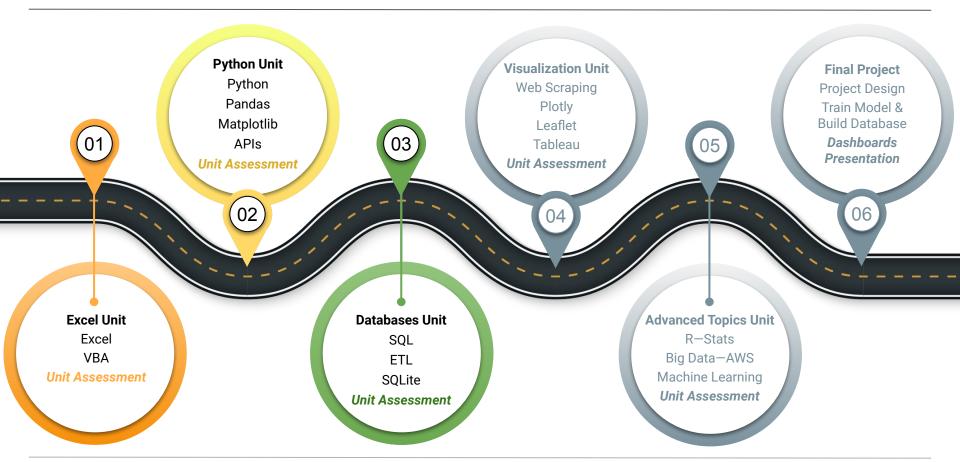


The Big Picture



This Week: SQL

By the end of this week, you'll know how to:



Perform queries using aggregate functions.



Perform complex queries with grouping and ordering.



Perform complex queries using multiple joins and filtering.

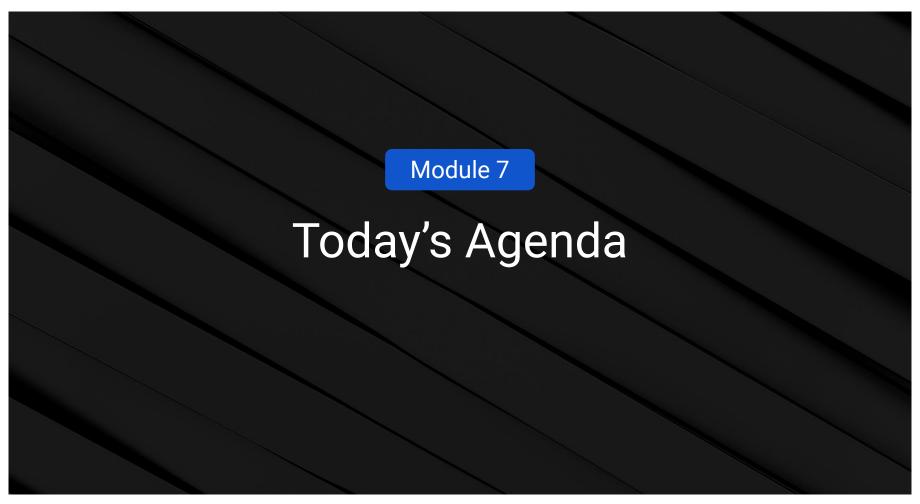


Perform queries to get unique and non-duplicate values.



This Week's Challenge

Using the skills learned throughout the week, create two tables that would help a company determine employee eligibility for a mentorship program.



Today's Agenda

By completing today's activities, you'll learn the following skills:



GROUP BY and ORDER BY



Aggregate Functions



Filtering with Multiple Joins



Make sure you've downloaded any relevant class files!



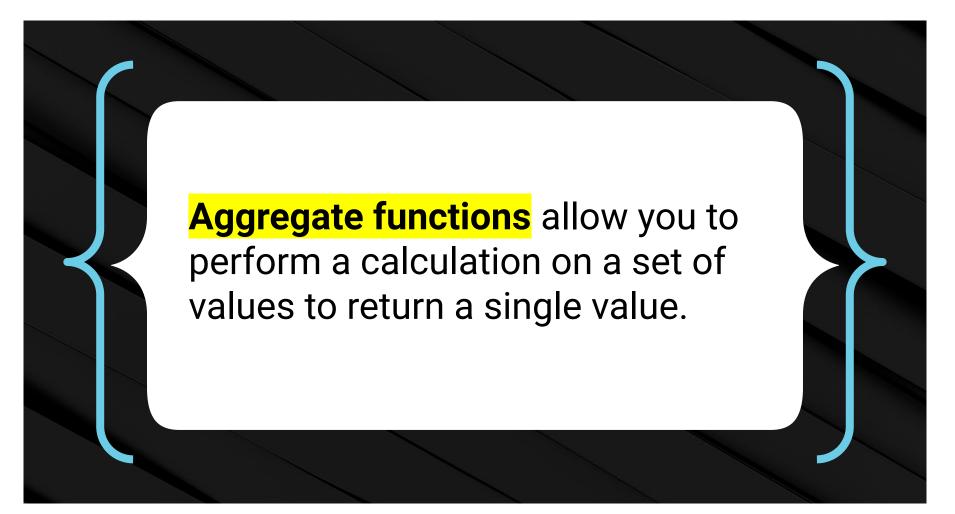


Pagila Database Setup

Suggested Time:

