COMPONENT II

```
CREATE TABLE parking_lot (
  car_num VARCHAR(255) NOT NULL,
  parking_space VARCHAR(10) UNIQUE,
  start_time TIMESTAMPTZ NOT NULL,
  end_time TIMESTAMPTZ,
  duration INTEGER NOT NULL,
  amount DECIMAL(10,2) CHECK (amount > 10),
  payment_method VARCHAR(255) NOT NULL,
  FOREIGN KEY (car_num) REFERENCES parking_lot(car_num),
  FOREIGN KEY (parking_space) REFERENCES parking_lot(parking_space)
);


INSERT INTO parking_report (car_num, parking_space, start_time, end_time, duration, amount, payment_method)
VALUES ('ABC123', 'A1', '2022-12-01 10:00:00', '2022-12-01 11:00:00', 60, 50, 'cash'),
      ('DEF456', 'A2', '2022-12-01 11:00:00', '2022-12-01 12:00:00', 60, 50, 'cash'),
      ('GHI789', 'B1', '2022-12-01 12:00:00', '2022-12-01 13:00:00', 60, 50, 'credit'),
      ('JKL012', 'B2', '2022-12-01 13:00:00', '2022-12-01 14:00:00', 60, 50, 'Debit'),
      ('MNO345', 'C1', '2022-12-01 14:00:00', '2022-12-01 15:00:00', 60, 50, 'check');
SELECT * FROM parking_lot;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num [PK] character varying (255)	car_make character varying (255)	car_model character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	parking_count integer
1	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0
2	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0

3	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0
4	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0
5	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0

```
CREATE TABLE car_owners (
 car_num VARCHAR(255) REFERENCES parking_lot(car_num),
 owner_name VARCHAR(255) NOT NULL,
 owner_address VARCHAR(255) NOT NULL,
 owner_phone VARCHAR(20) NOT NULL,
 owner_email VARCHAR(255),
 PRIMARY KEY (car_num)
);


INSERT INTO car_owners (car_num, owner_name, owner_address, owner_phone, owner_email)
VALUES ('ABC123', 'xxx', '123 Main St', '555-555-5555', 'xxx@email.com'),
    ('DEF456', 'yyy', '456 Park Ave', '555-555-5556', 'yyy@email.com'),
    ('GHI789', 'zzz', '789 Elm St', '555-555-5557', 'zzz@email.com'),
    ('JKL012', 'aaa', '321 Oak St', '555-555-5558', 'aaa@email.com'),
    ('MNO345', 'bbb', '654 Pine St', '555-555-5559', 'bbb@email.com');


SELECT * FROM car_owners;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num [PK] character varying (255)	owner_name character varying (255)	owner_address character varying (255)	owner_phone character varying (20)	owner_email character varying (255)
1	ABC123	xxx	123 Main St	555-555-5555	xxx@email.com
2	DEF456	yyy	456 Park Ave	555-555-5556	yyy@email.com
3	GHI789	zzz	789 Elm St	555-555-5557	zzz@email.com
4	JKL012	aaa	321 Oak St	555-555-5558	aaa@email.com
5	MNO345	bbb	654 Pine St	555-555-5559	bbb@email.com

```
CREATE TABLE payments (
```

```
  car_num VARCHAR(255) REFERENCES parking_lot(car_num),
  parking_space VARCHAR(10) REFERENCES parking_lot(parking_space),
  amount DECIMAL(10,2) CHECK (amount > 10),
  payment_method VARCHAR(255) NOT NULL,
  payment_date TIMESTAMPTZ NOT NULL,
  PRIMARY KEY (car_num, parking_space)
);

INSERT INTO payments (car_num, parking_space, amount, payment_method, payment_date)
VALUES ('ABC123', 'A1', 10.00, 'Cash', '2022-12-01 10:30:00'),
      ('DEF456', 'A2', 11.00, 'Cash', '2022-12-01 11:40:00'),
      ('GHI789', 'B1', 15.00, 'Credit', '2022-12-01 12:30:00'),
      ('JKL012', 'B2', 20.00, 'Debit', '2022-12-01 13:30:00'),
      ('MNO345', 'C1', 25.00, 'Check', '2022-12-01 14:30:00');

SELECT * FROM payments;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num [PK] character varying (255)	parking_space [PK] character varying (10)	amount numeric (10,2)	payment_method character varying (255)	payment_date timestamp with time zone
1	ABC123	A1	10.00	Cash	2022-12-01 10:30:00+05:30
2	DEF456	A2	11.00	Cash	2022-12-01 11:40:00+05:30
3	GHI789	B1	15.00	Credit	2022-12-01 12:30:00+05:30
4	JKL012	B2	20.00	Debit	2022-12-01 13:30:00+05:30
5	MNO345	C1	25.00	Check	2022-12-01 14:30:00+05:30

