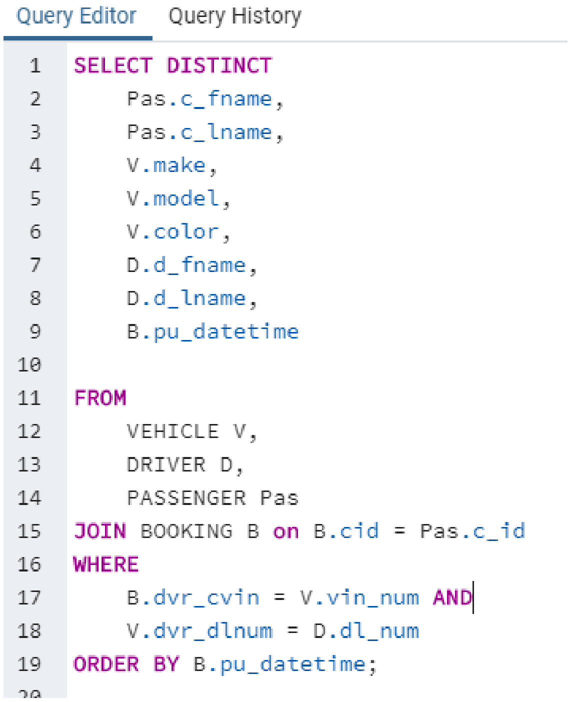
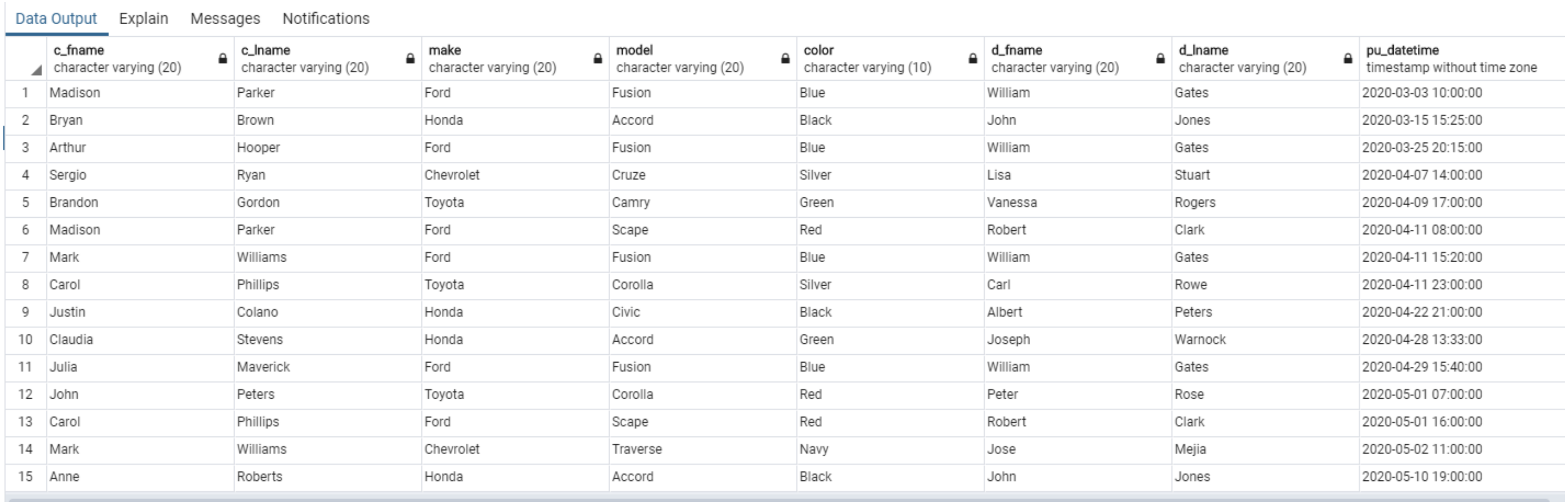
4. Answer the following questions using SQL queries and show the results via postgreSQL (psql or pgAdmin):

a. List the passenger first name and last name, car make, car model, car color, driver name and last name, pickup date and time of the passengers with bookings.



