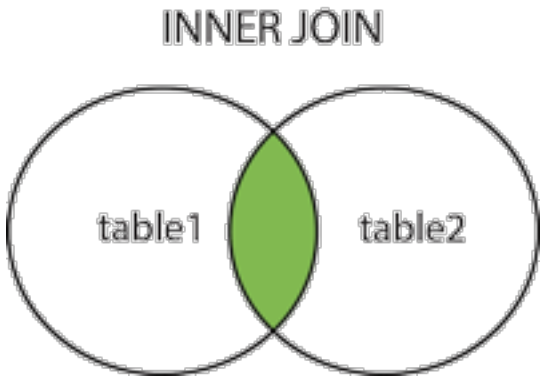
Joins

Inner Join

- **(INNER) JOIN**:
  - Returns records that have matching values in both tables



Cont..

- Syntax:

```
SELECT column_name(s)
FROM table1
INNER JOIN table2 ON table1.column_
name = table2.column_name;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM MANU
INNER JOIN PRODUCTS
ON PRODUCTS.CODE = MANU.CODE;
```

Cont..

How many items does each manufacturer manufactures?

```
SELECT COUNT(*),manufacturer
FROM products as p
INNER JOIN manu m
ON m.code=p.manufacturer
GROUP BY manufacturer;
```

Cont..

Also display name of each manufacturer.

```
SELECT COUNT(*),p.manufacturer,m.name
FROM products as p
inner join manu m
ON m.code=p.manufacturer
GROUP BY manufacturer;
```

Cont..

Display total no of items produced by manufacturer having code less than 4. Also display manufacturer's name.

```
SELECT COUNT(*),p.manufacturer,m.name
FROM products as p
inner join manu m
ON m.code=p.manufacturer
GROUP BY manufacturer having manufacturer < 4;
```

Cont..

Filter the output of previous query to display only those manufacturers who produces more than 2 products.

```
SELECT COUNT(*),p.manufacturer,m.name
FROM products as p
inner join manu m
ON m.code=p.manufacturer
GROUP BY manufacturer having count(manufacturer)
> 2;
```

Cont..

Filter the output of previous query to display only those manufacturers who produces exactly 2 products.

```
SELECT COUNT(*),p.manufacturer,m.name
FROM products as p
inner join manu m
ON m.code=p.manufacturer
GROUP BY manufacturer having count(*) = 2;
```

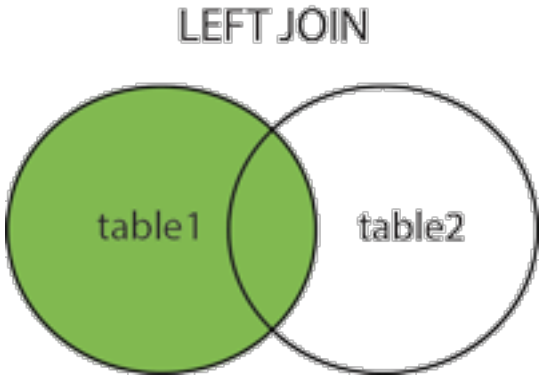
Cont..

Display total no of items produced by manufacturer having code 2 or 3. Also display manufacturer's name.

```
SELECT COUNT(*),p.manufacturer,m.name
FROM products as p
inner join manu m
ON m.code=p.manufacturer
GROUP BY manufacturer having manufacturer in
(2,3);
```

Left Join

- **LEFT (OUTER) JOIN**:
  - Return all records from the left table, and the matched records from the right table



Cont..

- Syntax:

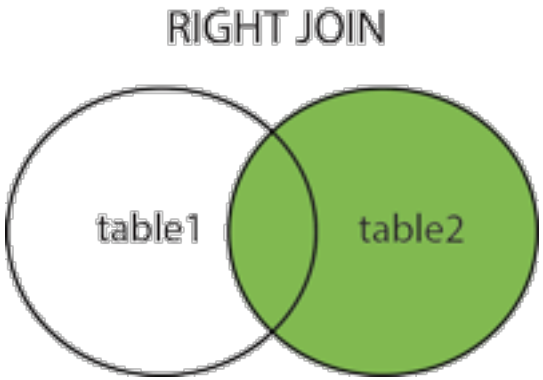
```
SELECT column_name(s)
FROM table1
LEFT JOIN table2 ON table1.column_name =
table2.column_name;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM MANU
LEFT JOIN PRODUCTS
ON PRODUCTS.CODE = MANU.CODE;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM PRODUCTS
LEFT JOIN MANU
ON PRODUCTS.CODE = MANU.CODE;
```

Right (Outer) Join

- **RIGHT (Outer) JOIN**:
  - Return all records from the right table, and the matched records from the left table



Cont..

- Syntax:

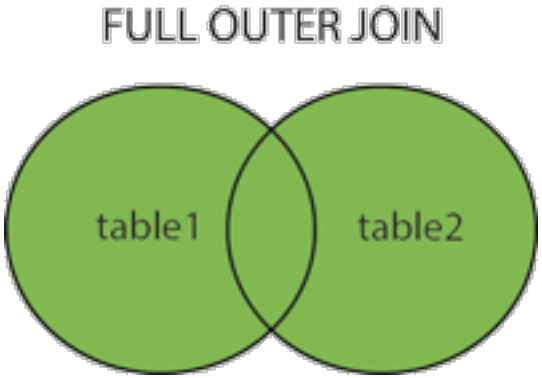
```
SELECT column_name(s)
FROM table1
RIGHT JOIN table2 ON table1.column_name = table2.
column_name;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM MANU
RIGHT JOIN PRODUCTS
ON PRODUCTS.CODE = MANU.CODE;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM PRODUCTS
RIGHT JOIN MANU
ON PRODUCTS.CODE = MANU.CODE;
```

Full (Outer) Join

- **FULL (OUTER) JOIN**:
  - Return all records when there is a match in either left or right table



Cont..

- Syntax:

```
SELECT column_name(s)
FROM table1
FULL OUTER JOIN table2 ON table1.column_name = ta
ble2.column_name;
```

```
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM PRODUCTS
LEFT JOIN MANU
ON PRODUCTS.CODE = MANU.CODE
UNION
SELECT PRODUCTS.CODE, PRODUCTS.NAME, MANU.NAME
FROM PRODUCTS
RIGHT JOIN MANU
ON PRODUCTS.CODE = MANU.CODE;
```

Self Join

- Syntax:

```
SELECT column_name(s)
FROM table1 T1, table1 T2
WHERE condition;
```

```
SELECT P1.CODE, P1.NAME, P2.NAME
FROM Products P1, Products P2
WHERE P1.CODE <> P2.CODE;
```