```
CREATE TABLE parking_report (
  car_num VARCHAR(255) NOT NULL,
  parking_space VARCHAR(10) UNIQUE,
  start_time TIMESTAMPTZ NOT NULL,
```

```
  end_time TIMESTAMPTZ,
  duration INTEGER NOT NULL,
  amount DECIMAL(10,2) CHECK (amount > 10),
  payment_method VARCHAR(255) NOT NULL,
  FOREIGN KEY (car_num) REFERENCES parking_lot(car_num),
  FOREIGN KEY (parking_space) REFERENCES parking_lot(parking_space)
);

INSERT INTO parking_report (car_num, parking_space, start_time, end_time, duration, amount, payment_method)
VALUES ('ABC123', 'A1', '2022-12-01 10:00:00', '2022-12-01 11:00:00', 60, 50, 'cash'),
    ('DEF456', 'A2', '2022-12-01 11:00:00', '2022-12-01 12:00:00', 60, 50, 'cash'),
    ('GHI789', 'B1', '2022-12-01 12:00:00', '2022-12-01 13:00:00', 60, 50, 'credit'),
    ('JKL012', 'B2', '2022-12-01 13:00:00', '2022-12-01 14:00:00', 60, 50, 'Debit'),
    ('MNO345', 'C1', '2022-12-01 14:00:00', '2022-12-01 15:00:00', 60, 50, 'check');

SELECT * FROM parking_report;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	parking_space character varying (10)	start_time timestamp with time zone	end_time timestamp with time zone	duration integer	amount numeric (10,2)	payment_method character varying (255)
1	ABC123	A1	2022-12-01 10:00:00+05:30	2022-12-01 11:00:00+05:30	60	50.00	cash
2	DEF456	A2	2022-12-01 11:00:00+05:30	2022-12-01 12:00:00+05:30	60	50.00	cash
3	GHI789	B1	2022-12-01 12:00:00+05:30	2022-12-01 13:00:00+05:30	60	50.00	credit
4	JKL012	B2	2022-12-01 13:00:00+05:30	2022-12-01 14:00:00+05:30	60	50.00	Debit
5	MNO345	C1	2022-12-01 14:00:00+05:30	2022-12-01 15:00:00+05:30	60	50.00	check

JOINS

1.

SELECT *

FROM parking_lot

INNER JOIN car_owners

ON parking_lot.car_num = car_owners.car_num;

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	car_make character varying (255)	car_model character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	parking_count integer	car_num character varying (255)	owner_name character varying (255)
1	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	ABC123	xxx
2	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	DEF456	yyy
3	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	GHI789	zzz
4	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	JKL012	aaa
5	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	MNO345	bbb

owner_address character varying (255)	owner_phone character varying (20)	owner_email character varying (255)
123 Main St	555-555-5555	xxx@email.com
456 Park Ave	555-555-5556	yyy@email.com
789 Elm St	555-555-5557	zzz@email.com
321 Oak St	555-555-5558	aaa@email.com
654 Pine St	555-555-5559	bbb@email.com

2.

SELECT *

FROM parking_lot

LEFT JOIN payments

ON parking_lot.parking_space = payments.parking_space;

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	car_make character varying (255)	car_model character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	parking_count integer	car_num character varying (255)	parking_space character varying (10)
1	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	ABC123	A1
2	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	DEF456	A2
3	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	GHI789	B1
4	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	JKL012	B2
5	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	MNO345	C1

amount numeric (10,2)	payment_method character varying (255)	payment_date timestamp with time zone
10.00	Cash	2022-12-01 10:30:00+05:30
11.00	Cash	2022-12-01 11:40:00+05:30
15.00	Credit	2022-12-01 12:30:00+05:30
20.00	Debit	2022-12-01 13:30:00+05:30

25.00	Check	2022-12-01 14:30:00+05:30

3.

```
SELECT *

FROM payments

RIGHT JOIN parking_report

ON payments.car_num = parking_report.car_num;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	parking_space character varying (10)	amount numeric (10,2)	payment_method character varying (255)	payment_date timestamp with time zone	car_num character varying (255)	parking_space character varying (10)	start_time timestamp with time zone
1	ABC123	A1	10.00	Cash	2022-12-01 10:30:00+05:30	ABC123	A1	2022-12-01 10:00:00+05:30
2	DEF456	A2	11.00	Cash	2022-12-01 11:40:00+05:30	DEF456	A2	2022-12-01 11:00:00+05:30
3	GHI789	B1	15.00	Credit	2022-12-01 12:30:00+05:30	GHI789	B1	2022-12-01 12:00:00+05:30
4	JKL012	B2	20.00	Debit	2022-12-01 13:30:00+05:30	JKL012	B2	2022-12-01 13:00:00+05:30
5	MNO345	C1	25.00	Check	2022-12-01 14:30:00+05:30	MNO345	C1	2022-12-01 14:00:00+05:30

end_time timestamp with time zone	duration integer	amount numeric (10,2)	payment_method character varying (255)
2022-12-01 11:00:00+05:30	60	50.00	cash
2022-12-01 12:00:00+05:30	60	50.00	cash
2022-12-01 13:00:00+05:30	60	50.00	credit
2022-12-01 14:00:00+05:30	60	50.00	Debit
2022-12-01 15:00:00+05:30	60	50.00	check

4.