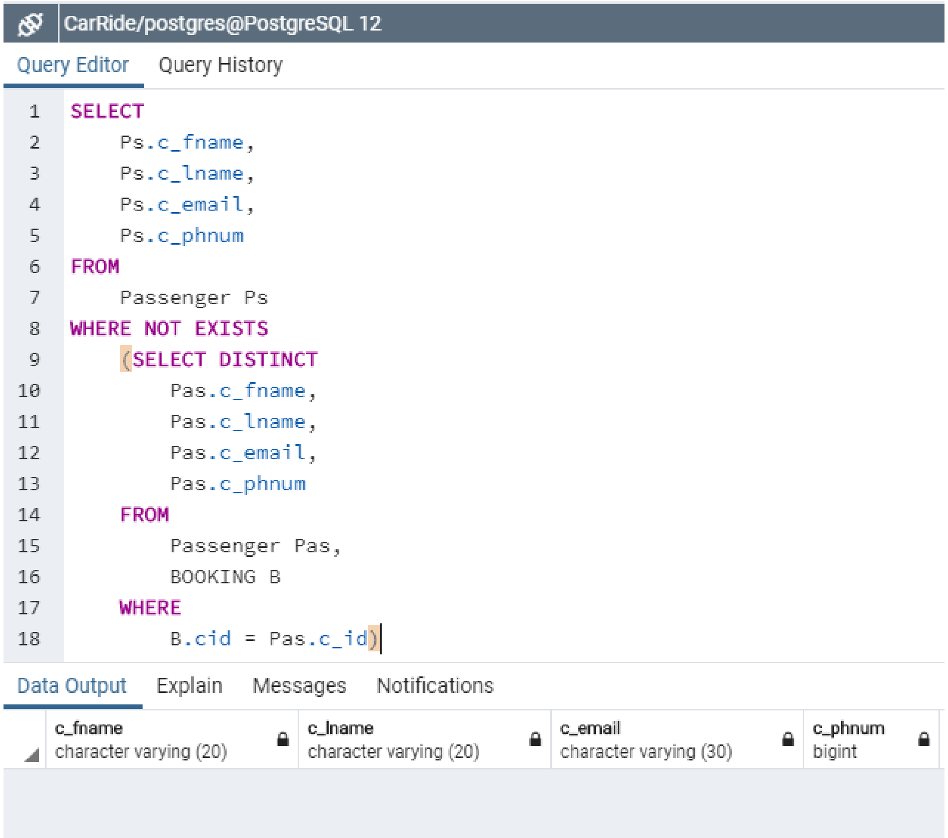
```
SELECT DISTINCT
    Pas.c_fname,
    Pas.c_lname,
    V.make,
    V.model,
    V.color,
    D.d_fname,
    D.d_lname,
    B.pu_datetime

FROM
    VEHICLE V,
    DRIVER D,
    PASSENGER Pas
JOIN BOOKING B on B.cid = Pas.c_id
WHERE
    B.dvr_cvin = V.vin_num AND
    V.dvr_dlnum = D.dl_num
ORDER BY B.pu_datetime;
```



