

# Building and Organizing Complex Queries: Takeaways



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## Syntax

- Using the WITH clause:

```
WITH track_info AS
(
  SELECT
    t.name,
    ar.name artist,
    al.title album_name,
  FROM track t
  INNER JOIN album al ON al.album_id = t.album_id
  INNER JOIN artist ar ON ar.artist_id = al.artist_id
)
SELECT * FROM track_info
WHERE album_name = "Jagged Little Pill";
```

- Creating a view:

```
CREATE VIEW chinook.customer_2 AS
SELECT * FROM chinook.customer;
```

- Dropping a view

```
DROP VIEW chinook.customer_2;
```

- Selecting rows that occur in one or more SELECT statements:

```
[select_statement_one]
UNION
[select_statement_two];
```

- Selecting rows that occur in both SELECT statements:

```
SELECT * from customer_usa  
  
INTERSECT  
  
SELECT * from customer_gt_90_dollars;
```

- Selecting rows that occur in the first SELECT statement but not the second SELECT statement:

```
SELECT * from customer_usa  
  
EXCEPT  
  
SELECT * from customer_gt_90_dollars;
```

- Chaining WITH statements:

```
WITH  
  
usa AS  
  
    (  
  
        SELECT * FROM customer  
  
        WHERE country = "USA"  
  
    ),  
  
last_name_g AS  
  
    (  
  
        SELECT * FROM usa  
  
        WHERE last_name LIKE "G%"  
  
    ),  
  
state_ca AS  
  
    (  
  
        SELECT * FROM last_name_g  
  
        WHERE state = "CA"  
  
    )  
  
SELECT  
  
    first_name,  
  
    last_name,  
  
    country,  
  
    state  
  
FROM state_ca
```

## Concepts

- A few tips to help make your queries more readable:
  - If a select statement has more than one column: put each selected column on a new line, indented from the select statement.
  - Always capitalize SQL function names and keywords.
  - Put each clause of your query on a new line.
  - Use indenting to make subqueries appear logically separate.
- A `WITH` statement helps a lot when your main query has some slight complexities.
- A view is a permanently defined `WITH` statement that you can use in all future queries.
- Redefining a view requires having to delete or drop the existing view.
- Statements before and after `UNION` clause must have the same number of columns, as well as compatible data types.
- Comparison of `UNION`, `INTERSECT`, and `EXCEPT`:

| Operator               | What it Does   | Python Equivalent    |
|------------------------|--|----------------------|
| <code>UNION</code>     | Selects rows that occur in either statement.   | <code>or</code>      |
| <code>INTERSECT</code> | Selects rows that occur in both statements.  | <code>and</code>     |
| <code>EXCEPT</code>    | Selects rows that occur in the first statement, but don't occur in the second statement. | <code>and not</code> |

## Resources

- [SQL Style Guide](#)
- [Set Operations](#)

