

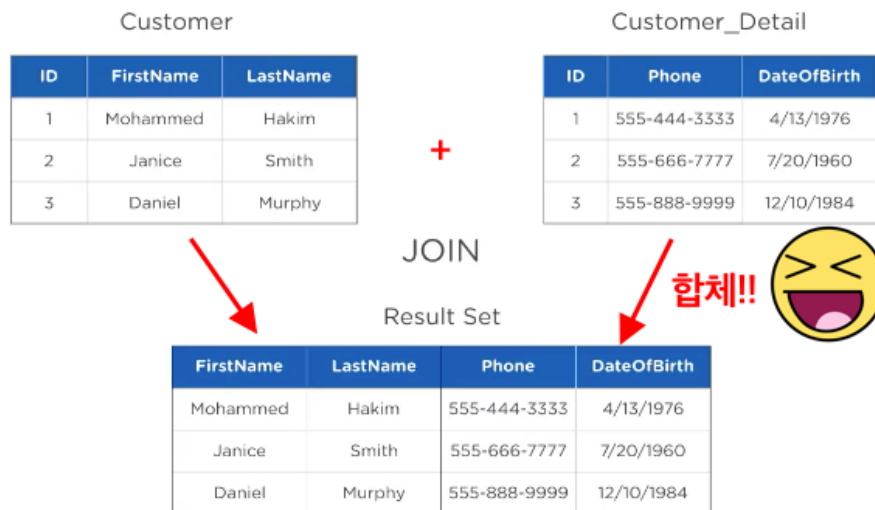
# Querying Relational Databases Part 4 Notes

Team Treehouse

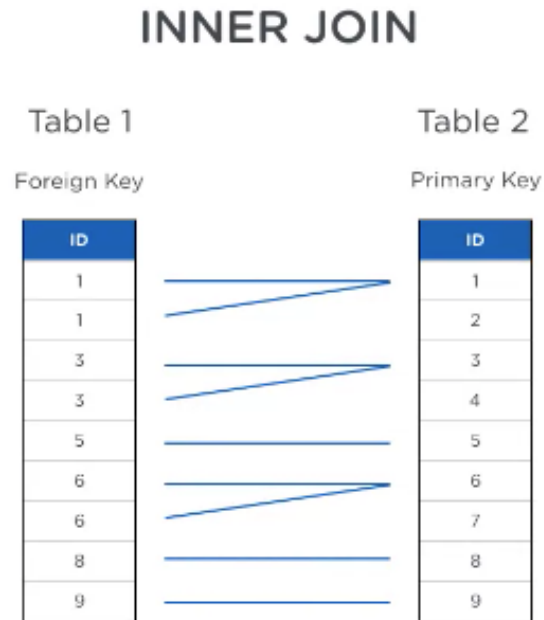
June 7, 2020

## 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 2 name.column name;`
  - Can join more than 2 tables

### Example:

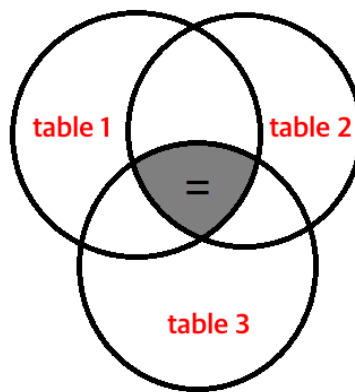
```
1 SELECT mk.MakeName = md.ModelName FROM make AS mk
2 INNER JOIN model AS md ON mk.MakeId = md.MakeId;
3
```

```
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
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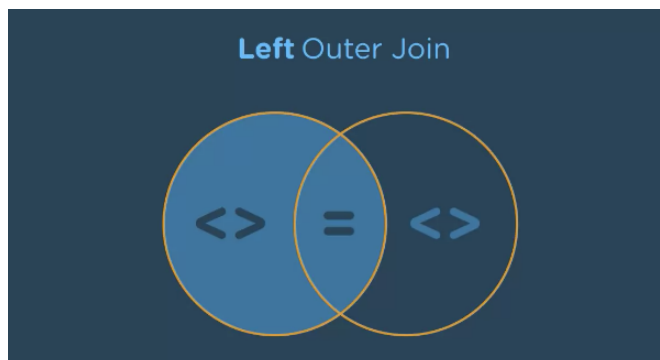
MakeName	ModelName
Chevy	Impala
Chevy	Cruze
Chevy	Colorado

- In venn diagram, looks something like this



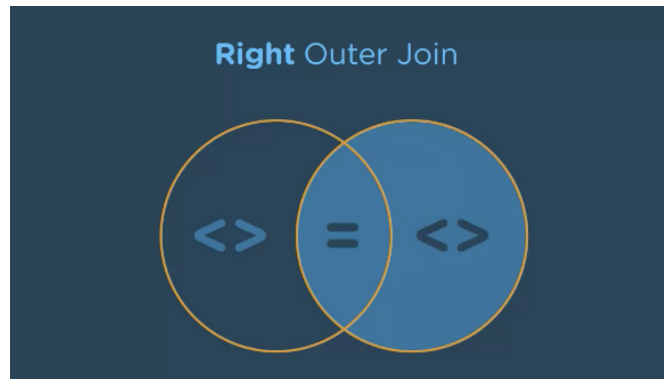
### 3 Outer Join

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



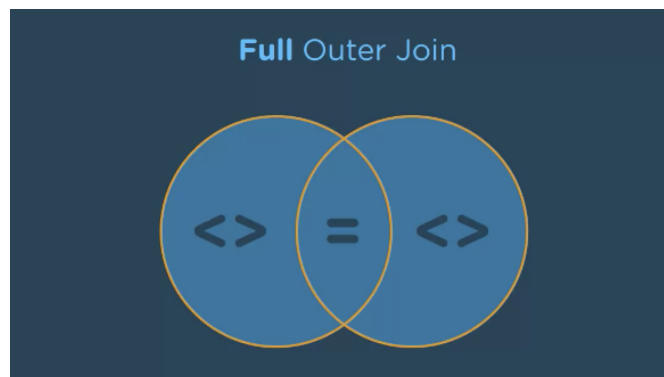
- \* **Syntax:** `SELECT columns name FROM table 1 name LEFT OUTER JOIN table name 2 ON table 1 name.column name = table 1 name.column name;`
- \* joins tables with all columns from table 1 returned

– 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

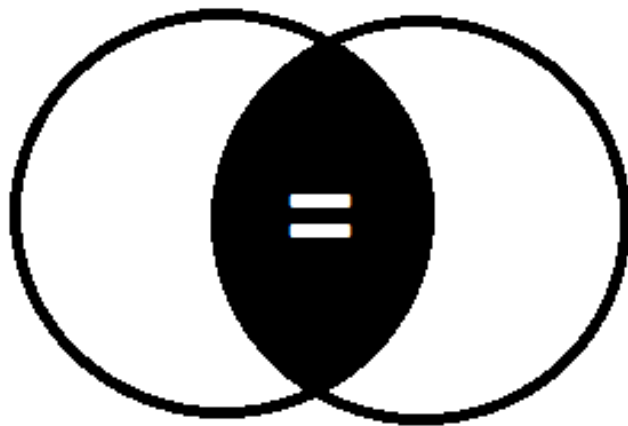
Example:

```
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

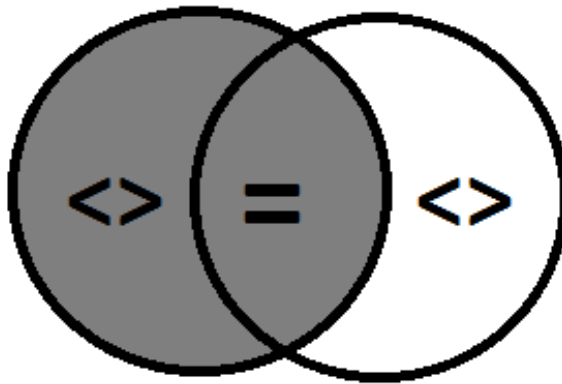
**Answer: A**

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*