**DataCamp PostgreSQL Basics**

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**What is PostgreSQL?**

PostgreSQL is an open-source relational database management system (RDBMS) known for its extensibility and standards compliance. Developed and maintained by a group of volunteers known as The PostgreSQL Global Development Group. It is popular among a wide range of organizations from enterprises to government departments. It has powerful data analysis capabilities.

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**Sample Data**

The dataset contains details of the world's fastest production cars, by 0 to 60 mph acceleration time. Each row contains one car model, and the table is named `cars`.

<table>
<thead>
<tr>
<th>make</th>
<th>model</th>
<th>year</th>
<th>propulsion_type</th>
<th>time_to_60_mph_s</th>
<th>limited_production_count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamborghini</td>
<td>Huracán Performante</td>
<td>2018</td>
<td>ICE</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Ferrari</td>
<td>488 Pista</td>
<td>2020</td>
<td>Hybrid</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>Tesla</td>
<td>Model S Plaid</td>
<td>2021</td>
<td>Electric</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>tesla</td>
<td>Cybertruck</td>
<td>2022</td>
<td>Electric</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Porsche</td>
<td>911 Turbo S</td>
<td>2018</td>
<td>Hybrid</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Bugatti</td>
<td>Chiron</td>
<td>2017</td>
<td>Electric</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Bugatti</td>
<td>Chiron</td>
<td>2017</td>
<td>Electric</td>
<td>1.9</td>
<td></td>
</tr>
</tbody>
</table>

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**Querying tables**

- Get all the columns from a table using `SELECT * FROM table`.
- Get a column from a table by name using `SELECT column_name FROM table`.
- Get multiple columns from a table by name using `SELECT column1, column2 FROM table`.
- Override column names with `SELECT column1 AS new_column_name FROM table`.
- Get multiple columns from a table by name using `SELECT column1, column2 FROM table`.

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**Filtering Data**

**Filtering on numeric columns**

- Get rows where a number is greater than a value with `WHERE column > value`.
- Get rows where a number is greater than or equal to a value with `WHERE column >= value`.
- Get rows where a number is less than a value with `WHERE column < value`.
- Get rows where a number is less than or equal to a value with `WHERE column <= value`.

**Filtering on text columns**

- Get rows where text is equal to a value with `WHERE column = 'value'`.
- Get rows where text is not equal to a value with `WHERE column != 'value'`.
- Get rows where text is in a list of values with `WHERE column IN ('value1', 'value2')`.
- Get rows where text contains a specific character with `WHERE column LIKE 'character'`.

**Filtering on multiple columns**

- Get rows where one condition and another condition holds with `WHERE condition1 AND condition2`.
- Get rows where one condition or another condition holds with `WHERE condition1 OR condition2`.

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**Aggregating Data**

**Simple aggregations**

- Get the total number of rows with `SELECT COUNT(*) FROM table`.
- Get the total value of a column with `SELECT SUM(column) FROM table`.
- Get the mean value of a column with `SELECT AVG(column) FROM table`.
- Get the minimum value of a column with `SELECT MIN(column) FROM table`.
- Get the maximum value of a column with `SELECT MAX(column) FROM table`.

**Grouping, filtering, and sorting**

- Get summaries grouped by values with `GROUP BY column`.

**PostgreSQL-Specific Syntax**

- Not all code works in every dialect of SQL. The following examples work in PostgreSQL but are not guaranteed to work in other dialects.
- Limit the number of rows returned, offset from the top with `LIMIT n OFFSET m`.
- PostgreSQL allows text concatenation with the || operator.
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- Get the current date with `CURRENT_DATE` and the current timestamp with `NOW()` or `CURRENT_TIMESTAMP`.

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