	c_fname character varying (20)	c_lname character varying (20)	make character varying (20)	model character varying (20)	color character varying (10)	d_fname character varying (20)	d_lname character varying (20)	pu_datetime timestamp without time zone
1	Madison	Parker	Ford	Fusion	Blue	William	Gates	2020-03-03 10:00:00
2	Bryan	Brown	Honda	Accord	Black	John	Jones	2020-03-15 15:25:00
3	Arthur	Hooper	Ford	Fusion	Blue	William	Gates	2020-03-25 20:15:00
4	Sergio	Ryan	Chevrolet	Cruze	Silver	Lisa	Stuart	2020-04-07 14:00:00
5	Brandon	Gordon	Toyota	Camry	Green	Vanessa	Rogers	2020-04-09 17:00:00
6	Madison	Parker	Ford	Scape	Red	Robert	Clark	2020-04-11 08:00:00
7	Mark	Williams	Ford	Fusion	Blue	William	Gates	2020-04-11 15:20:00
8	Carol	Phillips	Toyota	Corolla	Silver	Carl	Rowe	2020-04-11 23:00:00
9	Justin	Colano	Honda	Civic	Black	Albert	Peters	2020-04-22 21:00:00
10	Claudia	Stevens	Honda	Accord	Green	Joseph	Warnock	2020-04-28 13:33:00
11	Julia	Maverick	Ford	Fusion	Blue	William	Gates	2020-04-29 15:40:00
12	John	Peters	Toyota	Corolla	Red	Peter	Rose	2020-05-01 07:00:00
13	Carol	Phillips	Ford	Scape	Red	Robert	Clark	2020-05-01 16:00:00
14	Mark	Williams	Chevrolet	Traverse	Navy	Jose	Mejia	2020-05-02 11:00:00
15	Anne	Roberts	Honda	Accord	Black	John	Jones	2020-05-10 19:00:00

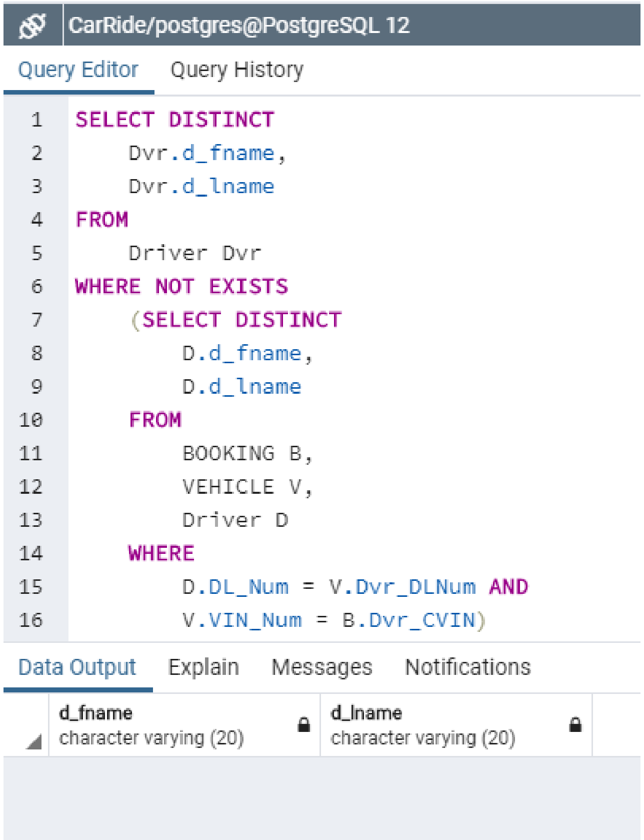
b. List the name and last name, email and cellphone number of passengers that have not used the service yet.



```sql
SELECT
    Ps.c_fname,
    Ps.c_lname,
    Ps.c_email,
    Ps.c_phnum
FROM
    Passenger Ps
WHERE NOT EXISTS
    (SELECT DISTINCT
        Pas.c_fname,
        Pas.c_lname,
        Pas.c_email,
        Pas.c_phnum
    FROM
        Passenger Pas,
        BOOKING B
    WHERE
        B.cid = Pas.c_id)
```

c_fname character varying (20)	c_lname character varying (20)	c_email character varying (30)	c_phnum bigint

