TSQL JOIN TYPES
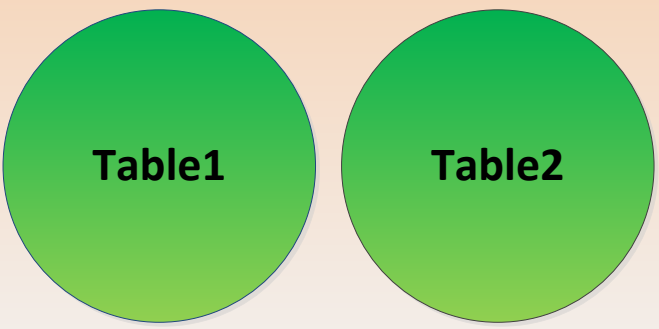
Created by Steve Stedman

SELECT from two tables
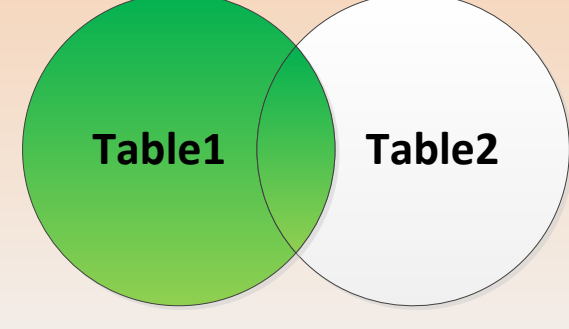
```
SELECT *
    FROM Table1;

SELECT *
    FROM Table2;
```

INNER JOIN

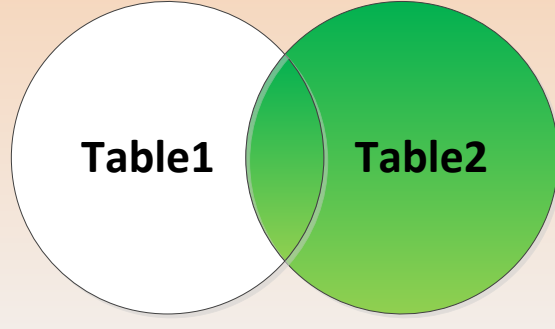```
SELECT *
    FROM Table1 t1
    INNER JOIN Table2 t2
        ON t1.fk = t2.id;
```

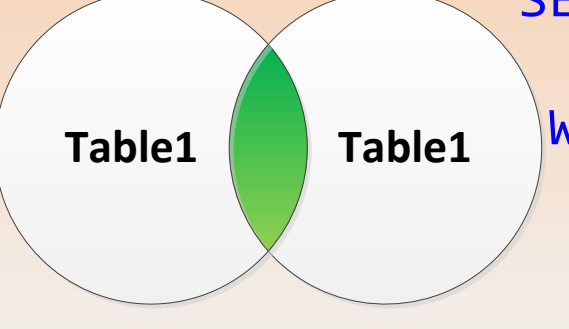**LEFT OUTER JOIN**

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

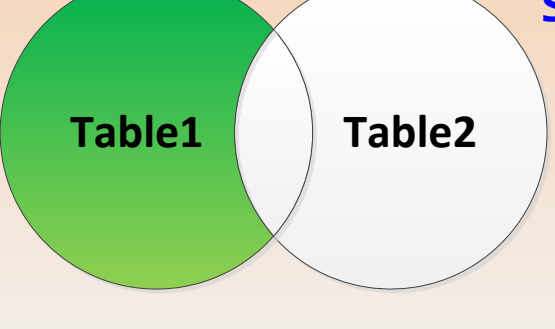**RIGHT OUTER JOIN**

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

SEMI JOIN

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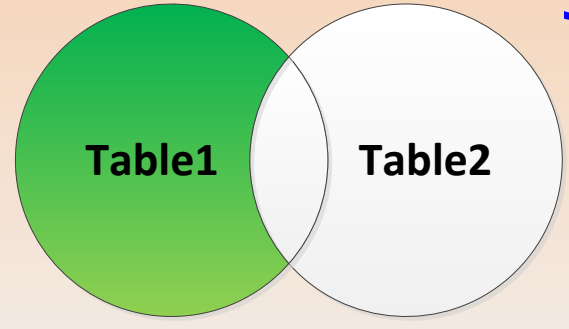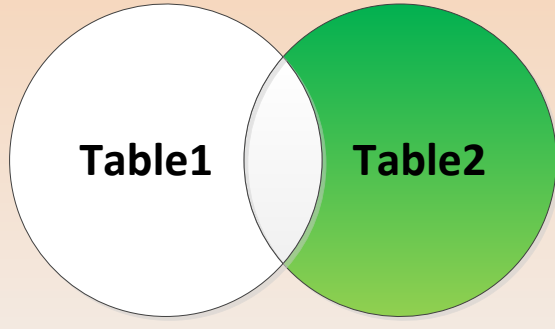
ANTI SEMI JOIN

