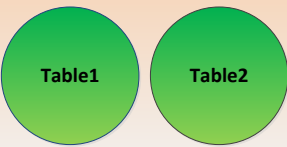


# TSQL JOIN TYPES

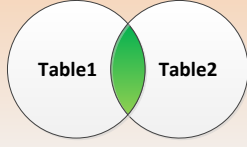
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```
SELECT *
FROM Table1;

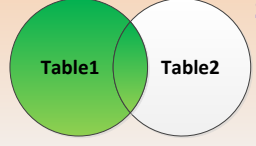
SELECT *
FROM Table2;
```

SELECT from two tables



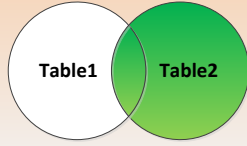
```
SELECT *
FROM Table1 t1
INNER JOIN Table2 t2
ON t1.fk = t2.id;
```

INNER JOIN



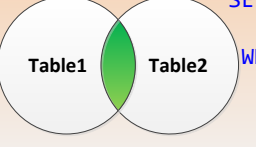
```
SELECT *
FROM Table1 t1
LEFT OUTER JOIN Table2 t2
ON t1.fk = t2.id;
```

LEFT OUTER JOIN



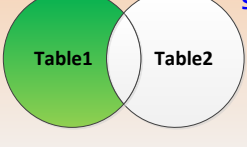
```
SELECT *
FROM Table1 t1
RIGHT OUTER JOIN Table2 t2
ON t1.fk = t2.id;
```

RIGHT OUTER JOIN



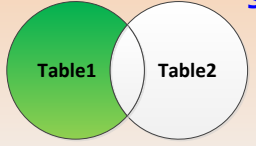
```
SELECT *
FROM Table1 t1
WHERE EXISTS (SELECT 1
FROM Table2 t2
WHERE t1.fk = t2.id
);
```

SEMI JOIN



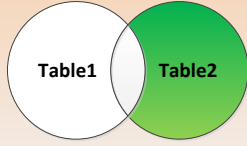
```
SELECT *
FROM Table1 t1
WHERE NOT EXISTS (SELECT 1
FROM Table2 t2
WHERE t1.fk = t2.id
);
```

ANTI SEMI JOIN



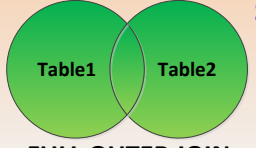
```
SELECT *
FROM Table1 t1
LEFT OUTER JOIN Table2 t2
ON t1.fk = t2.id
WHERE t2.id IS NULL;
```

LEFT OUTER JOIN with exclusion  
– replacement for a NOT IN



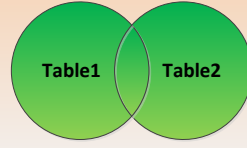
```
SELECT *
FROM Table1 t1
RIGHT OUTER JOIN Table2 t2
ON t1.fk = t2.id
WHERE t1.fk IS NULL;
```

RIGHT OUTER JOIN with exclusion  
– replacement for a NOT IN



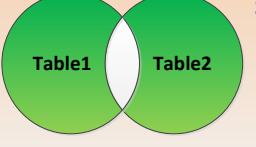
```
SELECT *
FROM Table1 t1
FULL OUTER JOIN Table2 t2
ON t1.fk = t2.id;
```

FULL OUTER JOIN



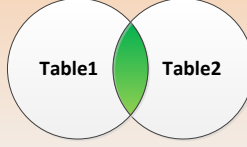
```
SELECT *
FROM Table1 t1
CROSS JOIN Table2 t2;
```

CROSS JOIN, the Cartesian product



