VIRTUAL CAR RENT

CREATE DATABASE VirtualCarRent

```
CREATE TABLE Cars (
        CarID int NOT NULL AUTO_INCREMENT,
        Class varchar(3) NOT NULL,
        Brand varchar(20) NOT NULL,
        Model varchar(15),
        Year year NOT NULL,
        Fuel varchar(15) NOT NULL,
        Gearbox varchar(15) NOT NULL,
        Door int,
        AC varchar(3),
        PRIMARY KEY (CarID)
)
```

SELECT * FROM cars

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

ALTER TABLE cars ADD People int

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

INSERT INTO Cars (Class, Brand, Model, Year, Fuel, Gearbox, Door, AC, People) VALUES ('B', 'Hyundai', 'I20', 2021, 'Gasoline', 'Manual', 5, 'Yes', 5), ('B', 'Ford', 'Fiesta', 2020, 'Gasoline', 'Manual', 3, NULL, 5), ('B', 'Toyota', 'Yaris', 2022, 'Gasoline', 'Manual', 5, 'Yes', 5), ('C', 'Hyundai', 'I30', 2021, 'Gasoline', 'Manual', 5, 'Yes', 5), ('C', 'Toyota', 'Corolla Sedan', 2022, 'Gasoline', 'Manual', 4, 'Yes', 5), ('C', 'Toyota', 'Corolla Kombi', 2021, 'Hybrid', 'Automatic', 5, 'Yes', 5), ('D', 'Toyota', 'Camry', 2022, 'Hybrid', 'Automatic', 4, 'Yes', 5), ('D', 'Mazda', '6 Kombi', 2021, 'Gasoline', 'Manual', 5, 'Yes', 5), ('E', 'Audi', 'A6', 2020, 'Diesel', 'Automatic', 4, 'Yes', 5), ('E', 'Lexus', 'ES300H', 2022, 'Hybrid', 'Automatic', 4, 'Yes', 5), ('SUV', 'Hyundai', 'Tucson', 2022, 'Gasoline', 'Automatic', 5, 'Yes', 7), ('SUV', 'Toyota', 'RAV4', 2022, 'Hybrid', 'Automatic', 5, 'Yes', 5), ('BUS', 'Toyota', 'Proace City', 2020, 'Diesel', 'Manual', 5, 'Yes', 9)

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	NULL	5
3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5
4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
5	C	Toyota	Corolla Sedan	2022	Gasoline	Manual	4	Yes	5
6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5
8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7
12	SUV	Toyota	RAV4	2022	Hybrid	Automatic	5	Yes	5
13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

UPDATE cars SET AC = 'No' WHERE CarID=2

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5
4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
5	C	Toyota	Corolla Sedan	2022	Gasoline	Manual	4	Yes	5
6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5
8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7
12	SUV	Toyota	RAV4	2022	Hybrid	Automatic	5	Yes	5
13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT DISTINCT brand FROM cars

brand
Hyundai
Ford
Toyota
Mazda
Audi
Lexus

SELECT COUNT(DISTINCT brand) FROM cars

COUNT(DISTINCT brand)
6

SELECT * FROM cars WHERE AC='No'

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM cars WHERE year=2022 AND (class='D' OR class='E')

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM cars WHERE NOT brand LIKE ('T%')

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM cars WHERE year <= 2021

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM cars WHERE class IN ('B', 'E')

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM cars ORDER BY year DESC

CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5
12	SUV	Toyota	RAV4	2022	Hybrid	Automatic	5	Yes	5
3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5
11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7
5	C	Toyota	Corolla Sedan	2022	Gasoline	Manual	4	Yes	5
10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT brand, model, year FROM cars WHERE model LIKE '%kombi%'

	brand	model	year
▶	Toyota	Corolla Kombi	2021
	Mazda	6 Kombi	2021

SELECT model FROM cars WHERE brand='toyota' AND gearbox='automatic' AND (fuel='hybrid' OR fuel='gasoline')

	model
▶	Corolla Kombi
	Camry
	RAV4

INSERT INTO cars (Class, Brand, Model, Year, Fuel, Gearbox, Door, AC, People) VALUES ('S', 'Ford', 'Mustang', 1967, 'Gasoline', 'Manual', 4, 'No', 4), ('S', 'Ford', 'Mustang', 2021, 'Gasoline', 'Automatic', 4, 'Yes', 4)

	CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
▶	1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5
	2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5
	3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5
	4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
	5	C	Toyota	Corolla Sedan	2022	Gasoline	Manual	4	Yes	5
	6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
	7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5
	8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5
	9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
	10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5
	11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7
	12	SUV	Toyota	RAV4	2022	Hybrid	Automatic	5	Yes	5
	13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
	14	S	Ford	Mustang	1967	Gasoline	Manual	4	No	4
	15	S	Ford	Mustang	2021	Gasoline	Automatic	4	Yes	4
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT brand, model, year AS OldestCar FROM cars WHERE year=(
        SELECT MIN(year) FROM cars
)

	brand	model	OldestCar
▶	Ford	Mustang	1967

SELECT * FROM cars WHERE year BETWEEN 2020 AND 2022 AND class NOT IN ('SUV', 'B') ORDER BY year LIMIT 5

	CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People
▶	13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9
	9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5
	4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5
	6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5
	15	S	Ford	Mustang	2021	Gasoline	Automatic	4	Yes	4
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

I created a new column 'CustomerID' in Table 'Cars'. Also I created new table 'Orders'

CREATE TABLE Orders (
  CustomerID int NOT NULL AUTO_INCREMENT,
  FirstName varchar(255) NOT NULL,
  LastName varchar(255) NOT NULL,
  Gender varchar(5) NOT NULL,
  Age int,
  DriverLicenseAge int,
  PRIMARY KEY (CustomerID)
);

