

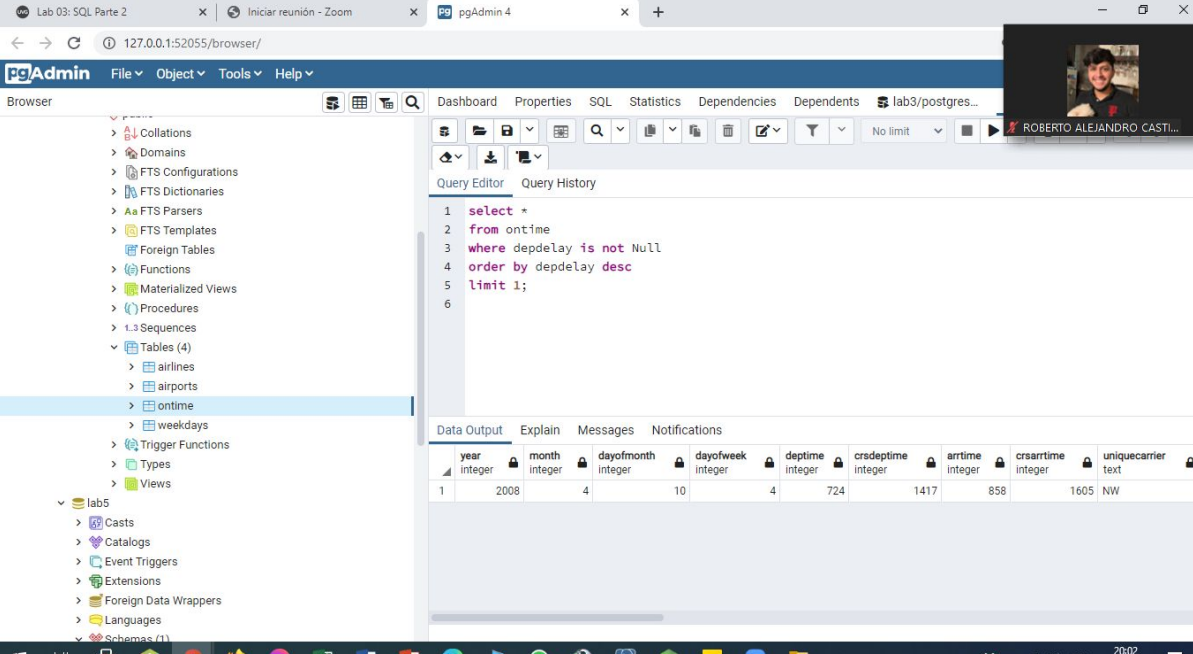
Universidad del Valle de Guatemala  
Roberto Castillo 18546  
Laurelinda Gómez 19501  
27/01/2021

## Ejercicio 1: Uso de JOINS

### Pregunta 1:

¿Cuál es el estado del que salió el vuelo con el mayor retraso en el tiempo de salida registrado? (10 puntos)

Iniciaremos respondiendo a esta pregunta en dos partes. Para comenzar, escriba un query para determinar el aeropuerto del que salió el vuelo con el mayor retraso de salida. En su query muestre el aeropuerto de origen y el retraso en el tiempo de salida.



The screenshot shows the pgAdmin 4 web interface in a browser. The left sidebar displays the database structure, with 'lab5' selected. The 'ontime' table is highlighted under the 'Tables (4)' section. The 'Query Editor' pane contains the following SQL query:

