

Querying Relational Databases Part 5 Notes

Team Treehouse

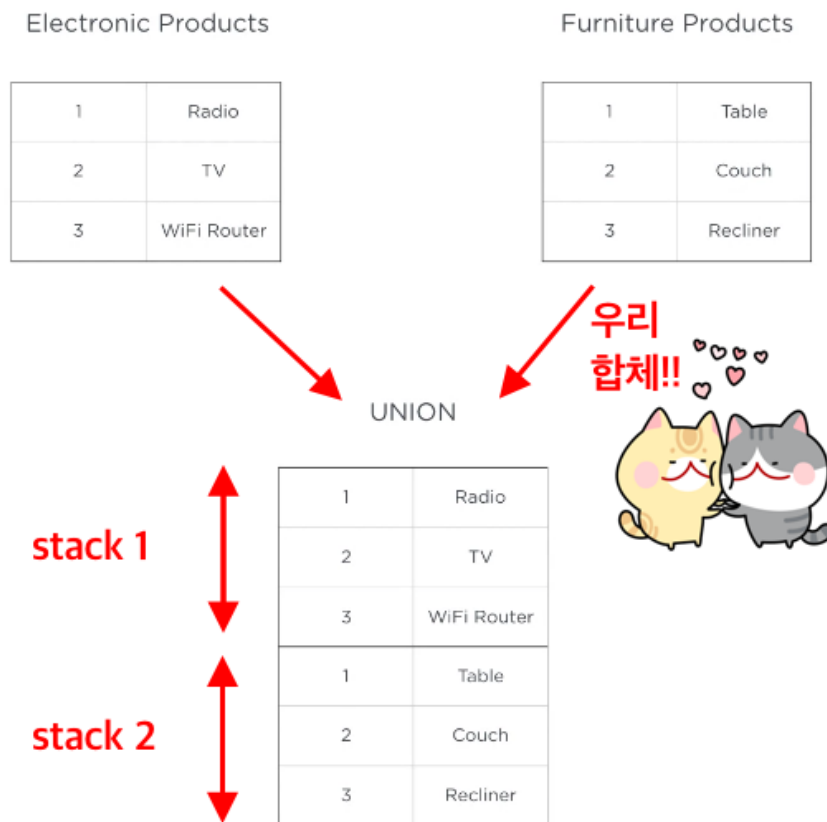
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1 What are Set Operations?

- Combine or limit results using two or more datasets
- has 4 set operations
 - UNION / UNION ALL
 - INTERSET
 - EXCEPT

2 Union Operations

- Stacks data vertically



- has to have matching number of columns
- **Syntax:** *query 1* UNION *query 2*

Example:

```
1  SELECT MakeID, MakeName FROM Make UNION SELECT ForeignMakeID,  
2  MakeName FROM ForeignMake;
```

```
1 -- <Statement 1> UNION <Statement 2>
2
3 -- What are all the domestic and foreign makes?
4
5 SELECT MakeID, MakeName FROM Make UNION SELECT ForeignMakeID, MakeName FROM ForeignMake;
6
```

Reset

Run

MakeID	MakeName
1	BMW
1	Ford
2	Chevy
2	Volkswagen
3	Audi
3	Jeep
4	Dodge
4	Honda
5	Honda

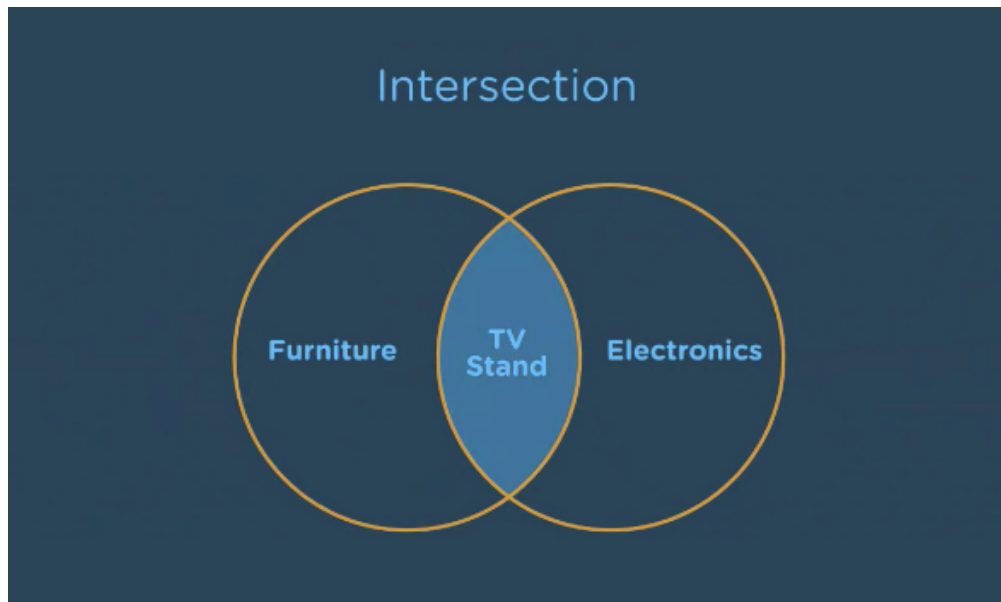
Example 2:

```
1 SELECT MakeID, MakeName FROM Make
2 WHERE MakeName < "D"
3 UNION
4 SELECT ForeignMakeID, MakeName FROM ForeignMake
5 WHERE MakeName < "D"
6 ORDER BY MakeName;
7
```

