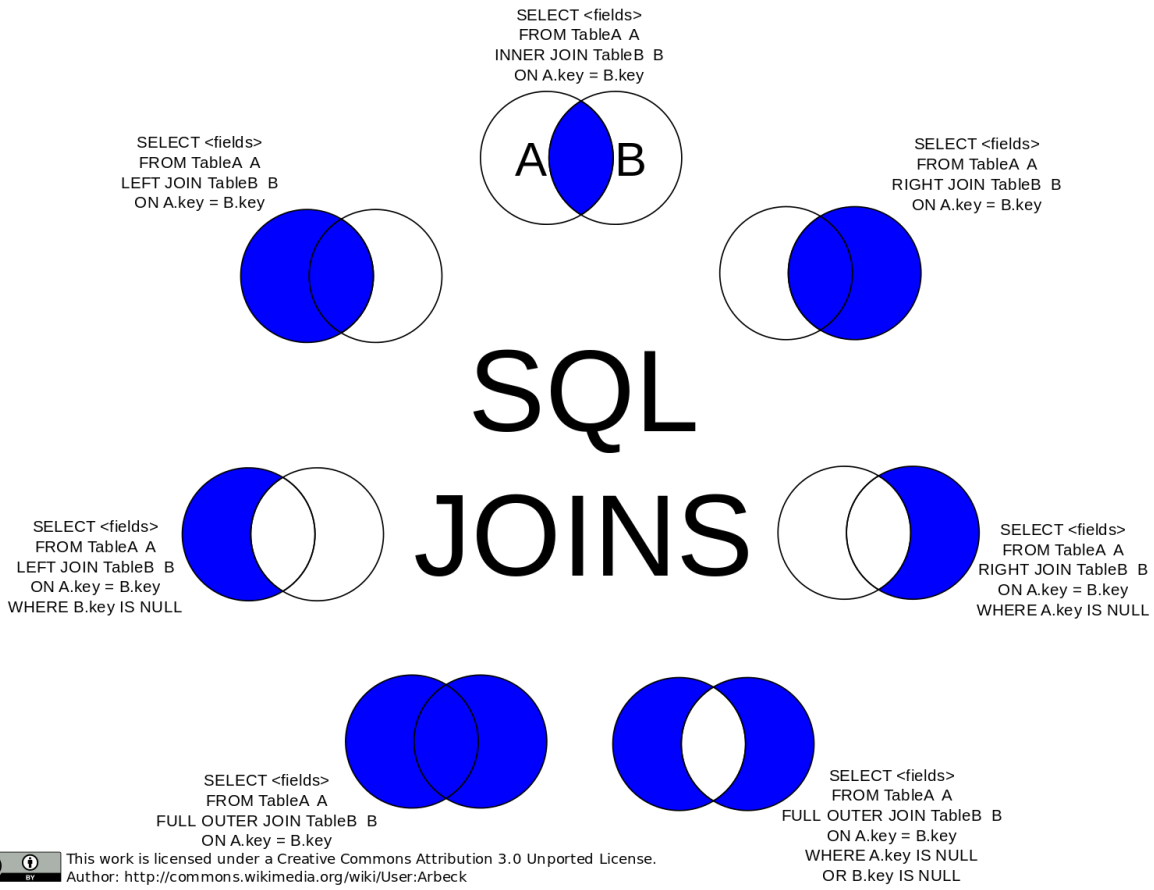
Apply Inner Join
Apply Left Outer or Outer Join
Apply Right Outer or Outer Join



Results | Messages

	ID	DepName	DepHead
1	1	IT	Rick
2	2	PayRoll	Ron
3	3	HR	Christie
4	4	Other Department	Cindrella

	EmpID	Name	Gender	Salary	Dptid	City
1	1	Tom	Male	3560.00	1	Delhi
2	2	Pam	Female	2536.00	3	Kanpur
3	3	John	Male	1500.00	1	Delhi
4	4	Sam	Male	1200.00	2	Deheradoon
5	5	Tod	Male	2800.00	2	Lucknow
6	6	Ben	Male	2525.00	1	Mussorie
7	7	Sara	Female	1236.00	3	Mumbai
8	8	Val...	Female	8563.00	1	Kasauni
9	9	Ja...	Male	5023.00	N...	Sri Nagar
10	10	Ru...	Male	6300.00	N...	Patana
11	11	Veli...	Male	9654.00	1	Deheradoon
12	12	Vikr...	Male	25630...	4	City



