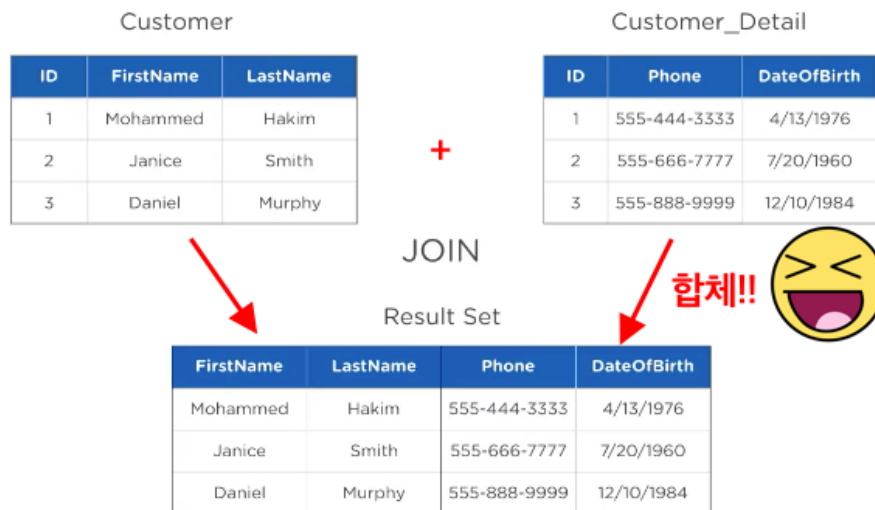# Querying Relational Databases Part 4 Notes

Team Treehouse
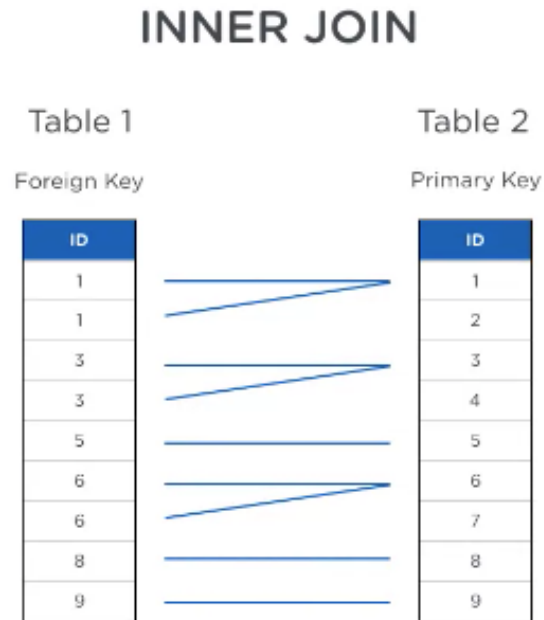
June 7, 2020

1 Join Queries

- Joins two or more tables into one

- Is used in tables with one to one relationship

2   Inner Joins

- Is most common type of JOIN

- Is used for joining one to many relationships

- **Syntax:** SELECT *columns name* FROM *table 1 (many) name* INNER JOIN *table 2 (one) name* ON *table 1 name.column name = table 1 name.column name*;

  - Can join more than 2 tables

Example:
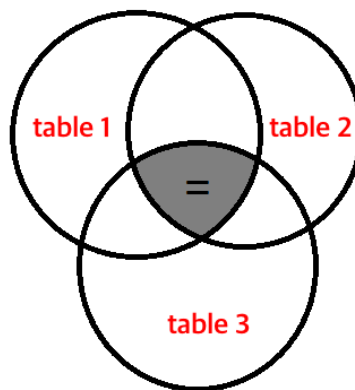
```
1    SELECT mk.MakeName = md.ModelName FROM make AS mk
2    INNER JOIN model AS md ON mk.MakeId = md.MakeId;
3
```

```
1 -- SELECT <columns> FROM <table1>  INNER JOIN <table2> ON <equality criteria>
2 --    WHERE <search criteria> ...
3
4 -- What are all Chevy models?
5
6 SELECT mk.MakeName, md.ModelName FROM make AS mk
7   INNER JOIN model AS md ON mk.MakeID = md.MakeID
8   WHERE MakeName = "Chevy";
```