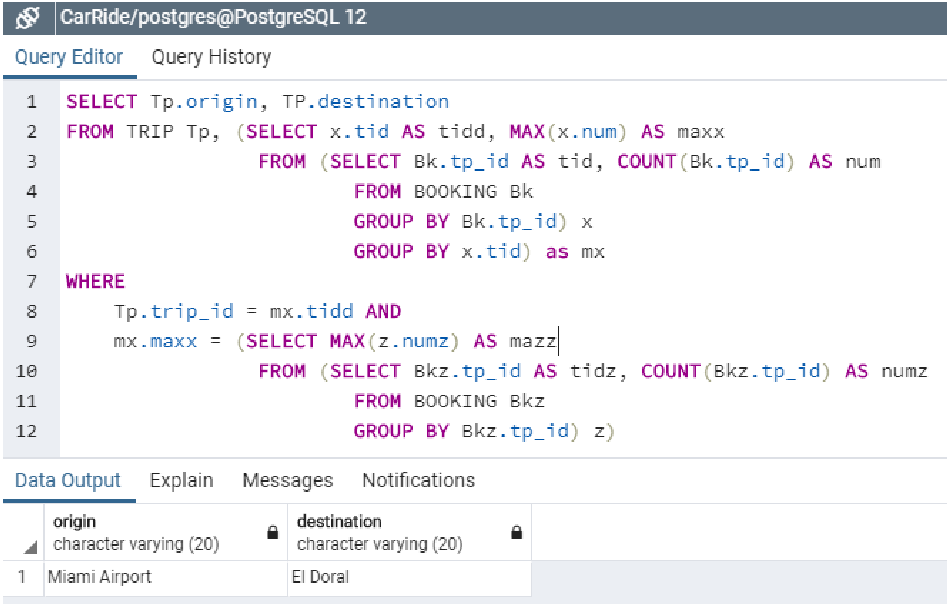
c. List the first name and last name of the drivers that have not worked at all.



```sql
SELECT DISTINCT
    Dvr.d_fname,
    Dvr.d_lname
FROM
    Driver Dvr
WHERE NOT EXISTS
    (SELECT DISTINCT
        D.d_fname,
        D.d_lname
    FROM
        BOOKING B,
        VEHICLE V,
        Driver D
    WHERE
        D.DL_Num = V.Dvr_DLNum AND
        V.VIN_Num = B.Dvr_CVIN)
```

d_fname character varying (20)	d_lname character varying (20)

d. List the origin and destination of the most popular trip.

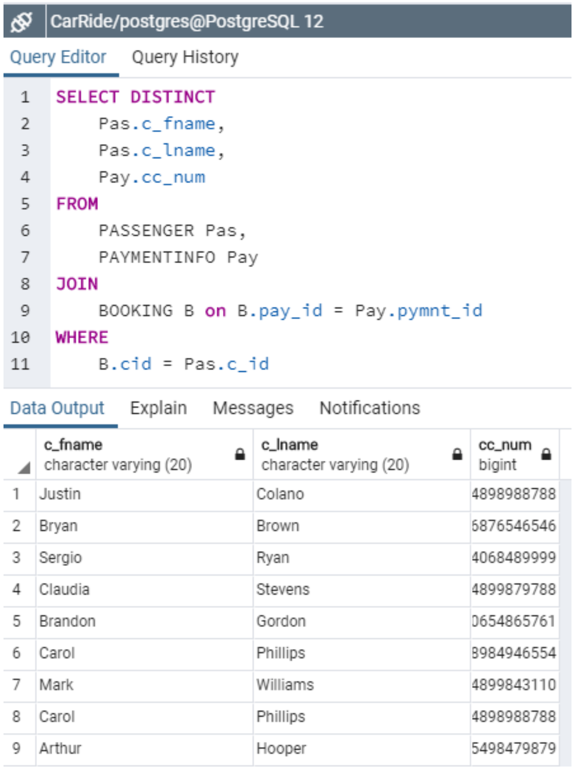


```
SELECT Tp.origin, TP.destination
FROM TRIP Tp, (SELECT x.tid AS tidd, MAX(x.num) AS maxx
                FROM (SELECT Bk.tp_id AS tid, COUNT(Bk.tp_id) AS num
                        FROM BOOKING Bk
                        GROUP BY Bk.tp_id) x
                        GROUP BY x.tid) as mx
WHERE
    Tp.trip_id = mx.tidd AND
    mx.maxx = (SELECT MAX(z.numz) AS mazz
                FROM (SELECT Bkz.tp_id AS tidz, COUNT(Bkz.tp_id) AS numz
                        FROM BOOKING Bkz
                        GROUP BY Bkz.tp_id) z)
```

	origin character varying (20)	destination character varying (20)
1	Miami Airport	El Doral

5. Create 5 queries that will be useful for retrieving data from this database. Specify the queries and get a screenshot of the results.

