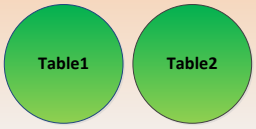
TSQL JOIN TYPES

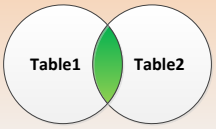
Created by Steve Stedman



SELECT from two tables

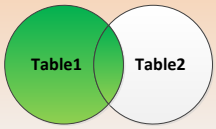
```
SELECT *
  FROM Table1;

SELECT *
  FROM Table2;
```



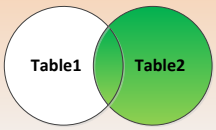
INNER JOIN

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



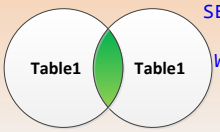
LEFT OUTER JOIN

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



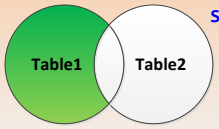
RIGHT OUTER JOIN

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



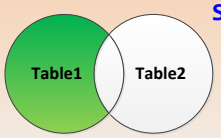
SEMI JOIN

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



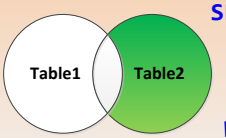
ANTI SEMI JOIN

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



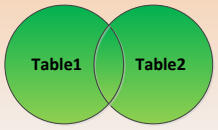
LEFT OUTER JOIN with exclusion
– replacement for a NOT IN

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



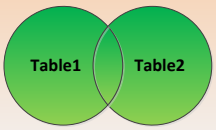
RIGHT OUTER JOIN with exclusion
– replacement for a NOT IN

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



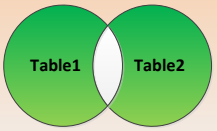
FULL OUTER JOIN

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



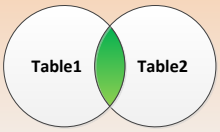
CROSS JOIN, the Cartesian product

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



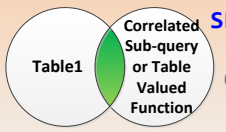
FULL OUTER JOIN with exclusion

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



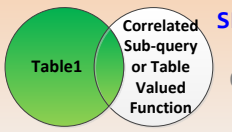
NON-EQUI INNER JOIN

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



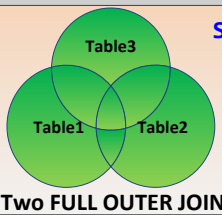
CROSS APPLY

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



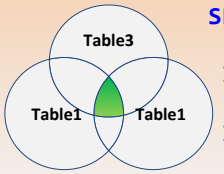
OUTER APPLY

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



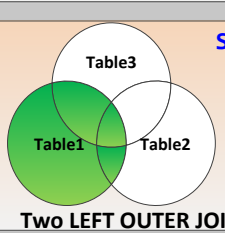
Two FULL OUTER JOINS

```
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;
```



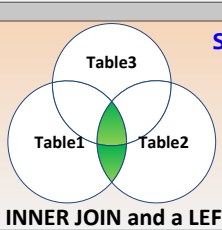
Two INNER JOINs

```
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;
```

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