Reset   Run

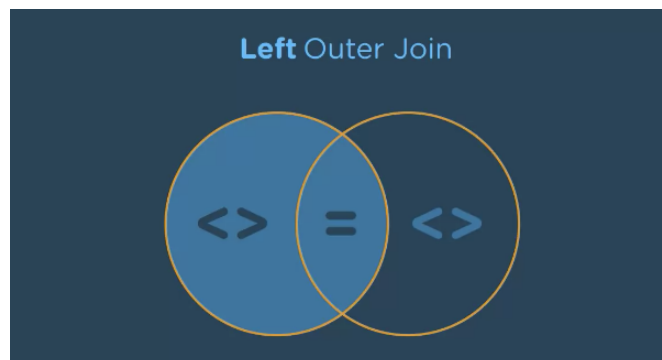| MakeName	ModelName
Chevy	Impala
Chevy	Cruze
Chevy	Colorado

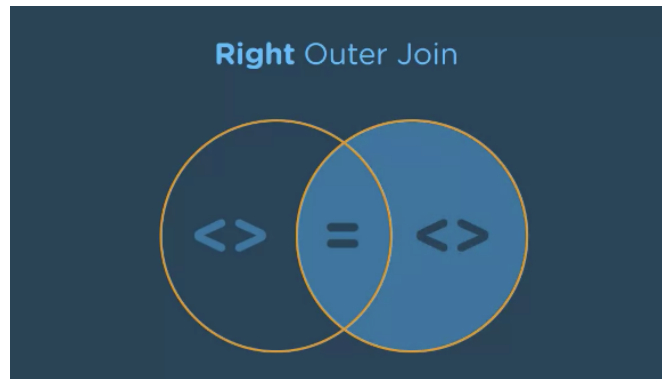- In venn diagram, looks something like this

3   Outer Join

- Is less common than inner join, but highly useful
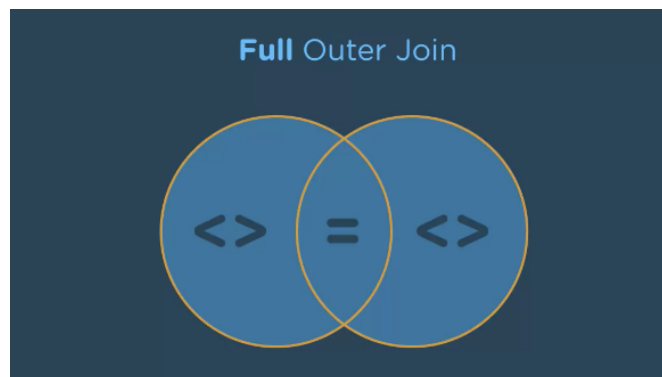- There are three types
  - Left Outer Join

* **Syntax:** SELECT *columns name* FROM *table 1 name* LEFT OUTER JOIN *table name 2* ON *table 1 name.column name* = *table 1 name.column name*;
* joins tables with all columns from table 1 returned

− Right Outer Join

* **Syntax:** SELECT *columns name* FROM *table 1 name* RIGHT OUTER JOIN *table name 2* ON *table 1 name.column name* = *table 1 name.column name*;
* joins tables with all columns from table 2 returned