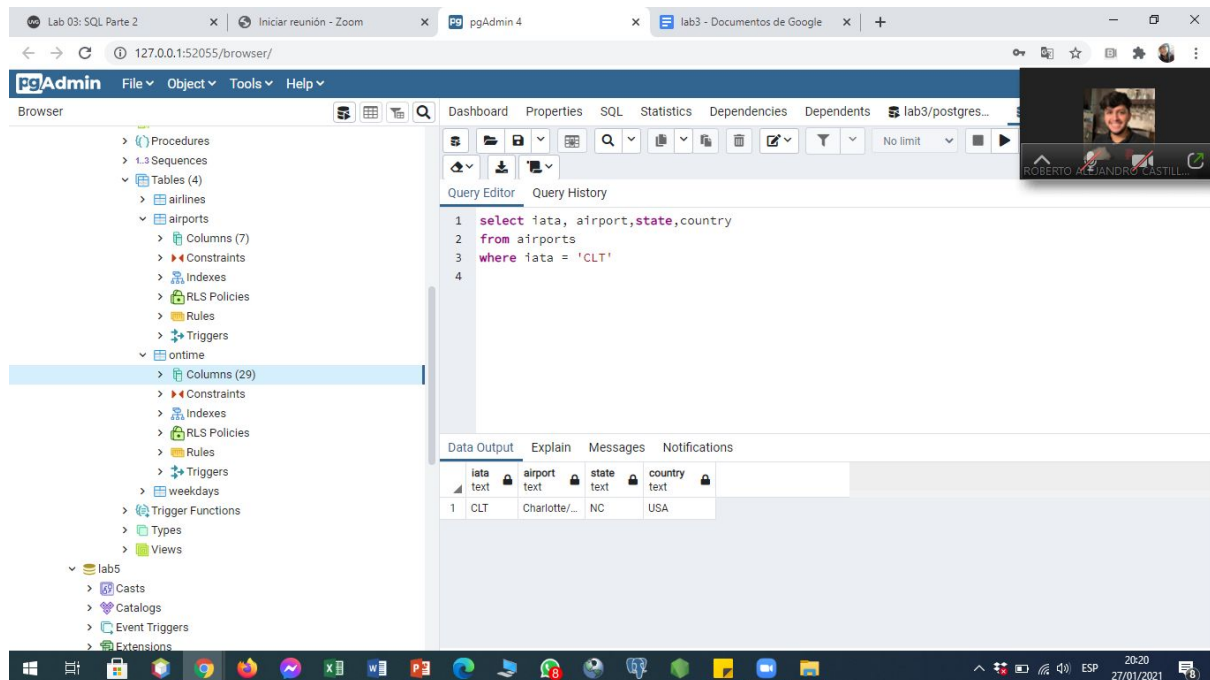
```
1 select *
2 from ontime
3 where depdelay is not Null
4 order by depdelay desc
5 limit 1;
6
```

The 'Data Output' pane shows the result of the query as a table with 11 columns and 1 row:

	year integer	month integer	dayofmonth integer	dayofweek integer	deptime integer	crsdeptime integer	arrtime integer	crsarrtime integer	uniquecarrier text
1	2008	4	10	4	724	1417	858	1605	NW

A Zoom video call window is visible in the top right corner, showing a participant named 'ROBERTO ALEJANDRO CASTI...'.

Escriba una consulta que le indique a qué estado pertenece el aeropuerto cuyo iata es igual al código de aeropuerto determinado anteriormente. Su consulta debe mostrar el código iata, el nombre del aeropuerto, el estado y el país del aeropuerto.



The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, with the 'airports' table selected under the 'airports' schema. The central pane shows the 'Query Editor' with the following SQL query:

```
1 select iata, airport,state, country
2 from airports
3 where iata = 'CLT'
4
```