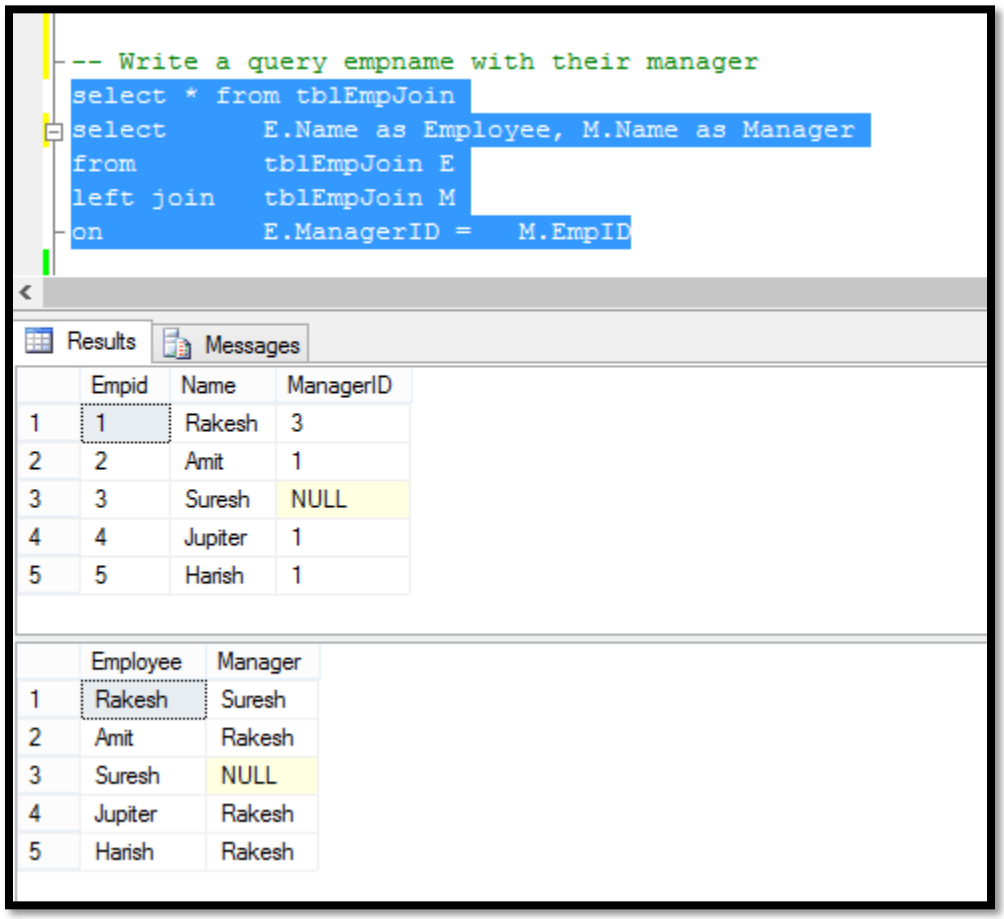
Self-Join

A Self-JOIN is a regular join, but the table is joined with itself.

Self-Join can be classified as

- Inner Self Join
- Outer Self Join (Left,Right,Full)
- Cross Self-Join

Left-Join Example



```
-- Write a query empname with their manager
select * from tblEmpJoin
select      E.Name as Employee, M.Name as Manager
from        tblEmpJoin E
left join   tblEmpJoin M
on          E.ManagerID =   M.EmpID
```

Results | Messages

	Empid	Name	ManagerID
1	1	Rakesh	3
2	2	Amit	1
3	3	Suresh	NULL
4	4	Jupiter	1
5	5	Harish	1

	Employee	Manager
1	Rakesh	Suresh
2	Amit	Rakesh
3	Suresh	NULL
4	Jupiter	Rakesh
5	Harish	Rakesh

Self-Right-Join Example

```
Select * from tblEmpJoin

Select      E.Name as Employee, M.Name as Manager
from        tblEmpJoin E
right join  tblEmpJoin M
on          E.ManagerID =   M.EmpID
```

Results | Messages

	Empid	Name	ManagerID
1	1	Rakesh	3
2	2	Amit	1
3	3	Suresh	NULL
4	4	Jupiter	1
5	5	Harish	1

	Employee	Manager
1	Amit	Rakesh
2	Jupiter	Rakesh
3	Harish	Rakesh
4	NULL	Amit
5	Rakesh	Suresh
6	NULL	Jupiter
7	NULL	Harish

Query executed successfully.

Self-Inner-Join Example

```
--- Sefl Inner Join

Select * from tblEmpJoin
select      E.Name as Employee, M.Name as Manager
from        tblEmpJoin E
inner join  tblEmpJoin M
on          E.ManagerID =   M.EmpID
```

Results | Messages

	EmpID	Name	ManagerID
1	1	Rakesh	3
2	2	Amit	1
3	3	Suresh	NULL
4	4	Jupitor	1
5	5	Harish	1

	Employee	Manager
1	Rakesh	Suresh
2	Amit	Rakesh
3	Jupitor	Rakesh
4	Harish	Rakesh

Query executed successfully.