− Full Outer Join

* **Syntax:** SELECT *columns name* FROM *table 1 name* FULL OUTER JOIN *table name 2* ON *table 1 name.column name* = *table 1 name.column name*;
* joins tables with all columns from both tables returned
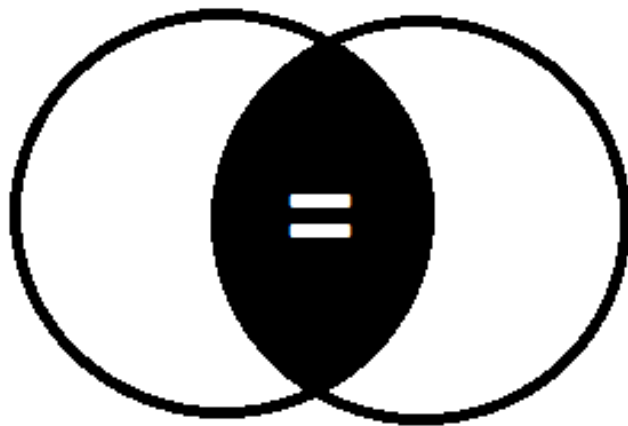
Example:

```
1    SELECT mk.MakeName, md.ModelName FROM make AS mk
2    LEFT OUTER JOIN model AS md ON mk.MakeId = md.MakeId;
3
```

```
1  -- SELECT <columns> FROM <table1>  LEFT OUTER JOIN <table2> ON <equality criteria> WHERE
   <search criteria> ...
2
3  -- How many models of each make are there?
4
5  SELECT mk.MakeName, md.ModelName FROM make AS mk
6    LEFT OUTER JOIN model AS md ON mk.MakeID = md.MakeID;
7
```

Reset   Run

Dodge	Dart
Honda	Accord
Honda	CRV
Honda	Element
Kia	Rio
Kia	Soul
Toyota	Camry
Toyota	Sienna
BMW	

4 Quiz 1

1.

This Venn Diagram represents what kind of JOIN:

A. INNER JOIN

B. FULL JOIN

C. RIGHT OUTER JOIN

D. LEFT OUTER JOIN

Answer: A

2. What is a JOIN?

A. It is how a SQL query combines data from two tables into one result set.

B. It is how a SQL query updates data in a table.

C. It is how an application connects to a database.

D. It is how one database connects to another database.

Answer: A

3. Which is the most common type of JOIN?

A. PIVOT JOIN

B. OUTER JOIN

C. TABULAR JOIN

D. INNER JOIN

Answer: D

4. A left outer join returns all data from the first – or left – table and only the data with matches in the second table.

A. True

B. False

Answer: A

5. Where does the INNER JOIN clause go in a SQL statement?

A. After FROM clause but before WHERE clause

B. After SELECT clause but before FROM clause
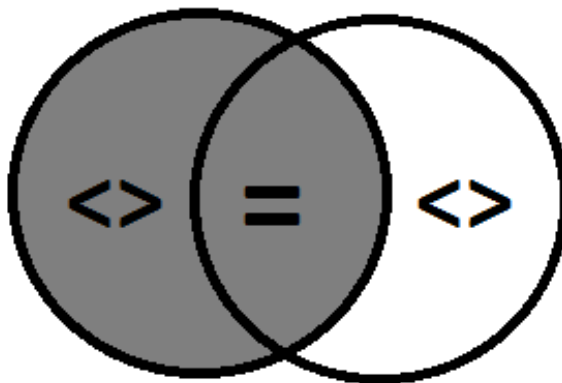
C. After WHERE clause

D. Before SELECT clause

Answer: A

6. Which is the valid SQL statement with JOIN

   A. SELECT
      FROM TableA, TableB
   B. SELECT
      FROM TableA
      INNER JOIN TableB
   C. SELECT
      FROM TableA
      INNER JOIN TableB ON TableA.ColumnID = TableB.ColumnID

   Answer: C

7. This Venn Diagram represents what kind of JOIN:

   A. INNER JOIN
   B. FULL JOIN
   C. RIGHT OUTER JOIN
   D. LEFT OUTER JOIN

   Answer: D

5   Review and Practice

6   Exercise 1

- Solution included in *exercise_1.sql*