```
SELECT *
    FROM Table1 t1
    WHERE NOT EXISTS (SELECT 1
                FROM Table2 t2
                WHERE t1.fk = t2.id
                );
```
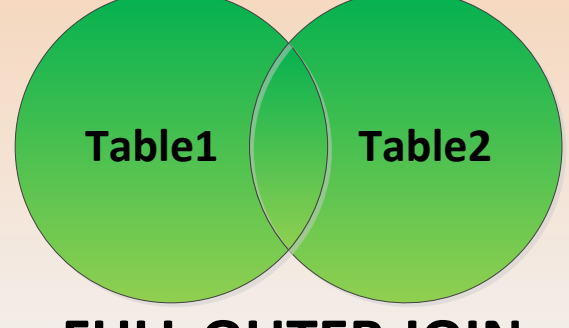
LEFT OUTER JOIN with exclusion – replacement for a NOT IN

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

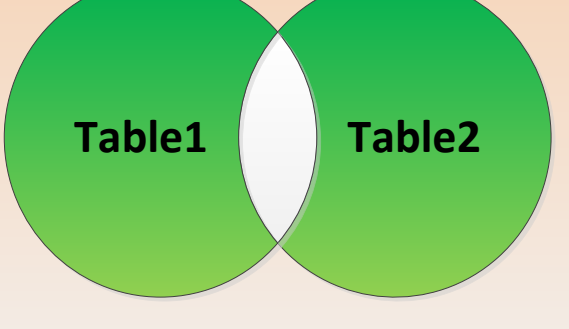**RIGHT OUTER JOIN with exclusion – replacement for a NOT IN**

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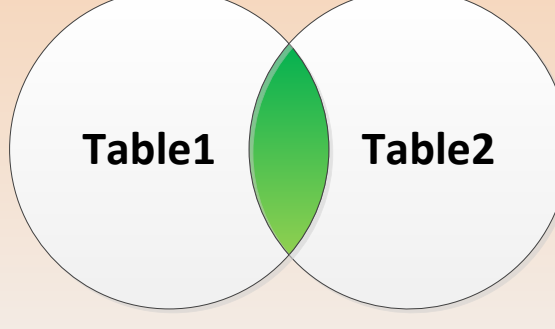
FULL OUTER JOIN

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

CROSS JOIN, the Cartesian product

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

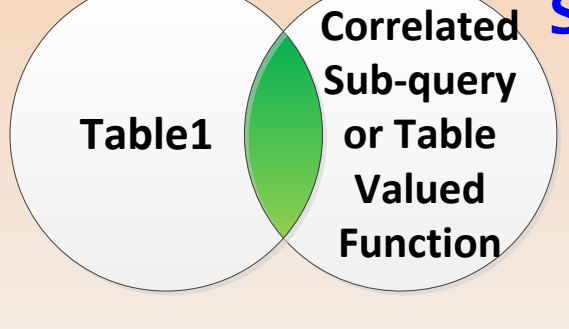**FULL OUTER JOIN with exclusion**

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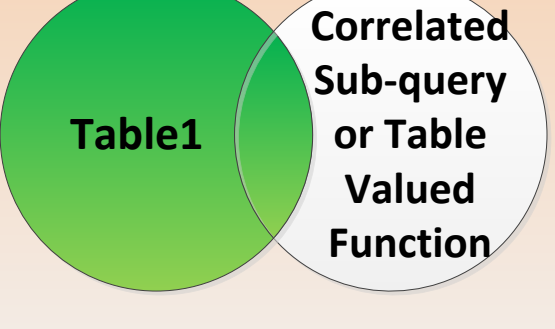```

**NON-EQUI INNER JOIN**

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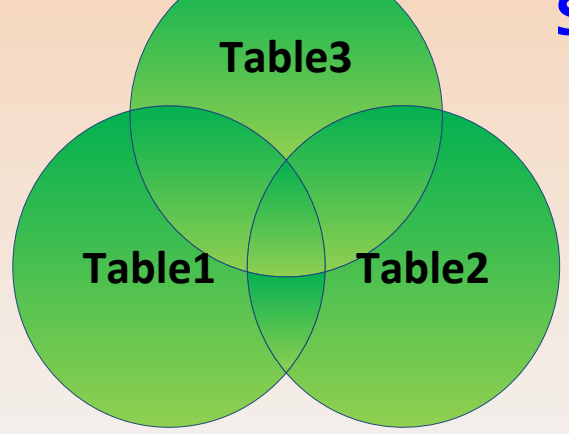
CROSS APPLY