Self-FULL JOIN

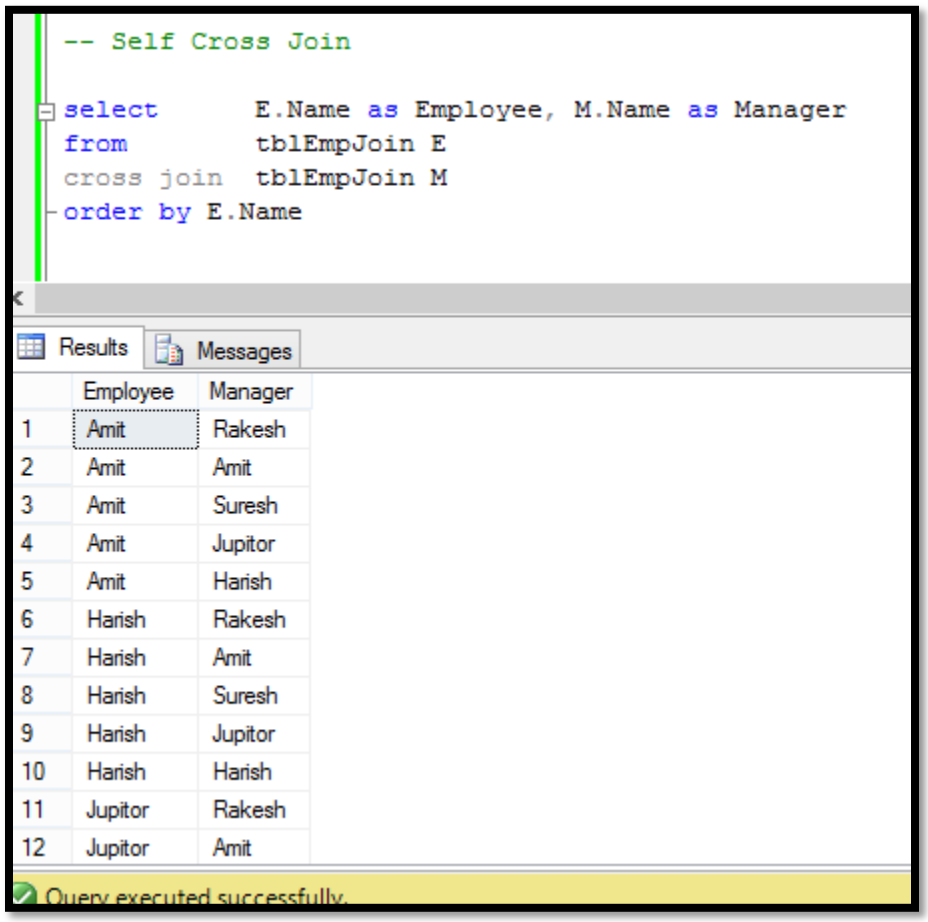
```
Select * from tblEmpJoin
select      E.Name as Employee, M.Name as Manager
from        tblEmpJoin E
Full join   tblEmpJoin M
on          E.ManagerID =   M.EmpID
```

Results | Messages

	EmpID	Name	ManagerID
1	1	Rakesh	3
2	2	Amit	1
3	3	Suresh	NULL
4	4	Jupitor	1
5	5	Harish	1

	Employee	Manager
1	Rakesh	Suresh
2	Amit	Rakesh
3	Suresh	NULL
4	Jupitor	Rakesh
5	Harish	Rakesh
6	NULL	Amit
7	NULL	Jupitor
8	NULL	Harish

Self-Cross-Join Example



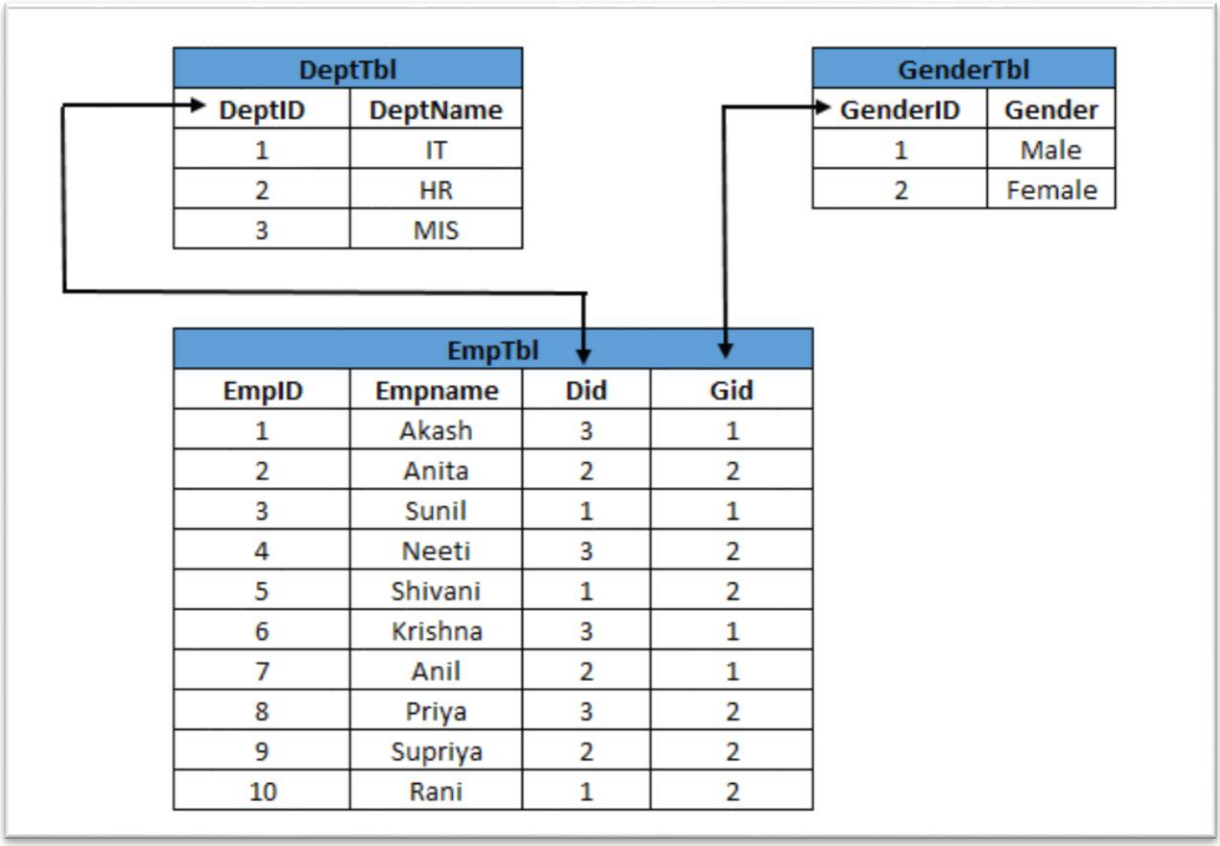
```
-- Self Cross Join

select      E.Name as Employee, M.Name as Manager
from        tblEmpJoin E
cross join  tblEmpJoin M
order by E.Name
```

Results | Messages

	Employee	Manager
1	Amit	Rakesh
2	Amit	Amit
3	Amit	Suresh
4	Amit	Jupitor
5	Amit	Harish
6	Harish	Rakesh
7	Harish	Amit
8	Harish	Suresh
9	Harish	Jupitor
10	Harish	Harish
11	Jupitor	Rakesh
12	Jupitor	Amit

Query executed successfully.

JOINS IN 3 TABLES



DeptTbl

DeptID	DeptName
1	IT
2	HR
3	MIS

GenderTbl

GenderID	Gender
1	Male
2	Female

EmpTbl

EmpID	Empname	Did	Gid
1	Akash	3	1
2	Anita	2	2
3	Sunil	1	1
4	Neeti	3	2
5	Shivani	1	2
6	Krishna	3	1
7	Anil	2	1
8	Priya	3	2
9	Supriya	2	2
10	Rani	1	2

Write a Query to show the Employee Name, Department Name, Gender form the EmpTbl, DeptTbl, GenderTbl.

```
Select E.Empname, D.DeptName, G.Gender
from EmpTbl E
Join DeptTbl D
On E.DId=D.DeptID
Join GenderTbl G
On E.GId= G.GenderID
```

Results | Messages

	Empname	DeptName	Gender
1	Akash	MIS	Male
2	Anita	HR	Female
3	Suil	IT	Male
4	Neeti	MIS	Female
5	Shivani	IT	Female
6	Krishna	MIS	Male
7	Anil	HR	Male
8	Priya	MIS	Female
9	Supriya	HR	Female
10	Rani	IT	Female

Write a Query to show the total number of employee by DeptTbl and by Gender

```
Select D.DeptName, G.Gender , COUNT(*) as TotalEmployee
from EmpTbl E
Join DeptTbl D
On E.DId=D.DeptID
Join GenderTbl G
On E.GId= G.GenderID
Group by DeptName, Gender
Order By DeptName, Gender
```

Results | Messages

	DeptName	Gender	TotalEmployee
1	HR	Female	2
2	HR	Male	1
3	IT	Female	2
4	IT	Male	1
5	MIS	Female	2
6	MIS	Male	2