ALTER TABLE cars
ADD FOREIGN KEY (CustomerID) REFERENCES orders(CustomerID)

INSERT INTO Orders (FirstName, LastName, Gender, Age, DriverLicenseAge) VALUES ('Hans', 'Kloss', 'M', 102, 86), ('Robert', 'Kubika', 'M', 38, 20), ('Janko', 'Muzykant', 'M', 18, 1), ('Anna', 'Nowak', 'K', 32, 10), ('Piotr', 'Kowalski', 'M', 52, 32), ('Wiktor', 'Frost', 'M', 45, 27

	CustomerID	FirstName	LastName	Gender	Age	DriverLicenseAge
▶	1	Hans	Kloss	M	102	86
	2	Robert	Kubika	M	38	20
	3	Janko	Muzykant	M	18	1
	4	Anna	Nowak	K	32	10
	5	Piotr	Kowalski	M	52	32
	6	Wiktor	Forst	M	45	27
*	NULL	NULL	NULL	NULL	NULL	NULL

UPDATE cars SET CustomerID=1 WHERE CarID=9
UPDATE cars SET CustomerID=2 WHERE CarID=2
UPDATE cars SET CustomerID=3 WHERE CarID=15
UPDATE cars SET CustomerID=4 WHERE CarID=12
UPDATE cars SET CustomerID=5 WHERE CarID=7

	CarID	Class	Brand	Model	Year	Fuel	Gearbox	Door	AC	People	CustomerID
▶	1	B	Hyundai	I20	2021	Gasoline	Manual	5	Yes	5	NULL
	2	B	Ford	Fiesta	2020	Gasoline	Manual	3	No	5	2
	3	B	Toyota	Yaris	2022	Gasoline	Manual	5	Yes	5	NULL
	4	C	Hyundai	I30	2021	Gasoline	Manual	5	Yes	5	NULL
	5	C	Toyota	Corolla Sedan	2022	Gasoline	Manual	4	Yes	5	NULL
	6	C	Toyota	Corolla Kombi	2021	Hybrid	Automatic	5	Yes	5	NULL
	7	D	Toyota	Camry	2022	Hybrid	Automatic	4	Yes	5	5
	8	D	Mazda	6 Kombi	2021	Gasoline	Manual	5	Yes	5	NULL
	9	E	Audi	A6	2020	Diesel	Automatic	4	Yes	5	1
	10	E	Lexus	ES300H	2022	Hybrid	Automatic	4	Yes	5	NULL
	11	SUV	Hyundai	Tucson	2022	Gasoline	Automatic	5	Yes	7	NULL
	12	SUV	Toyota	RAV4	2022	Hybrid	Automatic	5	Yes	5	4
	13	BUS	Toyota	Proace City	2020	Diesel	Manual	5	Yes	9	NULL
	14	S	Ford	Mustang	1967	Gasoline	Manual	4	No	4	NULL
	15	S	Ford	Mustang	2021	Gasoline	Automatic	4	Yes	4	3
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT CarID, Brand, Model, CustomerID FROM cars WHERE CustomerID IS NOT NULL

CarID	Brand	Model	CustomerID
2	Ford	Fiesta	2
7	Toyota	Camry	5
9	Audi	A6	1
12	Toyota	RAV4	4
15	Ford	Mustang	3
NULL	NULL	NULL	NULL

SELECT cars.Brand, cars.Model, orders.FirstName, orders.LastName
FROM cars
INNER JOIN orders
ON cars.CustomerID = orders.CustomerID

Brand	Model	FirstName	LastName
Ford	Fiesta	Robert	Kubika
Toyota	Camry	Piotr	Kowalski
Audi	A6	Hans	Kloss
Toyota	RAV4	Anna	Nowak
Ford	Mustang	Janko	Muzykant

SELECT cars.Model, orders.FirstName, orders.LastName, orders.DriverLicenseAge
FROM cars
LEFT JOIN orders
ON cars.CustomerID = orders.CustomerID ORDER BY DriverLicenseAge DESC

Model	FirstName	LastName	DriverLicenseAge
A6	Hans	Kloss	86
Camry	Piotr	Kowalski	32
Fiesta	Robert	Kubika	20
RAV4	Anna	Nowak	10
Mustang	Janko	Muzykant	1
Proace City	NULL	NULL	NULL
I20	NULL	NULL	NULL
Corolla Sedan	NULL	NULL	NULL
Mustang	NULL	NULL	NULL
Corolla Kombi	NULL	NULL	NULL
ES300H	NULL	NULL	NULL
Tucson	NULL	NULL	NULL
Yaris	NULL	NULL	NULL
I30	NULL	NULL	NULL
6 Kombi	NULL	NULL	NULL

SELECT cars.CarID, orders.FirstName, orders.LastName
FROM cars
RIGHT JOIN orders
ON cars.CustomerID = orders.CustomerID

CarID	FirstName	LastName
2	Robert	Kubika
7	Piotr	Kowalski
9	Hans	Kloss
12	Anna	Nowak
15	Janko	Muzykant
NULL	Wiktor	Forst

SELECT c.Brand, c.Model, o.FirstName, o.LastName
FROM cars AS c
RIGHT JOIN orders AS o
ON c.CustomerID = o.CustomerID

Brand	Model	FirstName	LastName
Ford	Fiesta	Robert	Kubika
Toyota	Camry	Piotr	Kowalski
Audi	A6	Hans	Kloss
Toyota	RAV4	Anna	Nowak
Ford	Mustang	Janko	Muzykant
NULL	NULL	Wiktor	Forst