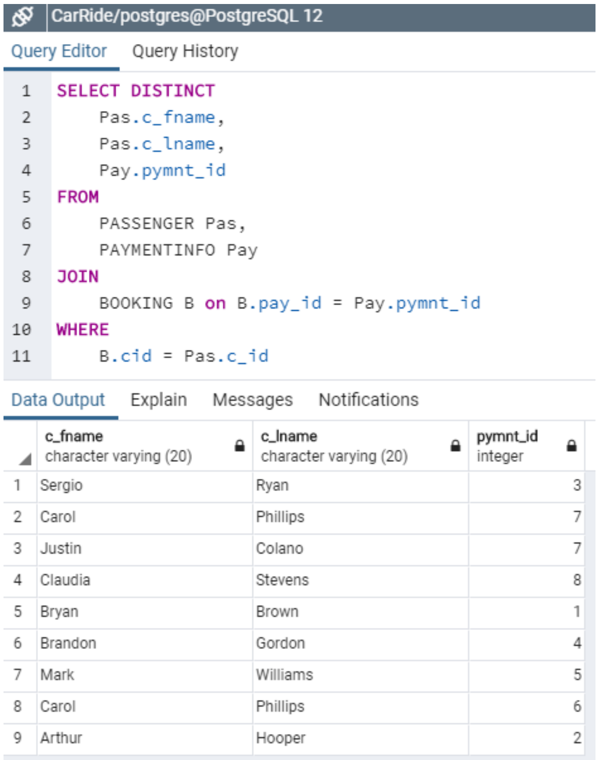
1.)



```
SELECT DISTINCT
    Pas.c_fname,
    Pas.c_lname,
    Pay.cc_num
FROM
    PASSENGER Pas,
    PAYMENTINFO Pay
JOIN
    BOOKING B on B.pay_id = Pay.pymnt_id
WHERE
    B.cid = Pas.c_id
```

	c_fname character varying (20)	c_lname character varying (20)	cc_num bigint
1	Justin	Colano	4898988788
2	Bryan	Brown	6876546546
3	Sergio	Ryan	4068489999
4	Claudia	Stevens	4899879788
5	Brandon	Gordon	0654865761
6	Carol	Phillips	8984946554
7	Mark	Williams	4899843110
8	Carol	Phillips	4898988788
9	Arthur	Hooper	5498479879

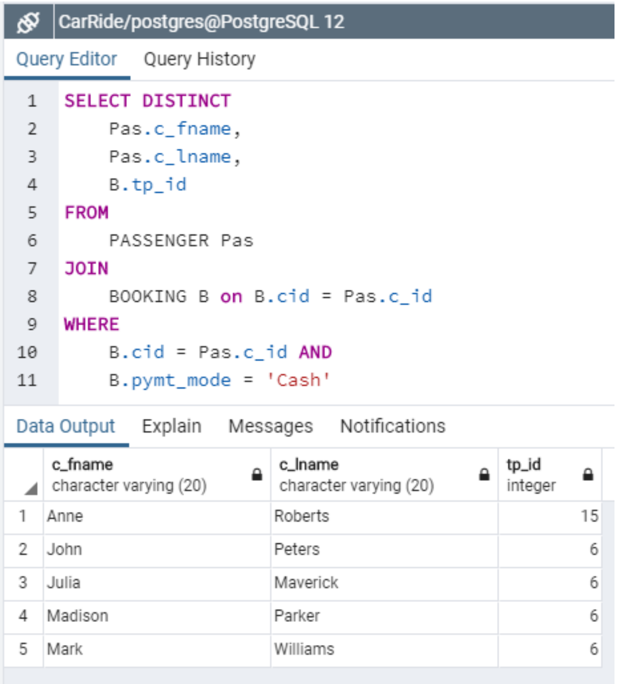
2.)



```
SELECT DISTINCT
    Pas.c_fname,
    Pas.c_lname,
    Pay.pymnt_id
FROM
    PASSENGER Pas,
    PAYMENTINFO Pay
JOIN
    BOOKING B on B.pay_id = Pay.pymnt_id
WHERE
    B.cid = Pas.c_id
```