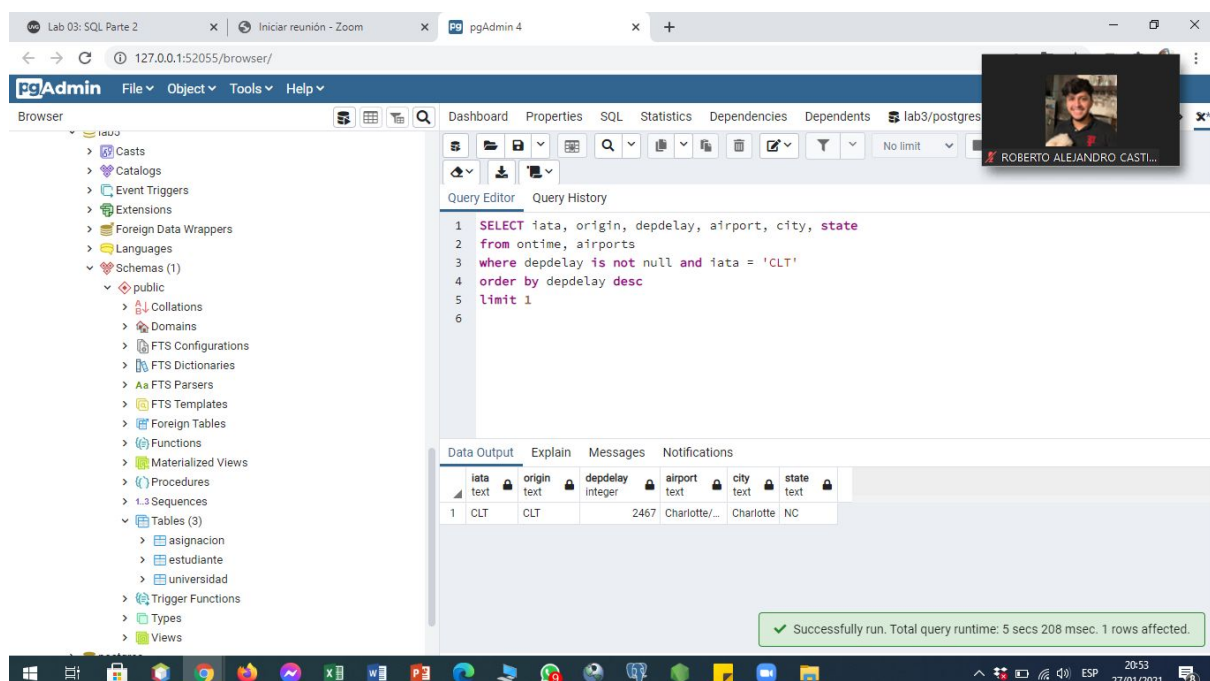
The 'Data Output' tab at the bottom shows the results of the query in a table format:

iata	airport	state	country
CLT	Charlotte/...	NC	USA

A Zoom video call window is visible in the top right corner, showing a participant named ROBERTO ALEJANDRO CASTILLO.

## Pregunta 2:

Responda nuevamente a la pregunta 1 utilizando un solo query que consulte simultáneamente ambas tablas dentro de la cláusula FROM (5 puntos) Su query debe mostrar el tiempo de retraso de salida, el aeropuerto de origen, el código iata del aeropuerto, el nombre del aeropuerto, la ciudad del aeropuerto y el estado del aeropuerto.



The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, with the 'public' schema selected. The central pane shows the 'Query Editor' with the following SQL query:

```
1 SELECT iata, origin, depdelay, airport, city, state
2 from ontime, airports
3 where depdelay is not null and iata = 'CLT'
4 order by depdelay desc
5 limit 1
6
```

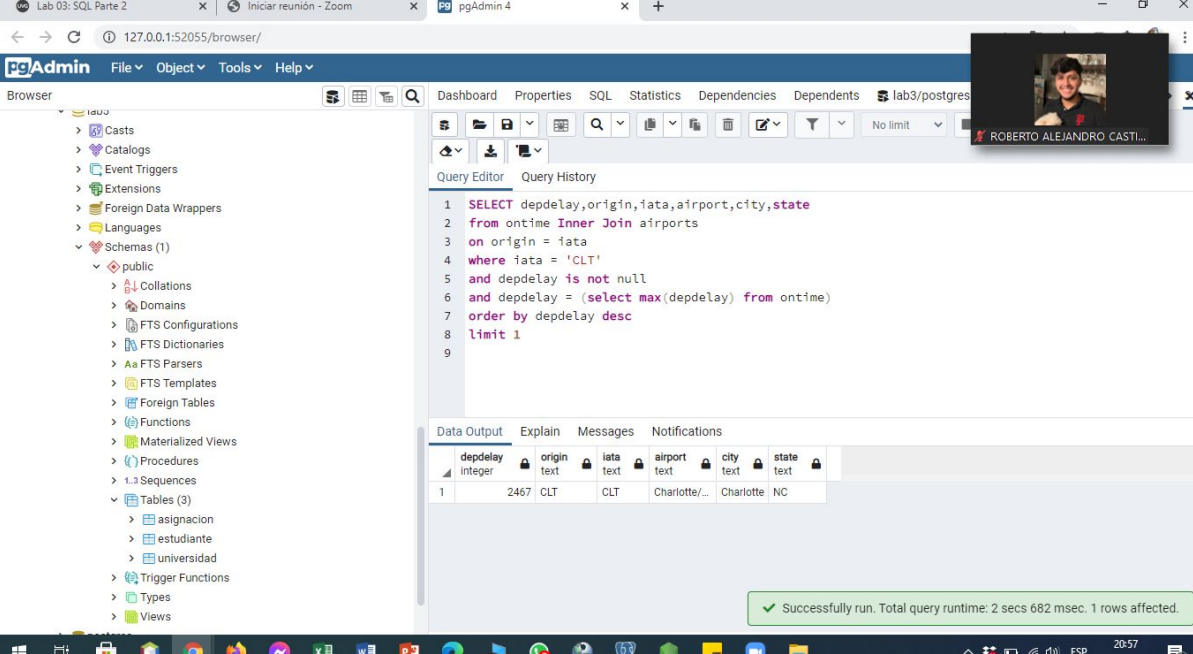
The 'Data Output' tab at the bottom shows the results of the query in a table format:

iata	origin	depdelay	airport	city	state
CLT	CLT	2467	Charlotte/...	Charlotte	NC

A green status bar at the bottom indicates: "Successfully run. Total query runtime: 5 secs 208 msec. 1 rows affected."

### Pregunta 3:

Responda finalmente a la pregunta 1 utilizando un solo query que haga uso de la sintaxis JOIN (5 puntos) En la práctica suele ser más común la construcción JOIN para unir información de dos o más tablas. Puede repasar la sintaxis para JOINS en <http://www.sqlitetutorial.net/sqlite-inner-join/>



The screenshot shows the pgAdmin 4 interface. The Query Editor contains the following SQL query:

```
1 SELECT depdelay, origin, iata, airport, city, state
2 from ontime Inner Join airports
3 on origin = iata
4 where iata = 'CLT'
5 and depdelay is not null
6 and depdelay = (select max(depdelay) from ontime)
7 order by depdelay desc
8 limit 1
9
```

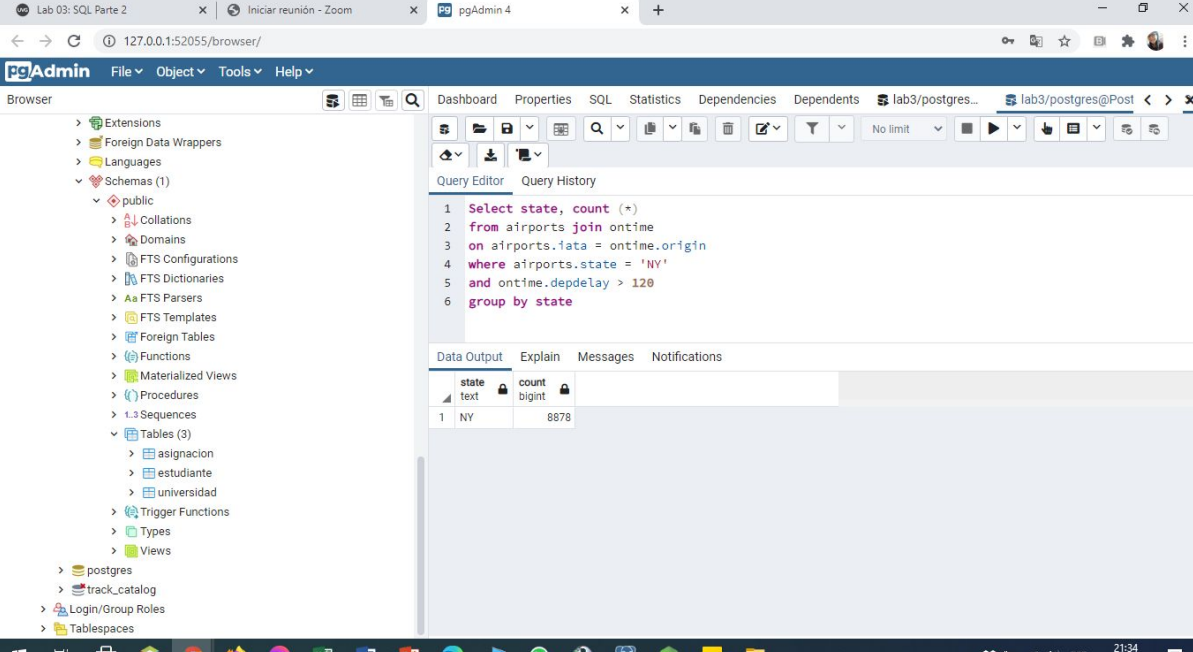
The Data Output tab shows the result of the query:

depdelay	origin	iata	airport	city	state
2467	CLT	CLT	Charlotte...	Charlotte	NC

A green message bar at the bottom indicates: "Successfully run. Total query runtime: 2 secs 682 msec. 1 rows affected."

### Pregunta 4:

¿Cuántos vuelos tuvieron un retraso de salida de más de 120 minutos saliendo del el estado de NY? (10 puntos) Responda a esta pregunta utilizando un solo query. Respuesta: Un total de 8,878 vuelos tuvieron un retraso de más de 120 minutos saliendo del estado de NY



The screenshot shows the pgAdmin 4 interface. The Query Editor contains the following SQL query:

```
1 Select state, count (*)
2 from airports join ontime
3 on airports.iata = ontime.origin
4 where airports.state = 'NY'
5 and ontime.depdelay > 120
6 group by state
```

The Data Output tab shows the result of the query:




state	count
NY	8878

## Ejercicio 2: Queries, JOINS y agregaciones

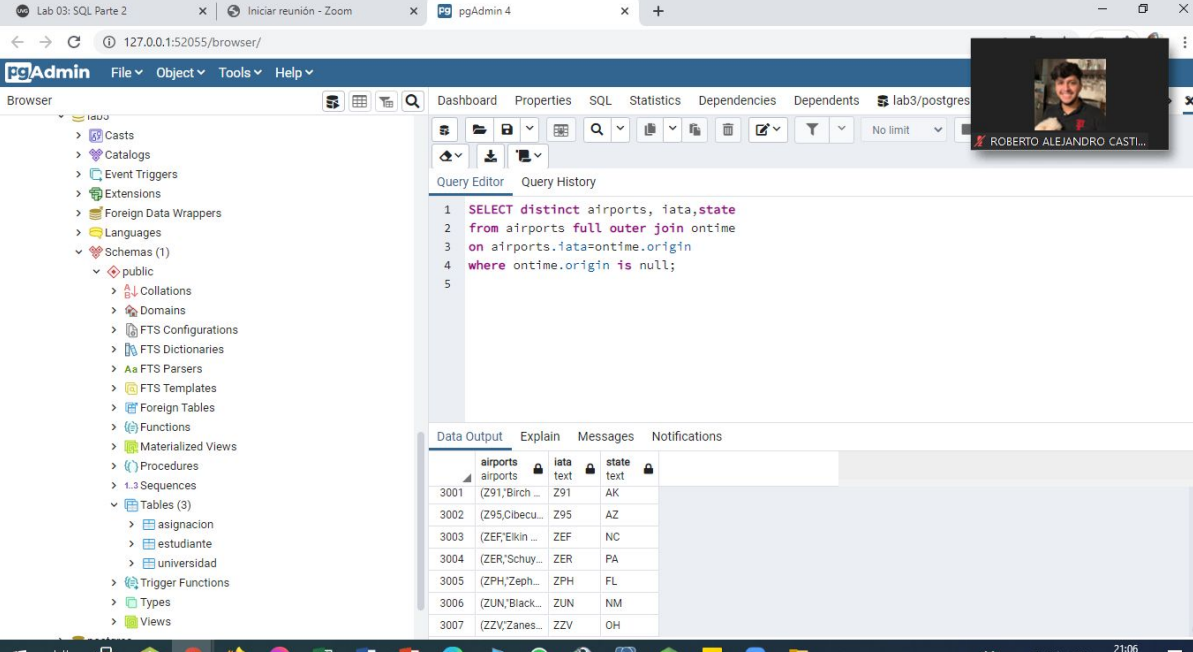
### Pregunta 1:

¿Cuáles son los vuelos más largos y más cortos en distancia registrados en la base de datos?

```
1 select min(distance), max(distance)
2 from ontime
```

Data Output		Explain	Messages	Notifications
	min integer 	max integer 		
1	11	4962		

## Pregunta 2: ¿Qué aeropuertos no han tenido vuelos de salida?



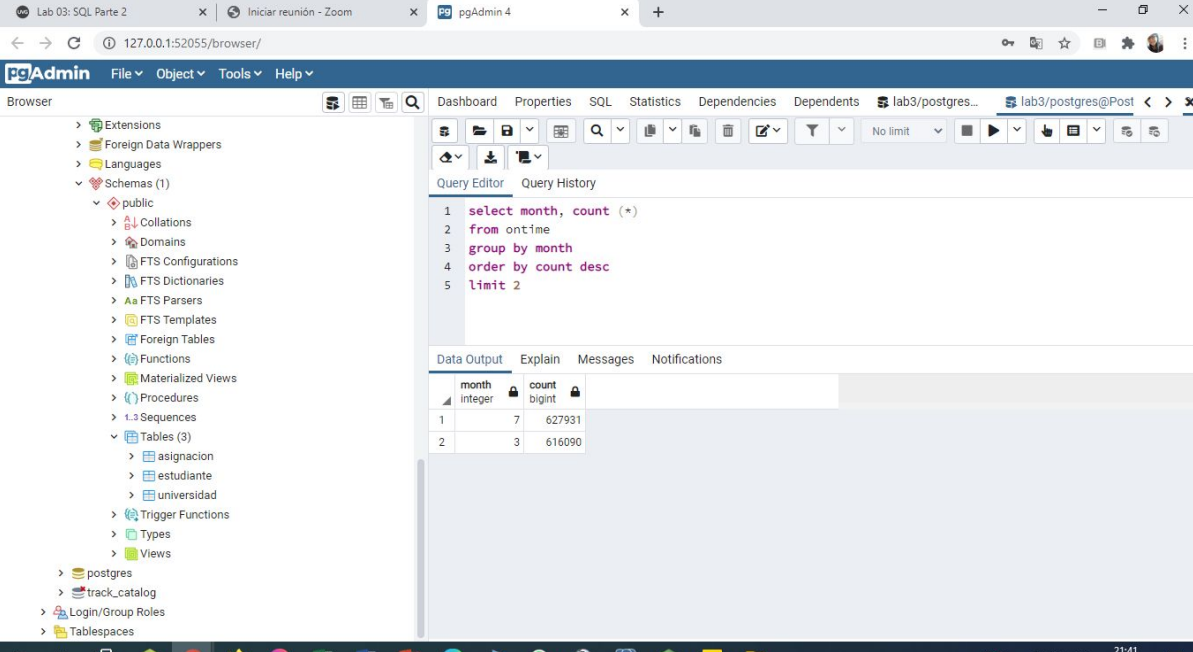
The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including the 'public' schema. The central pane shows a SQL query in the Query Editor:

```
1 SELECT distinct airports, iata,state
2 from airports full outer join ontime
3 on airports.iata=ontime.origin
4 where ontime.origin is null;
5
```

The 'Data Output' tab is active, displaying the results of the query:

airports	iata	state
3001 (Z91;Birch...	Z91	AK
3002 (Z95;Cibecu...	Z95	AZ
3003 (ZEF;Eikin ...	ZEF	NC
3004 (ZER;Schuy...	ZER	PA
3005 (ZPH;Zeph...	ZPH	FL
3006 (ZUN;Black...	ZUN	NM
3007 (ZZV;Zanes...	ZZV	OH

## Pregunta 3: ¿Cuál es la temporada alta?



The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including the 'public' schema. The central pane shows a SQL query in the Query Editor:

```
1 select month, count (*)
2 from ontime
3 group by month
4 order by count desc
5 limit 2
```

The 'Data Output' tab is active, displaying the results of the query:

month	count
1	627931
2	616090

## Pregunta 4: ¿Cuáles son los peores días para viajar? Parte 1 (10 puntos)

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including the 'public' schema and various objects like tables, views, and functions. The main pane shows a SQL query in the Query Editor:

```
1 Select weekdays.DayOfWeek, avg(arrdelay) as promedio_retraso
2 from ontime
3 inner join weekdays on ontime.DayOfWeek = weekdays.DayOfWeek
4 group by weekdays.DayOfWeek
5 order by promedio_retraso desc
```

The 'Data Output' tab shows the results of the query:

dayofweek [PK] integer	promedio_retraso numeric
5	10.9534400796136675
7	9.4958860067752506
4	8.4115991580778086
1	8.2108504948638754
2	7.4812076040366126
3	6.5220173157193497
6	5.7896664104279266

## Pregunta 5: ¿Cuáles son los peores días para viajar? Parte 2

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including the 'public' schema and various objects like tables, views, and functions. The main pane shows a SQL query in the Query Editor:

```
1 select weekday_name, avg(arrdelay)
2 from ontime inner join weekdays on (ontime.dayofweek = weekdays.dayofweek)
3 group by weekday_name
4 order by avg(arrdelay) desc
```

The 'Data Output' tab shows the results of the query:

weekday_name text	avg numeric
Friday	10.9534400796136675
Sunday	9.4958860067752506
Thursday	8.4115991580778086
Monday	8.2108504948638754
Tuesday	7.4812076040366126
Wednesday	6.5220173157193497
Saturday	5.7896664104279266



Pregunta 6: ¿Cuál es el vuelo más común?

1

select dest, origin, count(flightnum)

2

from ontime

3

group by dest, origin

4

order by count(flightnum) desc

5

limit 5

Data Output

Explain

Messages




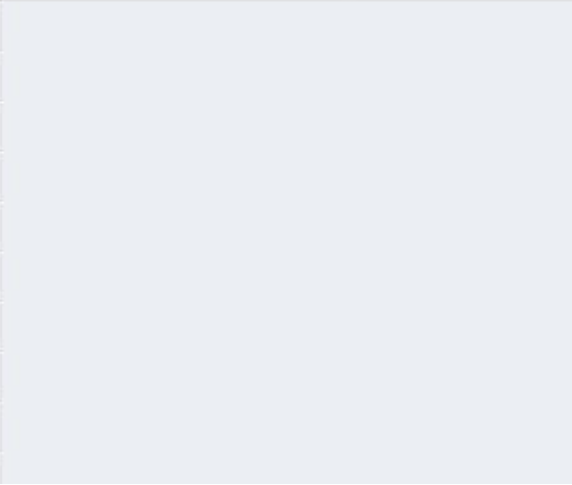
Notifications

	dest text	origin text	count bigint
1	LAX	SFO	13788
2	SFO	LAX	13390
3	HNL	OGG	12383
4	BOS	LGA	12035
5	LGA	BOS	12029

**Pregunta 7: ¿Cuál es el estado con más vuelos internos?**

```
1 select count(ontime.origin) cv_internos, u.state
2 from airports as u join ontime
3 on origin = u.iata
4 join airports n on n.iata = dest
5 where u.state = n.state
6 group by u.state
7 order by cv_internos desc
```

Data Output Explain Messages Notifications

	 cv_internos bigint 	state text 	
1	302086	CA	
2	179412	TX	
3	82225	HI	
4	37055	CO	
5	32091	FL	
6	24449	AK	
7	22722	GA	
8	22665	IL	
9	19993	MI	
10	16598	NY	



**Pregunta 8: ¿Qué aerolíneas se retrasan más de 10 minutos regularmente?**

```
1 select airlinename, avg(arrdelay) as r_avg
2 from ontime join airlines
3 on uniquecarrier = airlinecode
4 group by airlinename
5 having avg(arrdelay) >= 10
6 order by r_avg
```

Data Output Explain Messages Notifications

	airlinename text	r_avg numeric	
1	ExpressJet Airlin...	024157137816	
2	ExpressJet Airlin...	048000352215	
3	Continental Air L...	372802913001	
4	JetBlue Airways	843905181299	
5	United Air Lines ...	221866801833	
6	Mesa Airlines Inc.	814336008094	
7	PSA Airlines Inc.	676839980073	
8	American Airline...	940357139807	