```
SELECT *

FROM car_owners

FULL OUTER JOIN parking_report

ON car_owners.car_num = parking_report.car_num;
```

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	owner_name character varying (255)	owner_address character varying (255)	owner_phone character varying (20)	owner_email character varying (255)	car_num character varying (255)	parking_space character varying (10)	start_time timestamp with time zone
1	ABC123	xxx	123 Main St	555-555-5555	xxx@email.com	ABC123	A1	2022-12-01 10:00:00+05:30
2	DEF456	yyy	456 Park Ave	555-555-5556	yyy@email.com	DEF456	A2	2022-12-01 11:00:00+05:30
3	GHI789	zzz	789 Elm St	555-555-5557	zzz@email.com	GHI789	B1	2022-12-01 12:00:00+05:30
4	JKL012	aaa	321 Oak St	555-555-5558	aaa@email.com	JKL012	B2	2022-12-01 13:00:00+05:30
5	MNO345	bbb	654 Pine St	555-555-5559	bbb@email.com	MNO345	C1	2022-12-01 14:00:00+05:30

end_time timestamp with time zone	duration integer	amount numeric (10,2)	payment_method character varying (255)
2022-12-01 11:00:00+05:30	60	50.00	cash
2022-12-01 12:00:00+05:30	60	50.00	cash

2022-12-01 13:00:00+05:30	60	50.00	credit
2022-12-01 14:00:00+05:30	60	50.00	Debit
2022-12-01 15:00:00+05:30	60	50.00	check

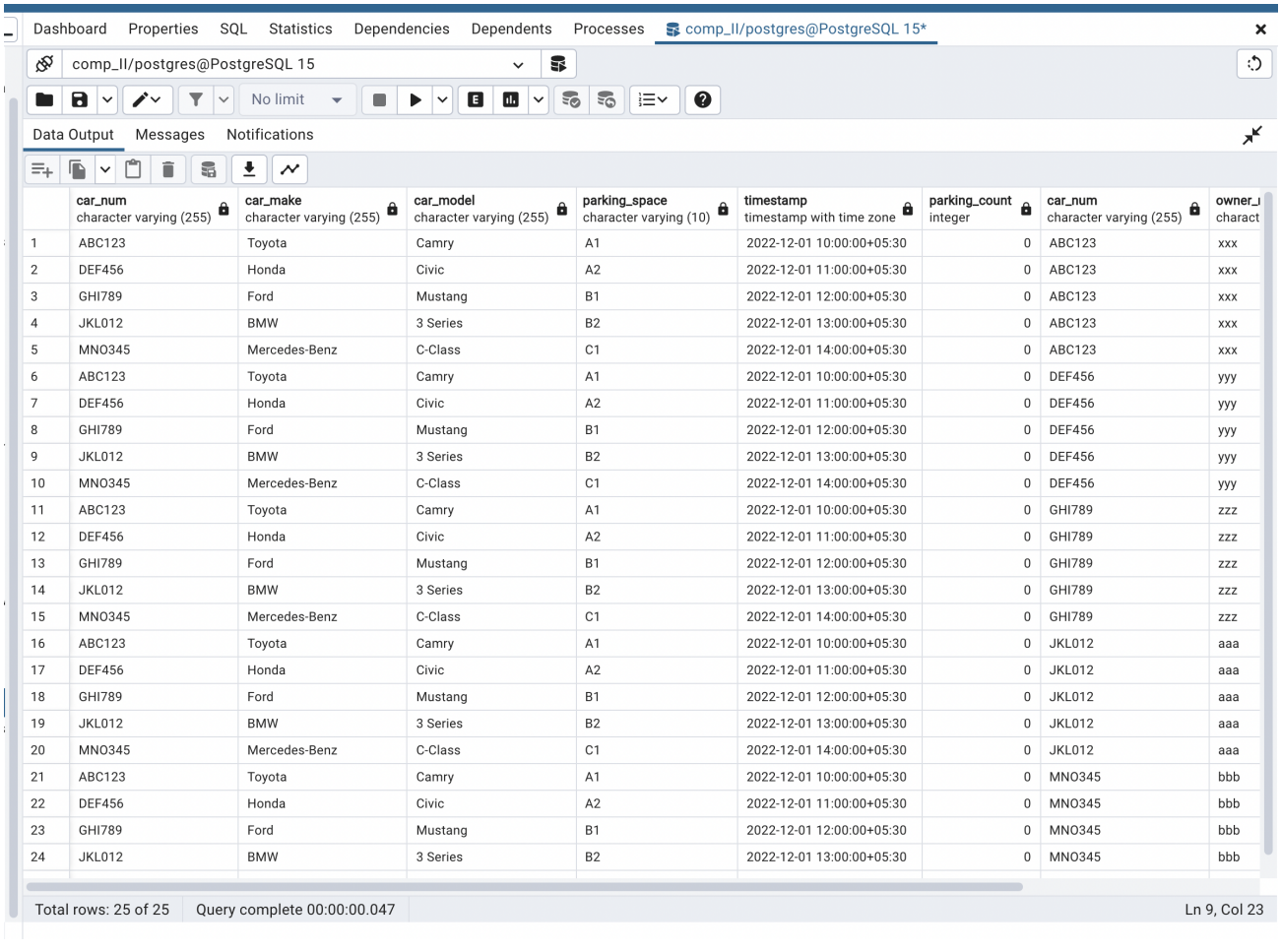
5.

SELECT *

FROM parking_lot

CROSS JOIN car_owners;

OUTPUT:



	car_num character varying (255)	car_make character varying (255)	car_model character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	parking_count integer	car_num character varying (255)	owner_i charact
1	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	ABC123	xxx
2	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	ABC123	xxx
3	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	ABC123	xxx
4	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	ABC123	xxx
5	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	ABC123	xxx
6	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	DEF456	yyy
7	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	DEF456	yyy
8	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	DEF456	yyy
9	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	DEF456	yyy
10	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	DEF456	yyy
11	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	GHI789	zzz
12	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	GHI789	zzz
13	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	GHI789	zzz
14	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	GHI789	zzz
15	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	GHI789	zzz
16	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	JKL012	aaa