	c_fname character varying (20)	c_lname character varying (20)	pymnt_id integer
1	Sergio	Ryan	3
2	Carol	Phillips	7
3	Justin	Colano	7
4	Claudia	Stevens	8
5	Bryan	Brown	1
6	Brandon	Gordon	4
7	Mark	Williams	5
8	Carol	Phillips	6
9	Arthur	Hooper	2

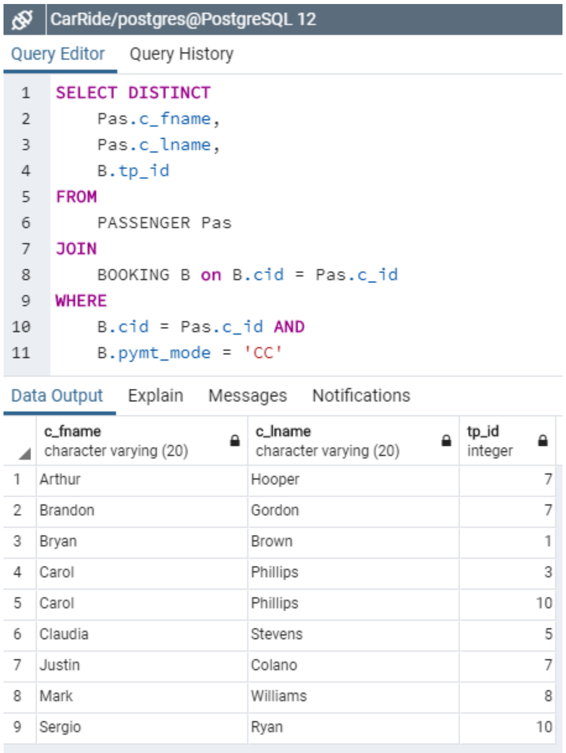
3.)



```
SELECT DISTINCT
    Pas.c_fname,
    Pas.c_lname,
    B.tp_id
FROM
    PASSENGER Pas
JOIN
    BOOKING B on B.cid = Pas.c_id
WHERE
    B.cid = Pas.c_id AND
    B.pymt_mode = 'Cash'
```

	c_fname character varying (20)	c_lname character varying (20)	tp_id integer
1	Anne	Roberts	15
2	John	Peters	6
3	Julia	Maverick	6
4	Madison	Parker	6
5	Mark	Williams	6