```
SELECT *
    FROM Table1 t1
    CROSS APPLY
        [dbo].[someTVF](t1.fk)
    AS t;
```
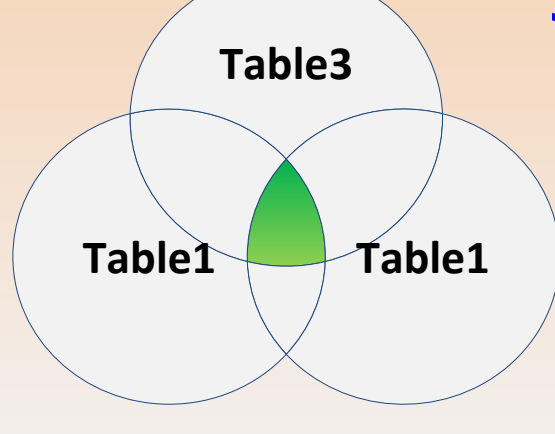
Correlated Sub-query or Table Valued Function

OUTER APPLY

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

Correlated Sub-query or Table Valued Function
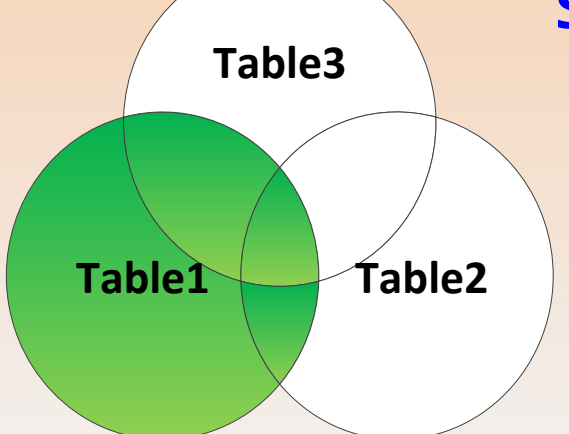
Two FULL OUTER JOINS

```
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;
```
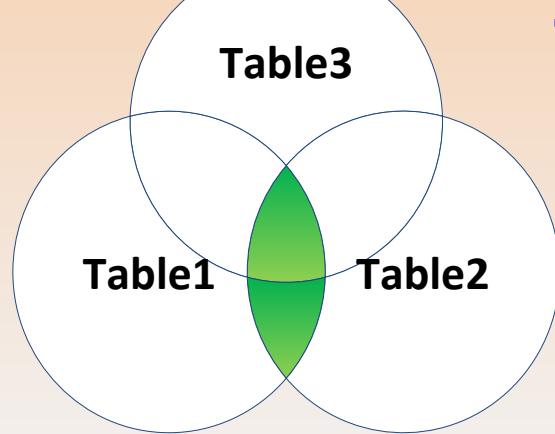
Two INNER JOINs

```
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;
```