17	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	JKL012	aaa
18	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	JKL012	aaa
19	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	JKL012	aaa
20	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30	0	JKL012	aaa
21	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30	0	MNO345	bbb
22	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30	0	MNO345	bbb
23	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30	0	MNO345	bbb
24	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30	0	MNO345	bbb

owner_name character varying (255)	owner_address character varying (255)	owner_phone character varying (20)	owner_email character varying (255)
xxx	123 Main St	555-555-5555	xxx@email.com
xxx	123 Main St	555-555-5555	xxx@email.com
xxx	123 Main St	555-555-5555	xxx@email.com
xxx	123 Main St	555-555-5555	xxx@email.com
yyy	456 Park Ave	555-555-5556	yyy@email.com
yyy	456 Park Ave	555-555-5556	yyy@email.com
yyy	456 Park Ave	555-555-5556	yyy@email.com
yyy	456 Park Ave	555-555-5556	yyy@email.com
yyy	456 Park Ave	555-555-5556	yyy@email.com
zzz	789 Elm St	555-555-5557	zzz@email.com
zzz	789 Elm St	555-555-5557	zzz@email.com
zzz	789 Elm St	555-555-5557	zzz@email.com
zzz	789 Elm St	555-555-5557	zzz@email.com
zzz	789 Elm St	555-555-5557	zzz@email.com

aaa	321 Oak St	555-555-5558	aaa@email.com
aaa	321 Oak St	555-555-5558	aaa@email.com
aaa	321 Oak St	555-555-5558	aaa@email.com
aaa	321 Oak St	555-555-5558	aaa@email.com
aaa	321 Oak St	555-555-5558	aaa@email.com
bbb	654 Pine St	555-555-5559	bbb@email.com
bbb	654 Pine St	555-555-5559	bbb@email.com
bbb	654 Pine St	555-555-5559	bbb@email.com
bbb	654 Pine St	555-555-5559	bbb@email.com
bbb	654 Pine St	555-555-5559	bbb@email.com

Ln 9, Col 23

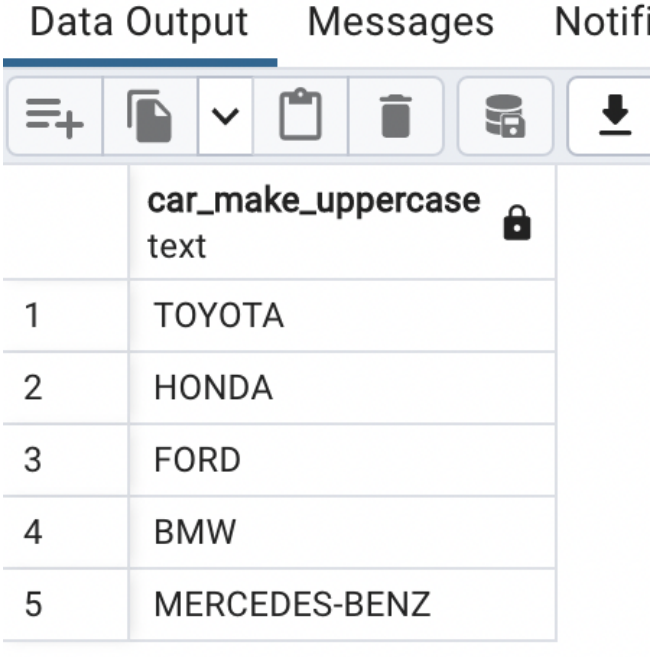
Single Row Functions

1.

SELECT UPPER(car_make) as car_make_uppercase

FROM parking_lot;

OUTPUT:



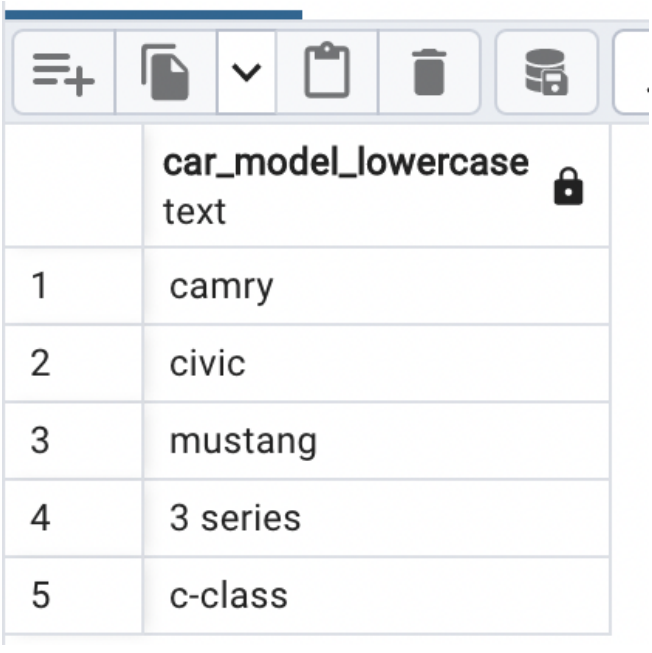
	car_make_uppercase text
1	TOYOTA
2	HONDA
3	FORD
4	BMW
5	MERCEDES-BENZ

2.

SELECT LOWER(car_model) as car_model_lowercase

FROM parking_lot;

OUTPUT:



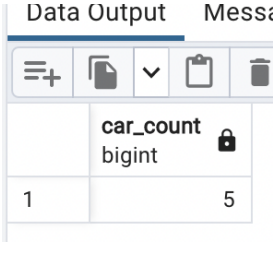
	car_model_lowercase text
1	camry
2	civic
3	mustang
4	3 series
5	c-class

3.

SELECT COUNT(*) as car_count

FROM parking_lot;

OUTPUT:



Data Output Messa

	car_count bigint
1	5

Aggregate Functions

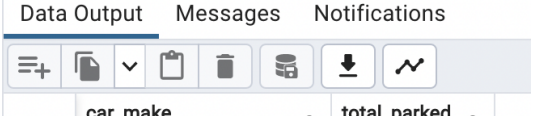
1.

SELECT car_make, COUNT(*) as total_parked

FROM parking_lot

GROUP BY car_make;

OUTPUT:



Data Output Messages Notifications

car_make total_parked

