
📘 Lesson 2: Understanding the SELECT and FROM Statements in SQL

🎯 What You'll Learn

In this lesson, you'll learn how to:

- Use the `SELECT` statement to retrieve data
- Use the `FROM` statement to specify where the data comes from
- Display all or selected columns
- Work with row limits and distinct values
- Perform basic aggregations like count, max, min, and average
- Reference databases and tables correctly

🗃️ Recap from Last Lesson

Previously, we created two tables:

- **Employee Demographics** – with information like name, age, gender
- **Employee Salary** – with job titles and salaries

Today, we begin querying those tables to explore and understand the data.

🔍 Using SELECT and FROM

The `SELECT` statement tells SQL **what** data you want to see.
The `FROM` statement tells SQL **where** to get that data from (which table).

Examples of what you can do:

- Return all the data from a table
- View just specific columns like first name or last name
- Combine multiple columns in the result

You can also:

- Return only a certain number of rows from the top (helpful when dealing with large datasets)
- See the full structure and sample of your data

🔁 Showing Unique Data with DISTINCT

Sometimes you only want to see **unique** entries in a column.
For example:

- If you use DISTINCT on Employee ID (which is unique), you'll get all rows.
- If you use DISTINCT on Gender, you'll get only "Male" and "Female".

This is useful when you're trying to identify the different categories within a column.

🔢 Counting Records with COUNT

The `COUNT` function helps you find out **how many records** are in a column.

For example:

- Counting how many last names are present

- If any records are missing (NULL), those won't be included in the count

You can even **rename** the resulting column to something readable like "Last Name Count" — this makes your results more understandable.

📊 Getting Summary Stats: MAX, MIN, AVERAGE

Now we move into exploring **summary statistics**:

You can:

- Find the **highest salary** in your dataset
- Find the **lowest salary**
- Calculate the **average salary** of all employees

These basic analytics help in understanding trends and spotting outliers in your data.

🗂️ Making Sure You're Querying the Right Database

Sometimes your SQL editor might show a different database selected at the top (like "master"). But if your data is in another database (like "SQL_Tutorial"), you need to **specify the full path** to the table.

This includes:

- The database name
- The schema (often "dbo")
- The table name

By specifying the full location, you ensure you're querying the correct data — no matter what the current default database is.

📌 Recap

✅ You've learned how to use `SELECT` to retrieve and explore your data
✅ You understand how `FROM` works and why it matters
✅ You've discovered how to limit and filter results for better analysis
✅ You've worked with counting, averaging, and finding highs and lows
✅ You now know how to query specific databases directly

🚀 Coming Up Next…

In the next lesson, we'll explore the **WHERE clause** — a powerful way to filter your data.
After that, we'll dive into `GROUP BY` and `ORDER BY` to group and sort results, rounding out the **core SQL basics**.