```
SELECT *
FROM Table1 t1
FULL OUTER JOIN Table2 t2
ON t1.fk = t2.id
WHERE t1.fk IS NULL
OR t2.id IS NULL;
```

FULL OUTER JOIN with exclusion



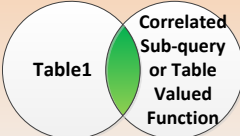
```
SELECT *
FROM Table1 t1
INNER JOIN Table2 t2
ON t1.fk >= t2.id;
```

NON-EQUI INNER JOIN

Created By Steve Stedman <http://SteveStedman.com>  
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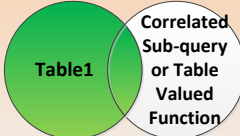
# TSQL JOIN TYPES

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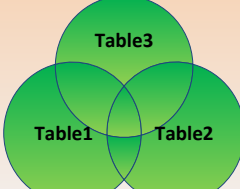
**CROSS APPLY**

```
SELECT *
FROM Table1 t1
CROSS APPLY
    [dbo].[someTVF](t1.fk)
AS t;
```



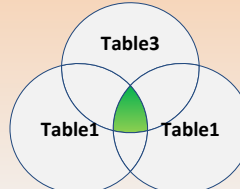
**OUTER APPLY**

```
SELECT *
FROM Table1 t1
OUTER APPLY
    [dbo].[someTVF](t1.fk)
AS t;
```



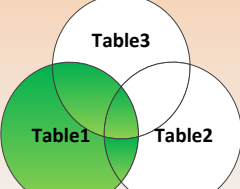
**Two FULL OUTER JOINS**

```
SELECT *
FROM Table1 t1
FULL OUTER JOIN Table2 t2
    ON t1.fk = t2.id
FULL OUTER JOIN Table3 t3
    ON t1.fk_table3 = t3.id;
```



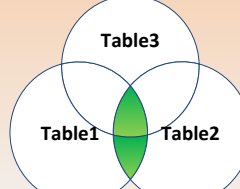
**Two INNER JOINS**

```
SELECT *
FROM Table1 t1
INNER JOIN Table2 t2
    ON t1.fk = t2.id
INNER JOIN Table3 t3
    ON t1.fk_table3 = t3.id;
```



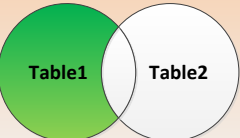
**Two LEFT OUTER JOINS**

```
SELECT *
FROM Table1 t1
LEFT OUTER JOIN Table2 t2
    ON t1.fk = t2.id
LEFT OUTER JOIN Table3 t3
    ON t1.fk_table3 = t3.id;
```



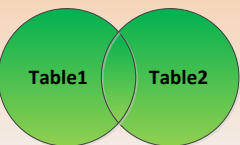
**INNER JOIN and a LEFT OUTER JOIN**

```
SELECT *
FROM Table1 t1
INNER JOIN Table2 t2
    ON t1.fk = t2.id
LEFT OUTER JOIN Table3 t3
    ON t1.fk_table3 = t3.id;
```



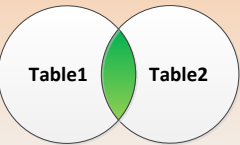
**EXCEPT**

```
SELECT fk as id
FROM Table1
EXCEPT
SELECT ID
FROM Table2;
```



**UNION**

```
SELECT fk as id
FROM Table1
UNION
SELECT ID
FROM Table2;
```



**INTERSECT**

```
SELECT fk as id
FROM Table1
INTERSECT
SELECT ID
FROM Table2;
```

### Sample Schema

**Table 1  
(People)**

	id	Name	fk	fk_table3
1	1	Steve	1	NULL
2	2	Aaron	3	NULL
3	3	Mary	2	NULL
4	4	Fred	1	NULL
5	5	Anne	5	NULL
6	6	Beth	8	1
7	7	Johnny	NULL	1
8	8	Karen	NULL	2

**Table 2  
(Favorite Colors)**

	id	FavoriteColor
1	1	red
2	2	green
3	3	blue
4	4	pink
5	5	purple
6	6	mauve
7	7	orange
8	8	yellow
9	1	indigo

**Table 3  
(Favorite Foods)**

	id	dataValue
1	1	Pizza
2	2	Burger
3	3	Sushi

Note: Column names are very generic to simplify the sample queries.  
Foreign keys are  
Table1.fk -> Table2.id  
Table2.fk\_table3 -> Table3.id

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