	car_make character varying (255)	total_parked bigint
1	Honda	1
2	Ford	1
3	Mercedes-Benz	1
4	BMW	1
5	Toyota	1

2.

SELECT car_make, car_model, SUM(parking_count) as total_parking_count

FROM parking_lot

GROUP BY car_make, car_model;

OUTPUT:

Data Output Messages Notifications

	car_make character varying (255)	car_model character varying (255)	total_parking_count bigint
1	Mercedes-Benz	C-Class	0
2	Honda	Civic	0
3	Ford	Mustang	0
4	Toyota	Camry	0
5	BMW	3 Series	0

3.

SELECT car_make, AVG(EXTRACT(EPOCH FROM (NOW() - timestamp)) / 60) as avg_parking_time

FROM parking_lot

GROUP BY car_make;

OUTPUT:

Data Output Messages Notifications

	car_make character varying (255)	avg_parking_time numeric
1	Honda	155651.333738000000
2	Ford	155591.333738000000
3	Mercedes-Benz	155471.333738000000
4	BMW	155531.333738000000

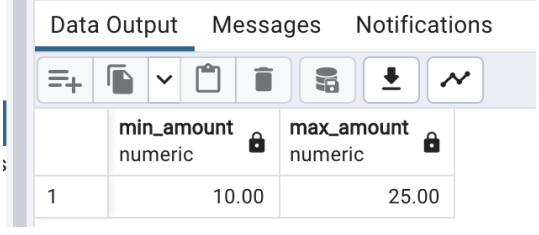
5	Toyota	155711.333738000000

4.

SELECT MIN(amount) as min_amount, MAX(amount) as max_amount

FROM payments;

OUTPUT:



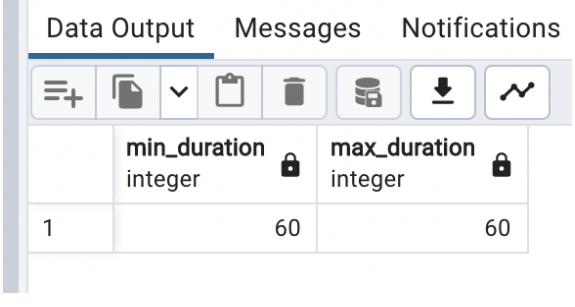
	min_amount numeric	max_amount numeric
1	10.00	25.00

5.

SELECT MIN(duration) as min_duration, MAX(duration) as max_duration

FROM parking_report;

OUTPUT:



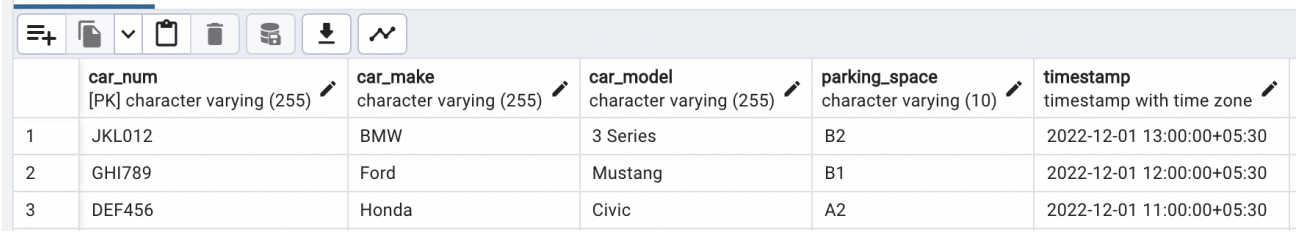
	min_duration integer	max_duration integer
1	60	60

ORDER BY

1.

SELECT * FROM parking_lot ORDER BY car_make ASC;

OUTPUT:



	car_num [PK] character varying (255)	car_make character varying (255)	car_model character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone
1	JKL012	BMW	3 Series	B2	2022-12-01 13:00:00+05:30
2	GHI789	Ford	Mustang	B1	2022-12-01 12:00:00+05:30
3	DEF456	Honda	Civic	A2	2022-12-01 11:00:00+05:30

4	MNO345	Mercedes-Benz	C-Class	C1	2022-12-01 14:00:00+05:30
5	ABC123	Toyota	Camry	A1	2022-12-01 10:00:00+05:30

2.

SELECT * FROM car_owners ORDER BY owner_name ASC;

OUTPUT:

Data Output Messages Notifications

	car_num [PK] character varying (255)	owner_name character varying (255)	owner_address character varying (255)	owner_phone character varying (20)	owner_email character varying (255)
1	JKL012	aaa	321 Oak St	555-555-5558	aaa@email.com
2	MNO345	bbb	654 Pine St	555-555-5559	bbb@email.com
3	ABC123	xxx	123 Main St	555-555-5555	xxx@email.com
4	DEF456	yyy	456 Park Ave	555-555-5556	yyy@email.com
5	GHI789	zzz	789 Elm St	555-555-5557	zzz@email.com

SUB QUERIES

1.

SELECT car_num, car_make, car_model

FROM parking_lot

WHERE car_num IN (SELECT car_num FROM car_owners WHERE owner_phone LIKE '555%');

OUTPUT:

Data Output Messages Notifications

	car_num [PK] character varying (255)	car_make character varying (255)	car_model character varying (255)