15 minutes

Aggregate Functions, Aliases, and Grouping



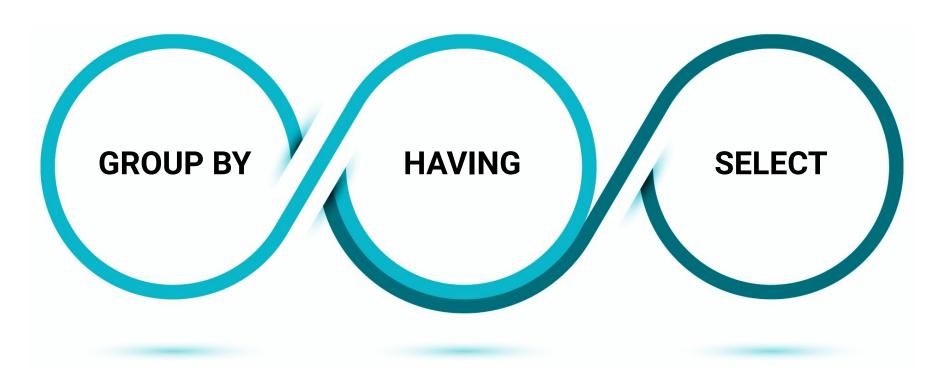
Aggregate Functions, Aliases, and Grouping

The most commonly used aggregate functions are:

AVG	Calculates the average of a set of values.
COUNT	Counts the rows in a specific table or view.
MIN	Returns the minimum value in a set of values.
MAX	Returns the maximum value in a set of values.
SUM	Calculates the sum of a set of values.

Aggregate Functions, Aliases, and Grouping

Aggregate Functions are often used with:





Instructor Demonstration

Aggregate Functions, Aliases, and Grouping





Activity: Gregarious Aggregates

In this activity, you will practice queries with aggregate functions, with grouping, and with using aliases.



Activity: Gregarious Aggregates

Use aggregate functions as you run queries to answer the following questions. You will have to search the internet for some of them. Try to use aliases for more informative column headings.

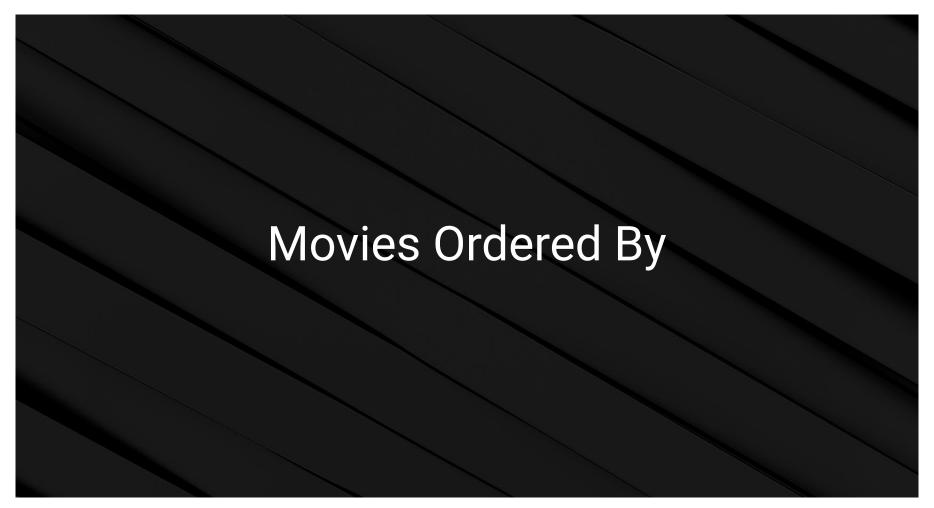
- What is the average cost to rent a film in the stores?
- What is the average rental cost of films by rating?
 On average, what is the cheapest rating of films to rent? What is the most expensive?
- How much would it cost to replace all films in the database?
- How much would it cost to replace all films in each ratings category?
- How long is the longest movie in the database? How long is the shortest movie?



Hint: Consult the Postgres documentation on the "Aggregate Functions" section for a summary of the available functions.



Let's Review



Aggregate functions return the results in a random order.

This can be tough when trying to find the top or bottom numerical results.

The ORDER BY function

Postgres has a clause or statement called ORDER BY that will resolve the random order of the results when using aggregate functions.

When ORDER BY is added at the end of a query, the results will be sorted in ascending order by default.

```
SELECT rental_rate, AVG(length) AS "avg length"

GROUP BY rental_rate

ORDER BY "avg length";
```

The ORDER BY function



Is added towards the end of a query.



It returns in an ascending order by default.



It can also return in a descending order by adding DESC



It can limit the return by adding LIMIT



NOTE: Use the ROUND function to round up the number after the the decimal.



Instructor Demonstration

Order By Aggregates





Activity: Movies Ordered By

In this activity, you will use **ORDER BY** in combination with other SQL methods to query and order the tables.



Activity: Movies Ordered By

Instructions:



Determine the count of actor first name ordered in descending order.



Determine the average rental duration for each rating rounded to two decimals. Order these in ascending order.



Determine the top 10 average replace costs for movies by their length.



BONUS: Using the city and country tables, determine the count of countries in descending order.



The SQL statements covered in this demonstration will help you complete the Employee Database Challenge.







Activity: Distinct Queries

In this activity, you will practice writing queries using DISTINCT ON () with joins and filtering with the WHERE clause.





Let's Review