3 Union All Operations

- Is the same as union but does not eliminate duplicates
- **Syntax:** *query 1* UNION ALL *query 2*

4 Intersect



- Only returns results that exist in both
- Intersection is based on supplied columns
 - multiple columns → intersection is based on intersecting values in those columns
- **Syntax:** *query 1* INTERSECT *query 2*

Example:

```
1 SELECT MakeName FROM Make
2 INTERSECT
3 SELECT MakeName FROM ForeignMake ORDER BY MakeName DESC;
4
```

```
1 -- <Statement 1> INTERSECT <Statement 2>
2
3 -- What are makes that are in both the domestic and foreign makes?
4
5 SELECT MakeName FROM Make INTERSECT SELECT MakeName FROM ForeignMake;
6
```

MakeName
BMW
Honda
Kia
Toyota

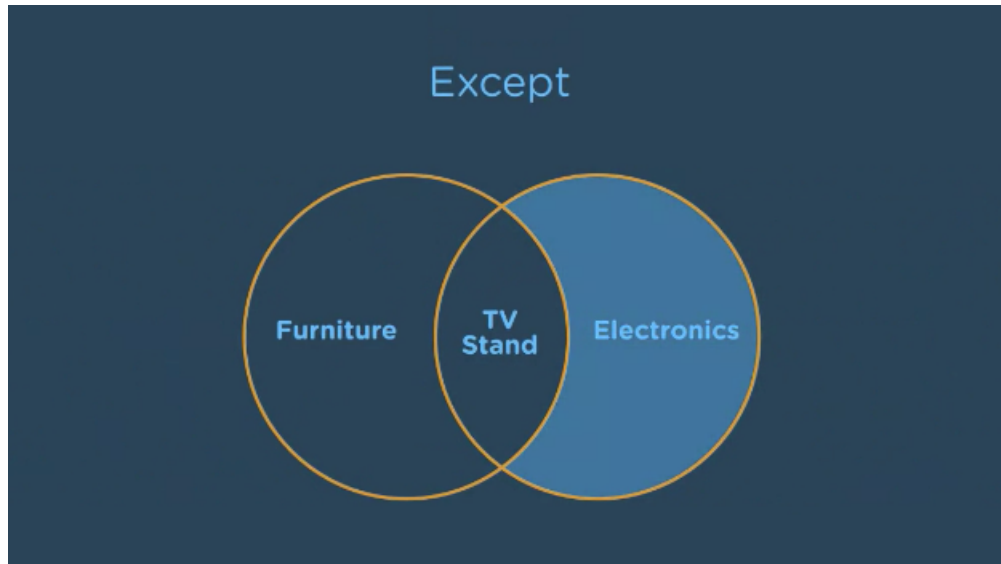
Example 2:

```
1 SELECT MakeID MakeName FROM Make
2 INTERSECT
3 SELECT ForeignMakeID, MakeName FROM ForeignMake ORDER BY MakeName
4 DESC; // <- Returns empty result
```

```
1 -- <Statement 1> INTERSECT <Statement 2>
2
3 -- What are makes that are in both the domestic and foreign makes?
4
5 SELECT MakeID, MakeName FROM Make
6 INTERSECT
7 SELECT ForeignMakeID, MakeName FROM ForeignMake ORDER BY MakeName DESC;
8
```

Query returned no results.

5 Except Operations



- **Syntax:** *Query 1* EXCEPT *Query 2*
- SQL accounts for all columns considered
- Except uses the same format as INTERSET but outputs only the records that are not in the latter table

Example:

```
1  SELECT ForeignMakeID, MakeName FROM ForeignMake EXCEPT SELECT
2  MakeID, MakeName FROM Make; // shows only forien made goods
```

6 Set Operations Reivew

1. Which Set Operation is used to find and return values that exist in two different data sets?
 - A. EXCEPT
 - B. UNION
 - C. INTERSECT
 - D. UNION ALL

Answer: C

2. Which Operator eliminates duplicates while combining multiple data sets into one result set?
- A. EXCEPT
 - B. UNION ALL
 - C. MERGE
 - D. UNION

Answer: D

3. It is valid to have fewer columns in the query that comes after the UNION operation.
- A. True
 - B. False

Answer: B

4. Which of the following is NOT a SQL Set Operation?
- A. UNION
 - B. INTERSECT
 - C. EXCEPT
 - D. CONJOIN

Answer: D

5. Which Set Operation is used to return only the results that are NOT in another table?
- A. UNION ALL
 - B. INTERSECT
 - C. EXCEPT
 - D. UNION

Answer: C

7 Review and Practice

8 Exercise 1

- Solution included in *exercise_1.sql*