1	ABC123	Toyota	Camry
2	DEF456	Honda	Civic
3	GHI789	Ford	Mustang
4	JKL012	BMW	3 Series
5	MNO345	Mercedes-Benz	C-Class

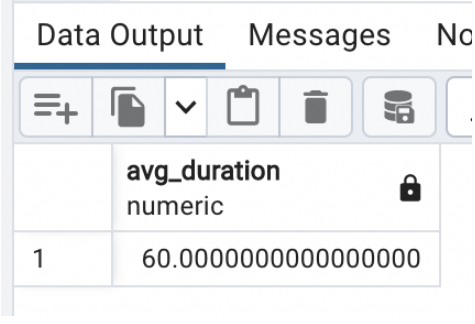
2.

SELECT AVG(duration) as avg_duration

FROM (SELECT (EXTRACT(EPOCH FROM (end_time - start_time)))/60 AS duration

FROM parking_report) AS durations;

OUTPUT:



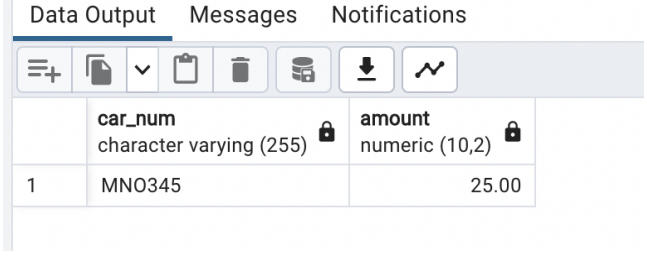
3.

SELECT car_num, amount

FROM payments

WHERE amount = (SELECT MAX(amount) FROM payments);

OUTPUT:



SET OPERATIONS

1.

SELECT car_num, parking_space, timestamp, 'parking_lot' as source

FROM parking_lot

UNION

SELECT car_num, parking_space, payment_date, 'payments' as source

FROM payments;

OUTPUT:

	car_num character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	source text
1	ABC123	A1	2022-12-01 10:30:00+05:30	payments
2	JKL012	B2	2022-12-01 13:00:00+05:30	parking_lot
3	MNO345	C1	2022-12-01 14:00:00+05:30	parking_lot
4	ABC123	A1	2022-12-01 10:00:00+05:30	parking_lot
5	GHI789	B1	2022-12-01 12:00:00+05:30	parking_lot
6	GHI789	B1	2022-12-01 12:30:00+05:30	payments
7	JKL012	B2	2022-12-01 13:30:00+05:30	payments
8	MNO345	C1	2022-12-01 14:30:00+05:30	payments
9	DEF456	A2	2022-12-01 11:40:00+05:30	payments
10	DEF456	A2	2022-12-01 11:00:00+05:30	parking_lot

2.

SELECT car_num, parking_space, timestamp

FROM parking_lot

INTERSECT

SELECT car_num, parking_space, start_time

FROM parking_report;

OUTPUT:

Data Output Messages Notifications

	car_num character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone
1	MNO345	C1	2022-12-01 14:00:00+05:30
2	ABC123	A1	2022-12-01 10:00:00+05:30
3	JKL012	B2	2022-12-01 13:00:00+05:30
4	DEF456	A2	2022-12-01 11:00:00+05:30
5	GHI789	B1	2022-12-01 12:00:00+05:30

3.

SELECT car_num, parking_space, timestamp, 'parking_lot' as source

FROM parking_lot

EXCEPT

SELECT car_num, parking_space, payment_date, 'payments' as source

FROM payments;

OUTPUT:

Data Output | Messages | Notifications

	car_num character varying (255)	parking_space character varying (10)	timestamp timestamp with time zone	source text
1	JKL012	B2	2022-12-01 13:00:00+05:30	parking_lot
2	GHI789	B1	2022-12-01 12:00:00+05:30	parking_lot
3	MNO345	C1	2022-12-01 14:00:00+05:30	parking_lot
4	ABC123	A1	2022-12-01 10:00:00+05:30	parking_lot
5	DEF456	A2	2022-12-01 11:00:00+05:30	parking_lot

SEQUENCE

CREATE SEQUENCE parking_space_seq START WITH 1 INCREMENT BY 1;

ALTER TABLE parking_lot ALTER COLUMN parking_space SET DEFAULT nextval('parking_space_seq');

OUTPUT:

Data Output | Messages | Notifications