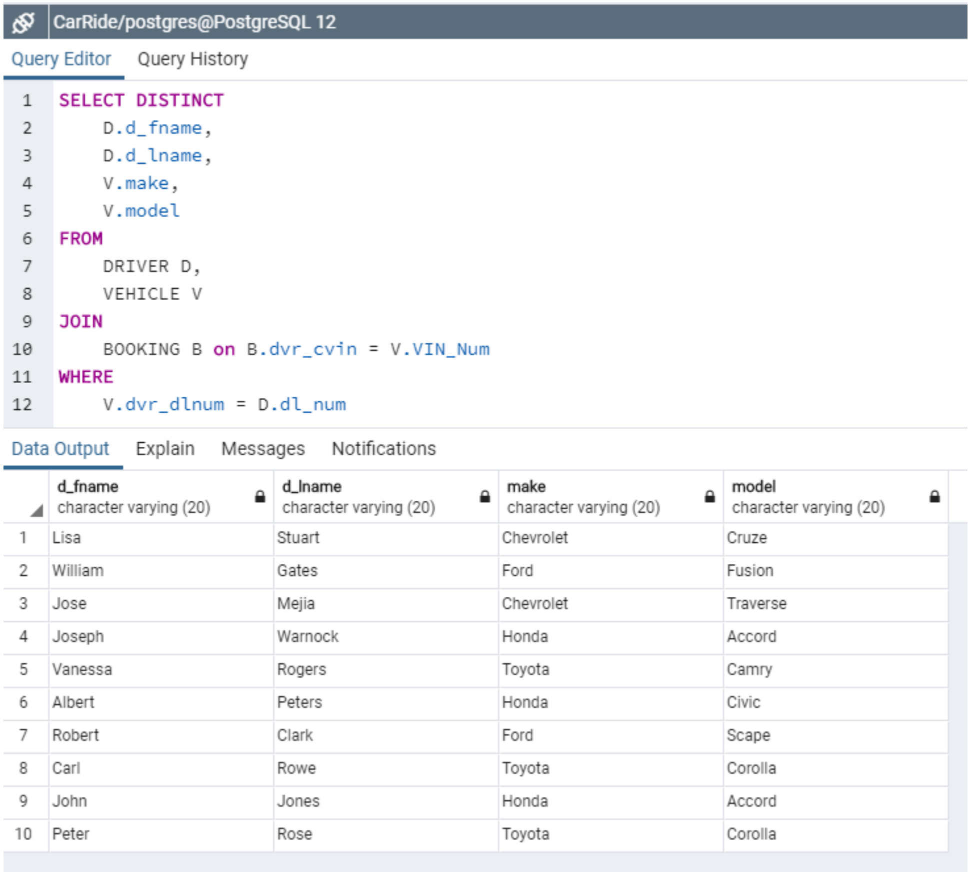
4.)



```sql
SELECT DISTINCT
    Pas.c_fname,
    Pas.c_lname,
    B.tp_id
FROM
    PASSENGER Pas
JOIN
    BOOKING B on B.cid = Pas.c_id
WHERE
    B.cid = Pas.c_id AND
    B.pymt_mode = 'CC'
```

	c_fname character varying (20)	c_lname character varying (20)	tp_id integer
1	Arthur	Hooper	7
2	Brandon	Gordon	7
3	Bryan	Brown	1
4	Carol	Phillips	3
5	Carol	Phillips	10
6	Claudia	Stevens	5
7	Justin	Colano	7
8	Mark	Williams	8
9	Sergio	Ryan	10

5.)



```sql
SELECT DISTINCT
    D.d_fname,
    D.d_lname,
    V.make,
    V.model
FROM
    DRIVER D,
    VEHICLE V
JOIN
    BOOKING B on B.dvr_cvin = V.VIN_Num
WHERE
    V.dvr_dlnum = D.dl_num
```

	d_fname character varying (20)	d_lname character varying (20)	make character varying (20)	model character varying (20)
1	Lisa	Stuart	Chevrolet	Cruze
2	William	Gates	Ford	Fusion
3	Jose	Mejia	Chevrolet	Traverse
4	Joseph	Warnock	Honda	Accord
5	Vanessa	Rogers	Toyota	Camry
6	Albert	Peters	Honda	Civic
7	Robert	Clark	Ford	Scape
8	Carl	Rowe	Toyota	Corolla
9	John	Jones	Honda	Accord
10	Peter	Rose	Toyota	Corolla

6. Other questions:
a. How can you improve the database in order to keep the original price paid per ride in case that the prices of trips change in the future? can optionally implement this.

Include a separate entity for reservations that locks in the price with the customer id and trip id

b. How can you improve the database in order to handle drivers that drive more than one car? You can optionally implement this.

The database could be improved to handle drivers with multiple cars by including a field as a FK in VEHICLES, the PK of DRIVERS