DRILLS

1. Joins

* Types of joins include inner joins (right joins), left joins, full outer joins, cross joins, and natural joins. Postgres Tutorial defines these as:

Inner Join – select rows from one table that has the corresponding rows in other tables.

Left Join – select rows from one table that may or may not have the corresponding rows in other tables.

Full Outer Join – use the full join to find a row in a table that does not have a matching row in another table.

Cross Join – produce a Cartesian product of the rows in two or more tables.

Natural Join – join two or more tables using implicit join condition based on the common column names in the joined tables.

* Which join was used to create the final view?

Join id column from vendor table with the vendor\_id in the yarn table – Left Join

1. Alter\_Update

* Postgres Tutorial defines UPDATE as:
  + UPDATE statement allows you to update data in one or more columns of a table.
  + You can use the RETURNING clause to return the updated rows from the UPDATE statement
* Conversely, ALTER allows you to change the table itself but adding or dropping columns, renaming columns, adding constraints, and changing column data types
  + - Change the name of the column from `department\_id` to `dept\_id`.

*ALTER TABLE table\_name*

*RENAME COLUMN department\_id*

*TO dept\_id;*

* + - *Add a column named `annual\_salary` to the table.*

*ALTER TABLE table\_name*

*ADD COLUMN annual\_salary*

1. DML and DDL

* **DDL:**  
  DDL is Data Definition Language which is used to define data structures. For example: create table, alter table are instructions in SQL.
* **DML:**  
  DML is Data Manipulation Language which is used to manipulate data itself. For example: insert, update, delete are instructions in SQL.
* Demonstrate a use of `DML` in the following table:

Insert into vendor\_table (vendor\_name, vendor\_country)

Values (Dandar Yarn, United States)

1. Duplicates

* You can use group by and order by to help identify duplicates, especially in small tables
* You can use DELETE FROM with a WHERE statement to update your table. Subqueries can also be helpful in deleting duplicates from numerous variables.

*Select*

*Yarn\_name, Count(\*) vendor\_id*

*From*

*Table\_name*

*Groupby*

* As described in Postgres Tutorial—GROUP BY can be used with aggregate functions like SUM, MIN, MAX, COUNT, and AVG to do calculations as you would do in Python. These calculations are part of the SELECT statements.

*SELECT*

*State,*

*AVG (duration)*

*FROM*

*usa\_ufo*

*Group by*

*state*