```
ALTER TABLE

Query returned successfully in 35 msec.
```

VIEW

CREATE VIEW parking_summary AS

SELECT

parking_lot.parking_space,

```
 parking_lot.car_make,
 parking_lot.car_model,
 car_owners.owner_name,
 car_owners.owner_address,
 car_owners.owner_phone,
 payments.payment_date,
 payments.payment_method,
 payments.amount
FROM parking_lot
INNER JOIN car_owners ON parking_lot.car_num = car_owners.car_num
INNER JOIN payments ON parking_lot.parking_space = payments.parking_space;
SELECT * FROM parking_summary;
```

OUTPUT:

Data Output | Messages | Notifications

	parking_space character varying (10)	car_make character varying (255)	car_model character varying (255)	owner_name character varying (255)	owner_address character varying (255)	owner_phone character varying (20)	p ti
1	A1	Toyota	Camry	xxx	123 Main St	555-555-5555	2
2	A2	Honda	Civic	yyy	456 Park Ave	555-555-5556	2
3	B1	Ford	Mustang	zzz	789 Elm St	555-555-5557	2
4	B2	BMW	3 Series	aaa	321 Oak St	555-555-5558	2
5	C1	Mercedes-Benz	C-Class	bbb	654 Pine St	555-555-5559	2

payment_date timestamp with time zone	payment_method character varying (255)	amount numeric (10,2)
2022-12-01 10:30:00+05:30	Cash	10.00
2022-12-01 11:40:00+05:30	Cash	11.00
2022-12-01 12:30:00+05:30	Credit	15.00
2022-12-01 13:30:00+05:30	Debit	20.00
2022-12-01 14:30:00+05:30	Check	25.00

INDEX

