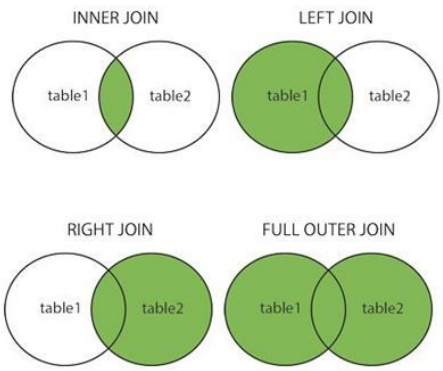
Intermediate SQL Queries



(1)Inner Join:

Inner join shows information that is overlapping in both tables. In this example, I have queried information common on both the tables based on the employee ID

```
SELECT *
FROM [SQL Queries].dbo.EmployeeDemographics
Inner Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
```

Result:

Results Messages

	EmployeeID	FirstName	Lastname	Age	Gender	EmployeeID	JobTitle	Salary
1	101	Gary	Jimenez	41	Male	101	Technology	48000
2	102	Albert	Pardini	23	Male	102	Technology	35000
3	103	David	Sullivan	34	Male	103	HR	20000
4	104	Patricia	Jackson	32	Female	104	Sales and Marketing	21000
5	105	Amy	Hart	21	Female	105	Finance	28000
6	106	Sebastian	Wong	37	Male	106	Technology	36000
7	107	Marty	Ross	32	Male	107	Technology	38000
8	108	Ellen	Moffatt	35	Female	108	HR	20000
9	109	George	Garcia	31	Male	109	Operations	22000
10	110	Judy	Melinek	30	Female	110	Sales and Marketing	25000
11	111	Gregory	Suhr	31	Male	111	Sales and Marketing	25000
12	112	Raymond	Guzman	29	Male	112	Sales and Marketing	25000
13	113	Monica	Fields	27	Female	113	Finance	32000
14	114	Sharon	Mccole	28	Female	114	Finance	32000
15	115	Barbara	Garcia	31	Female	115	HR	28000
16	116	Anna	Brown	30	Female	116	Technology	35000
17	117	Monique	Moyer	38	Female	117	Technology	35000
18	118	Mark	Gamble	36	Male	118	Operations	25000
19	119	Kevin	Burke	39	Male	119	Operations	25000
20	120	Luke	Tse	40	Male	120	Finance	28000

(2) Full Outer Join:

This shows information on both the tables regardless if there are match

```
SELECT *
FROM [SQL Queries].dbo.EmployeeDemographics
Full Outer Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
```

Result:

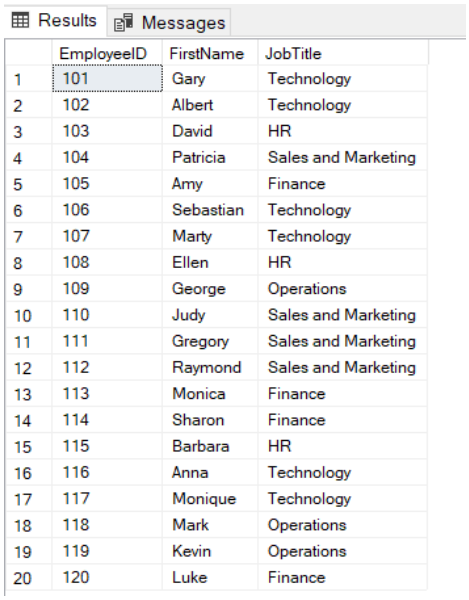
Results Messages

	EmployeeID	FirstName	Lastname	Age	Gender	EmployeeID	JobTitle	Salary
1	101	Gary	Jimenez	41	Male	101	Technology	48000
2	102	Albert	Pardini	23	Male	102	Technology	35000
3	103	David	Sullivan	34	Male	103	HR	20000
4	104	Patricia	Jackson	32	Female	104	Sales and Marketing	21000
5	105	Amy	Hart	21	Female	105	Finance	28000
6	106	Sebastian	Wong	37	Male	106	Technology	36000
7	107	Marty	Ross	32	Male	107	Technology	38000
8	108	Ellen	Moffatt	35	Female	108	HR	20000
9	109	George	Garcia	31	Male	109	Operations	22000
10	110	Judy	Melinek	30	Female	110	Sales and Marketing	25000
11	111	Gregory	Suhr	31	Male	111	Sales and Marketing	25000
12	112	Raymond	Guzman	29	Male	112	Sales and Marketing	25000
13	113	Monica	Fields	27	Female	113	Finance	32000
14	114	Sharon	Mccole	28	Female	114	Finance	32000
15	115	Barbara	Garcia	31	Female	115	HR	28000
16	116	Anna	Brown	30	Female	116	Technology	35000
17	117	Monique	Moyer	38	Female	117	Technology	35000
18	118	Mark	Gamble	36	Male	118	Operations	25000
19	119	Kevin	Burke	39	Male	119	Operations	25000
20	120	Luke	Tse	40	Male	120	Finance	28000

(3) Left Outer Join:

```
SELECT EmployeeSalary.EmployeeID, FirstName, JobTitle
FROM [SQL Queries].dbo.EmployeeDemographics
Left Outer Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
```

Result:



Results | Messages

	EmployeeID	FirstName	JobTitle
1	101	Gary	Technology
2	102	Albert	Technology
3	103	David	HR
4	104	Patricia	Sales and Marketing
5	105	Amy	Finance
6	106	Sebastian	Technology
7	107	Marty	Technology
8	108	Ellen	HR
9	109	George	Operations
10	110	Judy	Sales and Marketing
11	111	Gregory	Sales and Marketing
12	112	Raymond	Sales and Marketing
13	113	Monica	Finance
14	114	Sharon	Finance
15	115	Barbara	HR
16	116	Anna	Technology
17	117	Monique	Technology
18	118	Mark	Operations
19	119	Kevin	Operations
20	120	Luke	Finance

(4) Right Outer Join:

```
SELECT EmployeeDemographics.EmployeeID, JobTitle, Salary
FROM [SQL Queries].dbo.EmployeeDemographics
Right Outer Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
```

Result:

Results | Messages

	EmployeeID	JobTitle	Salary
1	101	Technology	48000
2	102	Technology	35000
3	103	HR	20000
4	104	Sales and Marketing	21000
5	105	Finance	28000
6	106	Technology	36000
7	107	Technology	38000
8	108	HR	20000
9	109	Operations	22000
10	110	Sales and Marketing	25000
11	111	Sales and Marketing	25000
12	112	Sales and Marketing	25000
13	113	Finance	32000
14	114	Finance	32000
15	115	HR	28000
16	116	Technology	35000
17	117	Technology	35000
18	118	Operations	25000
19	119	Operations	25000
20	120	Finance	28000

Let's try to find out the average salary of all the Sales and Marketing employees

```
SELECT JobTitle, AVG(Salary)
FROM [SQL Queries].dbo.EmployeeDemographics
Inner Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
WHERE Jobtitle =  'Sales and Marketing'
GROUP BY JobTitle
```

Results | Messages

	JobTitle	(No column name)
1	Sales and Marketing	24000

(5) Aliasing:

```
SELECT FirstName + ' ' + LastName AS FullName
FROM [SQL Queries].dbo.EmployeeDemographics
```

Result:

Results | Messages

	FullName
1	Gary Jimenez
2	Albert Pardini
3	David Sullivan
4	Patricia Jackson
5	Amy Hart
6	Sebastian Wong
7	Marty Ross
8	Ellen Moffatt
9	George Garcia
10	Judy Melinek
11	Gregory Suhr
12	Raymond Guzman
13	Monica Fields
14	Sharon Mccole
15	Barbara Garcia
16	Anna Brown
17	Monique Moyer
18	Mark Gamble
19	Kevin Burke
20	Luke Tse

(6) Partition By:

```
SELECT FirstName, LastName, Gender, Salary,
COUNT(GENDER) OVER (PARTITION BY Gender) as TotalGender
FROM [SQL Queries]..EmployeeDemographics dem
JOIN [SQL Queries]..EmployeeSalary sal
ON dem.EmployeeID = sal.EmployeeID
```

Result:

Results | Messages

	FirstName	LastName	Gender	Salary	TotalGender
1	Patricia	Jackson	Female	21000	9
2	Amy	Hart	Female	28000	9
3	Ellen	Moffatt	Female	20000	9
4	Monica	Fields	Female	32000	9
5	Sharon	Mccole	Female	32000	9
6	Barbara	Garcia	Female	28000	9
7	Anna	Brown	Female	35000	9
8	Monique	Moyer	Female	35000	9
9	Judy	Melinek	Female	25000	9
10	Gregory	Suhr	Male	25000	11
11	Raymond	Guzman	Male	25000	11
12	Mark	Gamble	Male	25000	11
13	Kevin	Burke	Male	25000	11
14	Luke	Tse	Male	28000	11
15	George	Garcia	Male	22000	11
16	Gary	Jimenez	Male	48000	11
17	Albert	Pardini	Male	35000	11
18	David	Sullivan	Male	20000	11
19	Sebastian	Wong	Male	36000	11
20	Marty	Ross	Male	38000	11

(7) Ntile:

The following statement uses this function to divide the employees into five buckets based on their salaries:

```
SELECT EmployeeDemographics.EmployeeID, FirstName, Lastname, Salary,
NTILE(5) OVER
(ORDER BY salary DESC)
salary_group
FROM [SQL Queries].dbo.EmployeeDemographics
Right Outer Join [SQL Queries].dbo.EmployeeSalary
ON EmployeeDemographics.EmployeeID = EmployeeSalary.EmployeeID
```

Result:

Results | Messages

	EmployeeID	FirstName	Lastname	Salary	salary_group
1	101	Gary	Jimenez	48000	1
2	107	Marty	Ross	38000	1
3	106	Sebastian	Wong	36000	1
4	102	Albert	Pardini	35000	1
5	116	Anna	Brown	35000	2
6	117	Monique	Moyer	35000	2
7	113	Monica	Fields	32000	2
8	114	Sharon	Mccole	32000	2
9	115	Barbara	Garcia	28000	3
10	105	Amy	Hart	28000	3
11	120	Luke	Tse	28000	3
12	110	Judy	Melinek	25000	3
13	111	Gregory	Suhr	25000	4
14	112	Raymond	Guzman	25000	4
15	118	Mark	Gamble	25000	4
16	119	Kevin	Burke	25000	4
17	109	George	Garcia	22000	5
18	104	Patricia	Jackson	21000	5
19	103	David	Sullivan	20000	5
20	108	Ellen	Moffatt	20000	5

(8) Percent rank:

The following statement returns the percentile ranking of employees by their salaries per department:

```
SELECT FirstName, Lastname, Salary, JobTitle,
ROUND(
PERCENT_RANK() OVER (
PARTITION BY JobTitle
ORDER BY salary
)
,2) percentile_rank
FROM [SQL Queries]..EmployeeDemographics dem
JOIN [SQL Queries]..EmployeeSalary sal
ON dem.EmployeeID = sal.EmployeeID
```

Result:

Results Messages

	FirstName	Lastname	Salary	JobTitle	percentile_rank
1	Amy	Hart	28000	Finance	0
2	Luke	Tse	28000	Finance	0
3	Monica	Fields	32000	Finance	0.67
4	Sharon	Mccole	32000	Finance	0.67
5	David	Sullivan	20000	HR	0
6	Ellen	Moffatt	20000	HR	0
7	Barbara	Garcia	28000	HR	1
8	George	Garcia	22000	Operations	0
9	Mark	Gamble	25000	Operations	0.5
10	Kevin	Burke	25000	Operations	0.5
11	Patricia	Jackson	21000	Sales and Marketing	0
12	Judy	Melinek	25000	Sales and Marketing	0.33
13	Gregory	Suhr	25000	Sales and Marketing	0.33
14	Raymond	Guzman	25000	Sales and Marketing	0.33
15	Albert	Pardini	35000	Technology	0
16	Anna	Brown	35000	Technology	0
17	Monique	Moyer	35000	Technology	0
18	Sebastian	Wong	36000	Technology	0.6
19	Marty	Ross	38000	Technology	0.8
20	Gary	Jimenez	48000	Technology	1