```
CREATE INDEX parking_space_idx ON parking_lot (parking_space);
```

OUTPUT:

Data Output | Messages | Notifications

```
CREATE INDEX
```

```
Query returned successfully in 79 msec.
```

FUNCTION

```
CREATE OR REPLACE FUNCTION insert_parking_history()

RETURNS TRIGGER AS $$

BEGIN

 INSERT INTO parking_history (car_num, parking_space, timestamp, event_type)

 VALUES (NEW.car_num, NEW.parking_space, NEW.timestamp, TG_OP);

 RETURN NEW;

END;

$$ LANGUAGE plpgsql;
```

OUTPUT:

Data Output | Messages | Notifications

```
CREATE FUNCTION

Query returned successfully in 62 msec.
```

TRIGGERS

INSERT

```
CREATE TRIGGER parking_lot_insert

AFTER INSERT ON parking_lot

FOR EACH ROW

EXECUTE FUNCTION insert_parking_history();
```

OUTPUT:

Data Output | Messages | Notifications

```
CREATE TRIGGER

Query returned successfully in 52 msec.
```

UPDATE

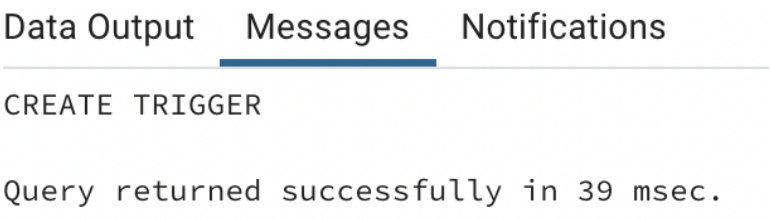
CREATE TRIGGER parking_lot_update

AFTER UPDATE ON parking_lot

FOR EACH ROW

EXECUTE FUNCTION insert_parking_history();

OUTPUT:



DELETE

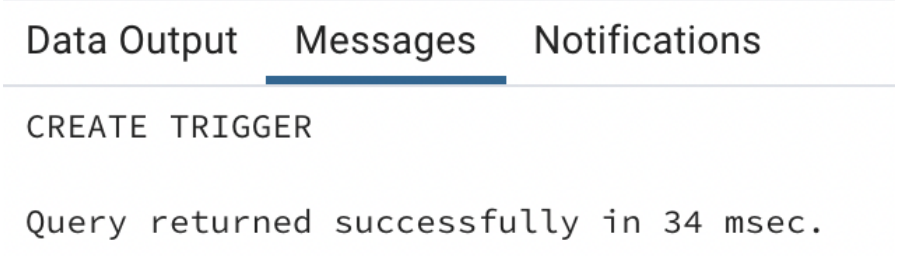
CREATE TRIGGER parking_lot_delete

AFTER DELETE ON parking_lot

FOR EACH ROW

EXECUTE FUNCTION insert_parking_history();

OUTPUT:



PROCEDURE

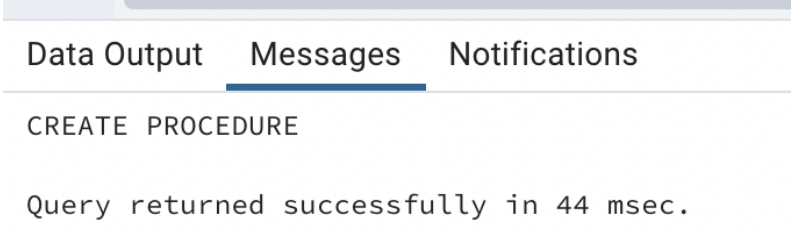
CREATE OR REPLACE PROCEDURE update_car_make_model(car_num VARCHAR(255), car_make VARCHAR(255), car_model VARCHAR(255))

AS $$

BEGIN

```
    UPDATE parking_lot
    SET car_make = update_car_make_model.car_make, car_model =
update_car_make_model.car_model
    WHERE car_num = update_car_make_model.car_num;
END;
$$ LANGUAGE plpgsql;
```

OUTPUT:



CURSOR

```
CREATE FUNCTION update_salary_above_threshold(threshold DECIMAL, increase_percent
DECIMAL) RETURNS VOID AS $$
DECLARE
    emp RECORD;
    new_salary DECIMAL;
    emp_cursor CURSOR FOR SELECT id, salary FROM employees WHERE salary > threshold;
BEGIN
    OPEN emp_cursor;
    LOOP
        FETCH emp_cursor INTO emp;
        EXIT WHEN NOT FOUND;
        new_salary := emp.salary * (1 + increase_percent);
        UPDATE employees SET salary = new_salary WHERE id = emp.id;
```

```
    END LOOP;

    CLOSE emp_cursor;

END;

$$ LANGUAGE plpgsql;
```

OUTPUT: