**Ministry of Education and Science of the Republic of Kazakhstan**

**Astana IT University**

Furniture Online-Store Management System

Olzhas Uikas, Aya Almatay, Dias Doktyrbek

BD-2006

Information and communication technologies: Final report Database project

**Instructor:** M.Ed. Aivar Sakhipov

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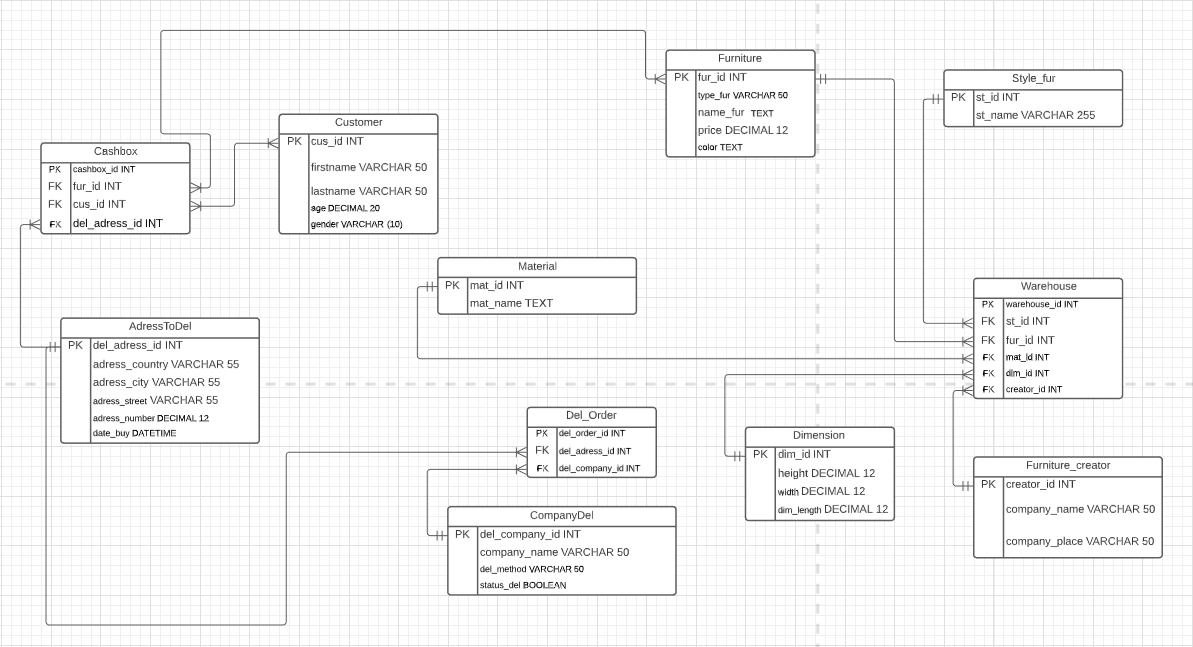
**Nur-Sultan, 2020**

1. Determine the purpose of your system.

-The database is intended for an online furniture store. For customers, furniture, and addressing of orders. The main function of this database is to create a favorable environment for buying furniture online. You can use it for a website or even for a mobile app. The database has 11 tables, but 3 of the 11 are intermediate tables (cashbox, del\_order, warehouse). So, they have real 8 tables: client, AdressToDel, material, CompanyDel, dimension, Furniture\_creator, Style\_fur, furniture. One example of how this database works: so, a customer wants to buy a new sofa for their living room. And the customer lives in Kazakhstan. Now the customer sees new sofas from the site, and this is the site of our store. And he ordered one sofa for the living room. And he specified the address of the order. The order address is Kazakhstan. And we, as an" online store", say order-company address of the customer and order-company deliver this sofa by plane, because the sofa Creator is not a company from Kazakhstan. And when the order is delivered, we can change the delivery status to "True". Because the "False" is the order hasn't been delivered yet.

* What is the purpose of the database? Why is this needed? What should he do?
* This is a database for an online furniture store. The purpose of the database is to view customer and furniture information. Since the store is online, everything is done through the site. And all the information comes from the site. This helps to simplify store management as well as organize all data for future use.
* Who are users and what are they information needs?
* Administration, technical support and logisticians are users. And customers are end users. They will have access to a website where they can see all the furniture, choose a delivery method and order furniture online.
* What problems should the system solve decide?
* Reduces the risks of shortages of goods. This is due to the constant checking of goods on the store, it is possible to replenish goods from time to time. It also helps in target marketing. This means that I know the information can be advertised to the end user that he will probably buy. This is done using data stored in a database.
* What input data are available in the database?
* Information about the buyer, information about where and who delivers the goods, delivery status, the total amount of all furniture that is in stock, types of furniture: their sizes, their materials, their creators.
* What information should be kept in database?
* Do not store unnecessary information that will not be useful for improving sales or control of goods. The main data of this date base is: Names and addresses of customers, type and price of furniture and delivery details to ensure that delivery will be delivered.

2.Create ERD using Crow’s Foot notation (min.10 well-organized entities; their attributes, and types of relations);



The whole relationship is shown at ERD using Crow’s Foot notation:

1. *Cashbox* and *Furniture* many to many;
2. *Cashbox* and *Customer* many to many;
3. *Cashbox* and *AdressToDel* many to one;
4. *AdressToDel* and *Del\_Order* one to many;
5. *CompanyDel* and *Del\_Order* one to many;
6. *Dimension* and *Warehouse* one to many;
7. *Furniture\_creator* and *Warehouse* one to many;
8. *Material* and *Warehouse* one to many;
9. *Style\_fur* and *Warehouse* one to many;
10. *Furniture* and *Warehouse* one to many;

*Cashbox*, *Del\_Order* and *Warehouse* are an intermediate table. This means that they link tables to each other with which they relate.

These business rules are the restrictions under which the database will work stably.

1. One *Furniture* has a one *Furniture Creator*
2. One *Furniture Creator* can create one or many *Furniture*
3. Many *Customers* can buy and order many *Furniture*
4. One *Furniture* has only one *Furniture Type*
5. Many *Orders* may have one *Address*
6. Same *Materials* have one or many *Furniture*
7. One *Furniture* has one *Material*
8. On *Furniture* can be only on *Furniture Style*
9. One *Delivery Company* have one or many *Order*
10. One *Furniture* can be order only one *Customer*

3. Create database: tables with entities (tables) and constraints (PK, FK, UK, and etc.);

CREATE TABLE Material ( --1 mat\_id INT NOT NULL, mat\_name TEXT NOT NULL,

quality VARCHAR(50) NOT NULL,

PRIMARY KEY (mat\_id)

);

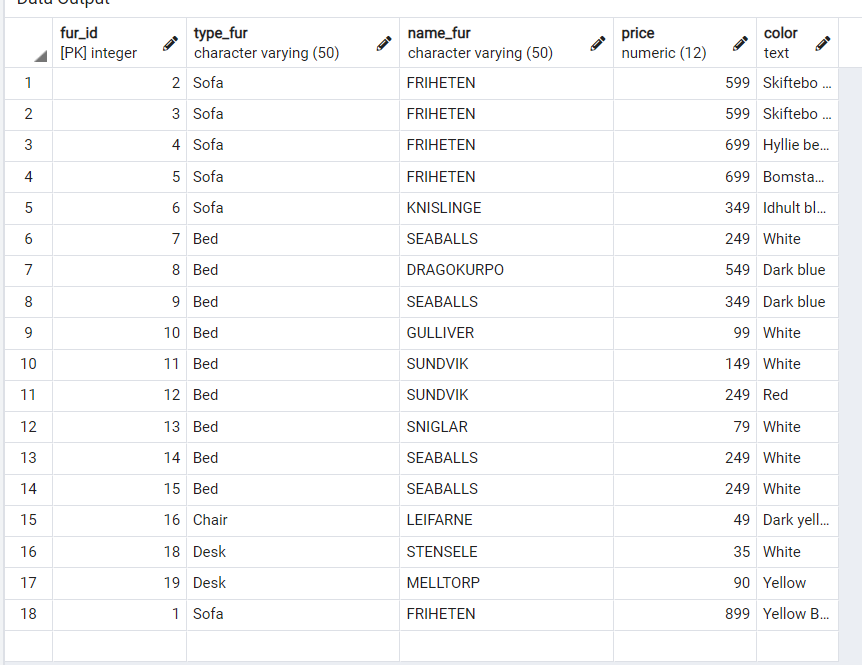


CREATE TABLE Furniture ( --2 fur\_id INT NOT NULL,

type\_fur VARCHAR(50) NOT NULL, name\_fur VARCHAR(50) NOT NULL, price DECIMAL(12) NOT NULL,

PRIMARY KEY (fur\_id)

);



CREATE TABLE Style\_fur ( --3 st\_id INT NOT NULL,

st\_name VARCHAR(255) NOT NULL, PRIMARY KEY (st\_id)

);



CREATE TABLE Furniture\_creator ( --4 creator\_id INT NOT NULL,

company\_name VARCHAR(50) NOT NULL, company\_place VARCHAR(50) NOT NULL, PRIMARY KEY (creator\_id)

);

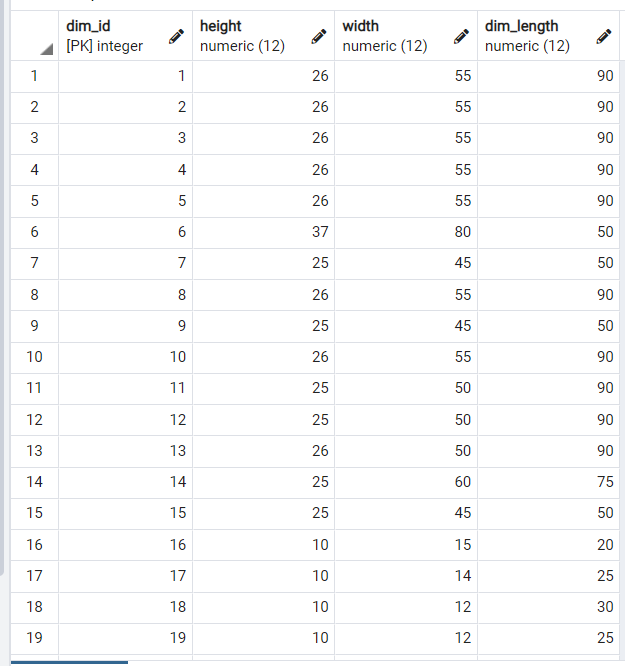


CREATE TABLE Dimension ( --5 dim\_id INT NOT NULL,

height DECIMAL(12) NOT NULL, weight DECIMAL(12) NOT NULL, width DECIMAL(12) NOT NULL,

dim\_length DECIMAL(12) NOT NULL, PRIMARY KEY (dim\_id)

);



CREATE TABLE Warehouse ( --6 warehouse\_id INT NOT NULL, st\_id INT NOT NULL,

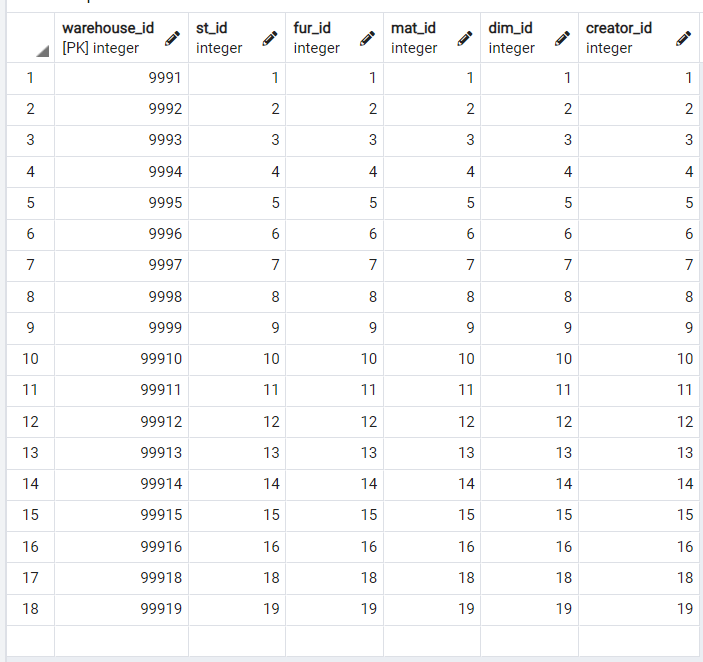
fur\_id INT NOT NULL, mat\_id INT NOT NULL, dim\_id INT NOT NULL, creator\_id INT NOT NULL,

PRIMARY KEY (warehouse\_id),

FOREIGN KEY (st\_id) REFERENCES Style\_fur(st\_id), FOREIGN KEY (fur\_id) REFERENCES Furniture(fur\_id), FOREIGN KEY (mat\_id) REFERENCES Material(mat\_id), FOREIGN KEY (dim\_id) REFERENCES Dimension(dim\_id),

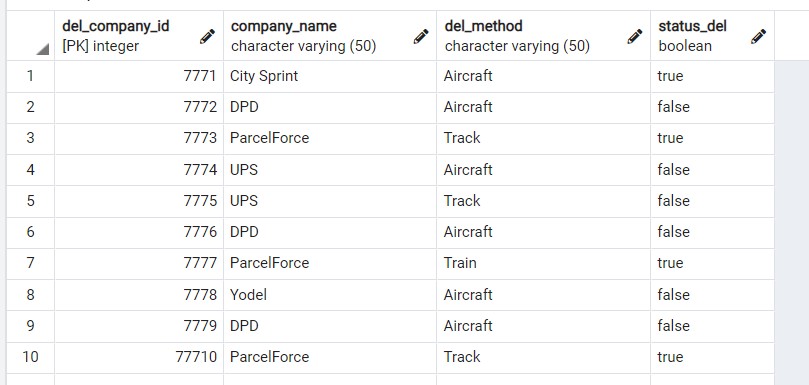
FOREIGN KEY (creator\_id) REFERENCES Furniture\_creator(creator\_id)

);



CREATE TABLE CompanyDel ( --7 del\_company\_id INT NOT NULL, company\_name VARCHAR(50) NOT NULL, del\_method VARCHAR(50) NOT NULL, PRIMARY KEY (del\_company\_id)

);



CREATE TABLE AdressToDel ( --8 del\_adress\_id INT NOT NULL, adress\_country VARCHAR(55) NOT NULL, adress\_city VARCHAR(55) NOT NULL, adress\_street VARCHAR(55) NOT NULL, adress\_number DECIMAL(12) NOT NULL, date\_buy DATE NOT NULL,

PRIMARY KEY (del\_adress\_id)

);

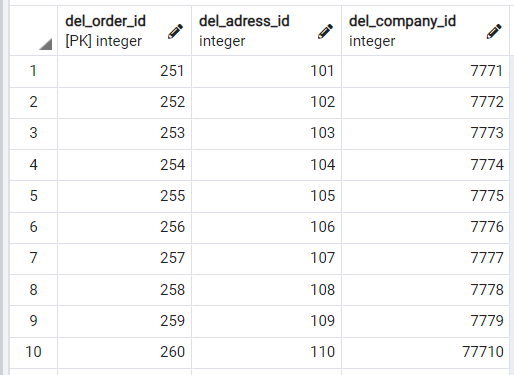


CREATE TABLE Del\_Order ( --9

del\_order\_id INT NOT NULL, del\_adress\_id INT NOT NULL, del\_company\_id INT NOT NULL, PRIMARY KEY (del\_order\_id),

FOREIGN KEY (del\_adress\_id) REFERENCES AdressToDel(del\_adress\_id), FOREIGN KEY (del\_company\_id) REFERENCES CompanyDel(del\_company\_id)

);



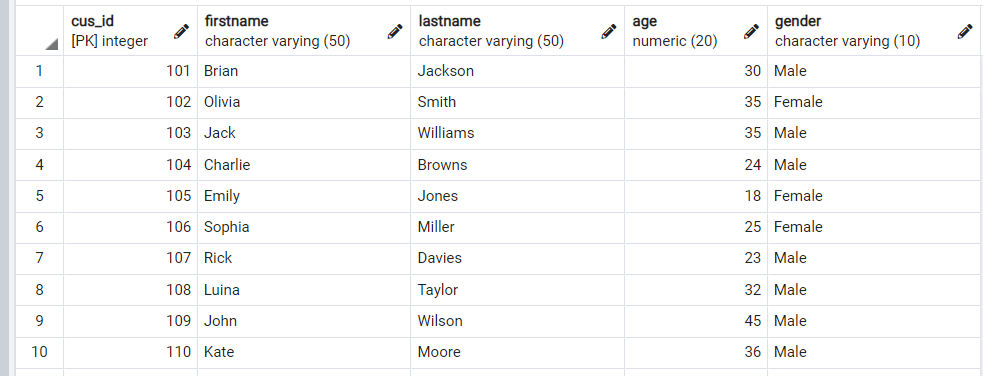
CREATE TABLE Customer ( --10

cus\_id INT NOT NULL,

firstname VARCHAR(50) NOT NULL, lastname VARCHAR(50) NOT NULL, age DECIMAL(20) NOT NULL, gender VARCHAR(10) NOT NULL,

PRIMARY KEY (cus\_id)

);



CREATE TABLE Cashbox ( --11

cashbox\_id INT NOT NULL,

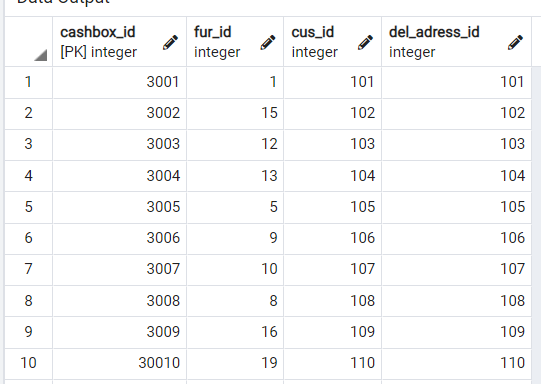
fur\_id INT NOT NULL, cus\_id INT NOT NULL,

del\_adress\_id INT NOT NULL, PRIMARY KEY (cashbox\_id),

FOREIGN KEY (fur\_id) REFERENCES Furniture(fur\_id), FOREIGN KEY (cus\_id) REFERENCES Customer(cus\_id),

FOREIGN KEY (del\_adress\_id) REFERENCES AdressToDel(del\_adress\_id)

);



4.Write 5 different (add, drop and constraints) ALTER TABLE statements;

1. ALTER TABLE Furniture ADD color TEXT not null; ALTER TABLE CompanyDel

ADD status\_del BOOLEAN NOT NULL;

1. ALTER TABLE Material DROP COLUMN quality; ALTER TABLE Dimension

DROP COLUMN weight;

1. ALTER TABLE Material

ADD PRIMARY KEY (mat\_id);

1. ALTER TABLE Del\_Order

ADD FOREIGN KEY (del\_company\_id) REFERENCES CompanyDel(del\_company\_id);

1. ALTER TABLE Material ADD test\_column TEXT; ALTER TABLE Material

RENAME COLUMN test\_column TO test\_column\_new;

5.Write SQL query for DML statements (insert, delete, update). Insert - for all tables at least 10 rows, Update – for each table with a condition, Delete – for each table with a condition;

INSERT INTO Furniture VALUES (1,'Sofa', 'FRIHETEN' , '699.00' , 'Hyllie dark gray') ; INSERT INTO Furniture VALUES (2,'Sofa', 'FRIHETEN' , '599.00' , 'Skiftebo blue') ; INSERT INTO Furniture VALUES (3,'Sofa', 'FRIHETEN' , '599.00' , 'Skiftebo dark gray') ; INSERT INTO Furniture VALUES (4,'Sofa', 'FRIHETEN' , '699.00' , 'Hyllie beige') ; INSERT INTO Furniture VALUES (5,'Sofa', 'FRIHETEN' , '699.00' , 'Bomstad black') ; INSERT INTO Furniture VALUES (6,'Sofa', 'KNISLINGE' , '349.00' , 'Idhult black') ; INSERT INTO Furniture VALUES (7,'Bed', 'SEABALLS' , '249.00' , 'White') ;

INSERT INTO Furniture VALUES (8,'Bed', 'DRAGOKURPO' , '549.00' , 'Dark blue') ; INSERT INTO Furniture VALUES (9,'Bed', 'SEABALLS' , '349.00' , 'Dark blue') ; INSERT INTO Furniture VALUES (10,'Bed', 'GULLIVER' , '99.00' , 'White') ; INSERT INTO Furniture VALUES (11,'Bed', 'SUNDVIK' , '149.00' , 'White') ; INSERT INTO Furniture VALUES (12,'Bed', 'SUNDVIK' , '249.00' , 'Red') ;

INSERT INTO Furniture VALUES (13,'Bed', 'SNIGLAR' , '79.00' , 'White') ; INSERT INTO Furniture VALUES (14,'Bed', 'SEABALLS' , '249.00' , 'White') ; INSERT INTO Furniture VALUES (15,'Bed', 'SEABALLS' , '249.00' , 'White') ;

INSERT INTO Furniture VALUES (16,'Chair', 'LEIFARNE' , '49.00' , 'Dark yellow') ; INSERT INTO Furniture VALUES (17,'Chair', 'INGOLF' , '59.00' , 'White') ; INSERT INTO Furniture VALUES (18,'Desk', 'STENSELE' , '35.00' , 'White' ) ; INSERT INTO Furniture VALUES (19,'Desk', 'MELLTORP' , '90.00' , 'Yellow' ) ;

INSERT INTO Style\_fur VALUES (1, 'Living room') ; INSERT INTO Style\_fur VALUES (2, 'Office room') ; INSERT INTO Style\_fur VALUES (3, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (4, 'Living room') ; INSERT INTO Style\_fur VALUES (5, 'Office room') ; INSERT INTO Style\_fur VALUES (6, 'Living room') ; INSERT INTO Style\_fur VALUES (7, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (8, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (9, 'Office room') ; INSERT INTO Style\_fur VALUES (10, 'Living room') ; INSERT INTO Style\_fur VALUES (11, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (12, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (13, 'Living room') ; INSERT INTO Style\_fur VALUES (14, 'Living room') ; INSERT INTO Style\_fur VALUES (15, 'Bedroom Furniture') ; INSERT INTO Style\_fur VALUES (16, 'Bedroom Furniture') ;

INSERT INTO Style\_fur VALUES (17, 'Dining Room Furniture') ; INSERT INTO Style\_fur VALUES (18, 'Dining Room Furniture') ; INSERT INTO Style\_fur VALUES (19, 'Dining Room Furniture') ;

INSERT INTO Furniture\_creator VALUES (1,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (2,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (3,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (4,'EUROMARKET DESIGNG', 'UK') ;

INSERT INTO Furniture\_creator VALUES (5,'American Home Furnishings Alliance', 'USA') ;

INSERT INTO Furniture\_creator VALUES (6,'JASON FURNITURE', 'CH') ; INSERT INTO Furniture\_creator VALUES (7,'KUKA FURNITURE', 'MO') ;

INSERT INTO Furniture\_creator VALUES (8,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (9,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (10,'KUKA FURNITURE', 'MO') ;

INSERT INTO Furniture\_creator VALUES (11,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (12,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (13,'JASON FURNITURE', 'CH') ;

INSERT INTO Furniture\_creator VALUES (14,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (15,'JASON FURNITURE', 'CH') ;

INSERT INTO Furniture\_creator VALUES (16,'EUROMARKET DESIGNG', 'UK') ; INSERT INTO Furniture\_creator VALUES (17,'KUKA FURNITURE', 'MO') ;

INSERT INTO Furniture\_creator VALUES (18,'American Home Furnishings Alliance', 'USA') ; INSERT INTO Furniture\_creator VALUES (19,'KUKA FURNITURE', 'MO') ;

insert into customer values (101, 'Brian', 'Jackson','30', 'Male'); insert into customer values (102, 'Olivia', 'Smith','35', 'Female'); insert into customer values (103, 'Jack', 'Williams','35', 'Male'); insert into customer values (104, 'Charlie', 'Browns','24', 'Male'); insert into customer values (105, 'Emily', 'Jones','18', 'Female'); insert into customer values (106, 'Sophia', 'Miller','25', 'Female'); insert into customer values (107, 'Rick', 'Davies','23', 'Male'); insert into customer values (108, 'Luina', 'Taylor','32', 'Male'); insert into customer values (109, 'John', 'Wilson','45', 'Male'); insert into customer values (110, 'Kate', 'Moore','36', 'Male');

INSERT INTO Material VALUES (1, 'Fabric') ; INSERT INTO Material VALUES (2, 'Fabric') ; INSERT INTO Material VALUES (3, 'leather') ; INSERT INTO Material VALUES (4, 'Fabric') ;

INSERT INTO Material VALUES (5, 'leather') ; INSERT INTO Material VALUES (6, 'Fabric') ; INSERT INTO Material VALUES (7, 'Wood') ;

INSERT INTO Material VALUES (8, 'Velvet') ; INSERT INTO Material VALUES (9, 'Wood') ;

INSERT INTO Material VALUES (10, 'Velvet') ; INSERT INTO Material VALUES (11, 'Wood') ; INSERT INTO Material VALUES (12, 'Wood') ; INSERT INTO Material VALUES (13, 'Metal') ; INSERT INTO Material VALUES (14, 'Wood') ; INSERT INTO Material VALUES (15, 'Wood') ; INSERT INTO Material VALUES (16, 'Wood') ;

INSERT INTO Material VALUES (17, 'Plastic') ; INSERT INTO Material VALUES (18, 'fibreboard') ; INSERT INTO Material VALUES (19, 'Oak') ;

INSERT INTO Dimension VALUES (1, '26','55','90') ; INSERT INTO Dimension VALUES (2, '26','55','90') ; INSERT INTO Dimension VALUES (3, '26','55','90') ; INSERT INTO Dimension VALUES (4, '26','55','90') ; INSERT INTO Dimension VALUES (5, '26','55','90') ; INSERT INTO Dimension VALUES (6, '37','80','50') ; INSERT INTO Dimension VALUES (7, '25','45','50') ; INSERT INTO Dimension VALUES (8, '26','55','90') ; INSERT INTO Dimension VALUES (9, '25','45','50') ; INSERT INTO Dimension VALUES (10, '26','55','90') ; INSERT INTO Dimension VALUES (11, '25','50','90') ; INSERT INTO Dimension VALUES (12, '25','50','90') ; INSERT INTO Dimension VALUES (13, '26','50','90') ; INSERT INTO Dimension VALUES (14, '25','60','75') ;

INSERT INTO Dimension VALUES (15, '25','45','50') ; INSERT INTO Dimension VALUES (16, '10','15','20') ; INSERT INTO Dimension VALUES (17, '10','14','25') ; INSERT INTO Dimension VALUES (18, '10','12','30') ; INSERT INTO Dimension VALUES (19, '10','12','25') ;

insert into AdressToDel(del\_adress\_id, adress\_country, adress\_city, adress\_street, adress\_number, date\_buy)

values (101, 'Russia', 'Moscow', 'Arbat square', '6573', '17.10.2020'),

(102, 'Russia', 'Moscow', 'Arbat square', '6573', '17.10.2020'),

(103, 'Germany', 'Berlin', 'Hauptstrabe', '9374', '30.08.2020'),

(104, 'Kazakhstan', 'Almaty', '6 microdistrict', '2643', '05.01.2020'),

(105, 'Poland', 'Warsaw', 'Senate Street', '8284', '23.06.2020'),

(106, 'UK', 'London', 'Adam’s Court', '1848', '17.03.2020'),

(107, 'America', 'California', 'Broad Street', '6384', '12.11.2020'),

(108, 'Kazakhstan', 'Astana', 'Abai', '5273', '15.02.2020'),

(109, 'Russia', 'Novosibirsk', 'Pushkin square', '3383', '29.04.2020'),

(110, 'America', 'New York', 'Carson Street', '9374', '08.10.2020')

INSERT INTO Warehouse VALUES (9991,1,1,1,1,1) ; INSERT INTO Warehouse VALUES (9992,2,2,2,2,2) ; INSERT INTO Warehouse VALUES (9993,3,3,3,3,3) ; INSERT INTO Warehouse VALUES (9994,4,4,4,4,4) ; INSERT INTO Warehouse VALUES (9995,5,5,5,5,5) ; INSERT INTO Warehouse VALUES (9996,6,6,6,6,6) ; INSERT INTO Warehouse VALUES (9997,7,7,7,7,7) ; INSERT INTO Warehouse VALUES (9998,8,8,8,8,8) ; INSERT INTO Warehouse VALUES (9999,9,9,9,9,9) ; INSERT INTO Warehouse VALUES (99910,10,10,10,10,10) ; INSERT INTO Warehouse VALUES (99911,11,11,11,11,11) ;

INSERT INTO Warehouse VALUES (99912,12,12,12,12,12) ; INSERT INTO Warehouse VALUES (99913,13,13,13,13,13) ; INSERT INTO Warehouse VALUES (99914,14,14,14,14,14) ; INSERT INTO Warehouse VALUES (99915,15,15,15,15,15) ; INSERT INTO Warehouse VALUES (99916,16,16,16,16,16) ; INSERT INTO Warehouse VALUES (99917,17,17,17,17,17) ; INSERT INTO Warehouse VALUES (99918,18,18,18,18,18) ; INSERT INTO Warehouse VALUES (99919,19,19,19,19,19) ;

INSERT INTO CASHBOX VALUES (3001,1,101,101) ; INSERT INTO CASHBOX VALUES (3002,15,102,102) ; INSERT INTO CASHBOX VALUES (3003,12,103,103) ; INSERT INTO CASHBOX VALUES (3004,13,104,104) ; INSERT INTO CASHBOX VALUES (3005,5,105,105) ; INSERT INTO CASHBOX VALUES (3006,9,106,106) ; INSERT INTO CASHBOX VALUES (3007,10,107,107) ; INSERT INTO CASHBOX VALUES (3008,8,108,108) ; INSERT INTO CASHBOX VALUES (3009,16,109,109) ; INSERT INTO CASHBOX VALUES (30010,19,110,110) ;

INSERT INTO CompanyDel VALUES (7771,'City Sprint','Aircraft','True') INSERT INTO CompanyDel VALUES (7772,'DPD','Aircraft','False') ; INSERT INTO CompanyDel VALUES (7773,'ParcelForce','Track','True') ; INSERT INTO CompanyDel VALUES (7774,'UPS','Aircraft','False') ; INSERT INTO CompanyDel VALUES (7775,'UPS','Track','False') ;

INSERT INTO CompanyDel VALUES (7776,'DPD','Aircraft','False') ; INSERT INTO CompanyDel VALUES (7777,'ParcelForce','Train','True') ; INSERT INTO CompanyDel VALUES (7778,'Yodel','Aircraft','False') ; INSERT INTO CompanyDel VALUES (7779,'DPD','Aircraft','False') ; INSERT INTO CompanyDel VALUES (77710,'ParcelForce','Track','True') ;

INSERT INTO Del\_Order VALUES (251,101,7771) ; INSERT INTO Del\_Order VALUES (252,102,7772) ; INSERT INTO Del\_Order VALUES (253,103,7773) ; INSERT INTO Del\_Order VALUES (254,104,7774) ; INSERT INTO Del\_Order VALUES (255,105,7775) ; INSERT INTO Del\_Order VALUES (256,106,7776) ; INSERT INTO Del\_Order VALUES (257,107,7777) ; INSERT INTO Del\_Order VALUES (258,108,7778) ; INSERT INTO Del\_Order VALUES (259,109,7779) ; INSERT INTO Del\_Order VALUES (260,110,77710) ;

UPDATE Furniture

SET color = 'Yellow Blue Dragon', price = '899' WHERE fur\_id = 1;

UPDATE CompanyDel SET status\_del = 'False'

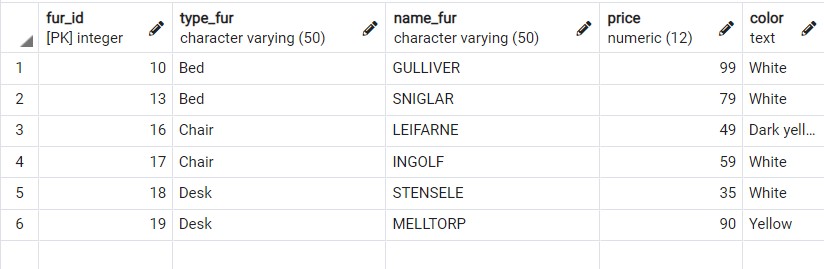
WHERE del\_company\_id = 1;

DELETE FROM WAREhouse WHERE fur\_id =17 ;

DELETE FROM Furniture WHERE fur\_id = 17;

6.Write at least 10 queries: using DISTINCT, conditions (,=), OR, AND, BETWEEN, IN, LIKE, LENGHT, COUNT, MAX, MIN, SUM, AVG, INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN and etc. The queries should be coherent and complex.

1. SELECT \* FROM Furniture WHERE price < '100';



1. SELECT name\_fur, price, dim\_length FROM Furniture

INNER JOIN Dimension ON fur\_id = dim\_id WHERE price > '140' AND dim\_length > '75' ;



1. SELECT name\_fur, price, color, dim\_length, company\_place FROM Furniture

INNER JOIN Dimension ON fur\_id = dim\_id

INNER JOIN Furniture\_creator ON dim\_id = creator\_id WHERE company\_place = 'USA' OR company\_place = 'MO' AND dim\_length BETWEEN '90' AND '25' ;



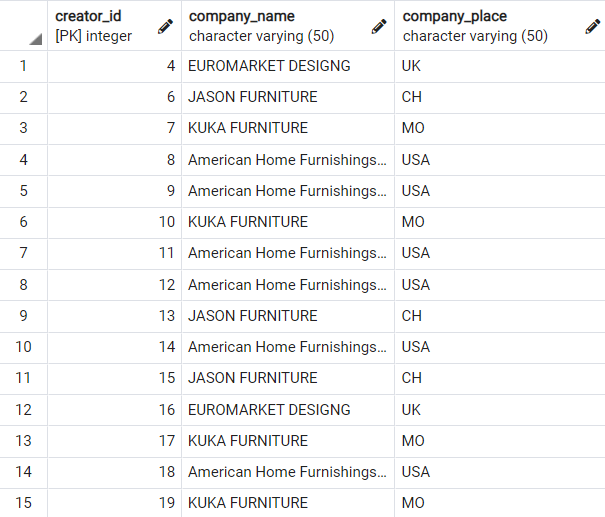
1. SELECT \* FROM Furniture\_creator

WHERE company\_place IN ('USA', 'CH') AND creator\_id <= '12'



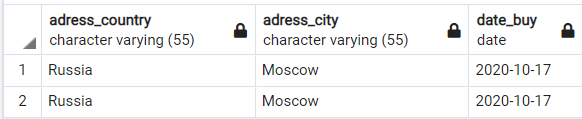
1. SELECT \* FROM Furniture\_creator

WHERE company\_place NOT IN ('USA') OR creator\_id > '5'



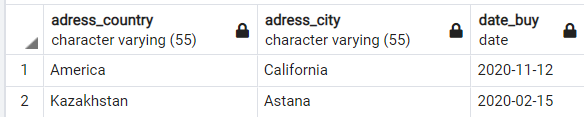
1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

WHERE adress\_city LIKE 'M%'; --Finds any values that start with 'M'



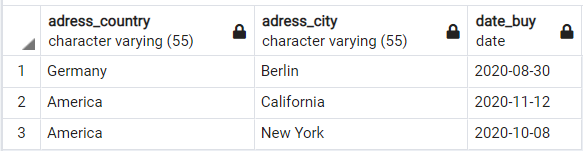
1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

WHERE adress\_city LIKE '%a'; --Finds any values that end with "a"



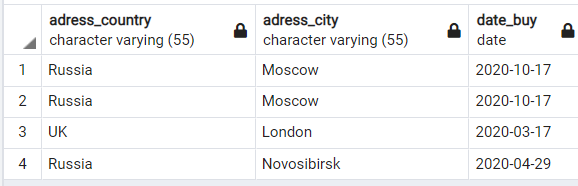
1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

WHERE adress\_country LIKE '%er%'; --Finds any values that have "er" in any position



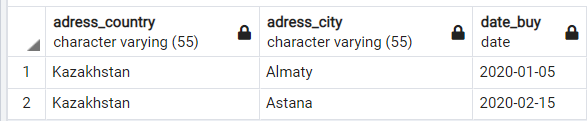
1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

WHERE adress\_city LIKE '\_o%'; --Finds any values that have "o" in the second position



1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

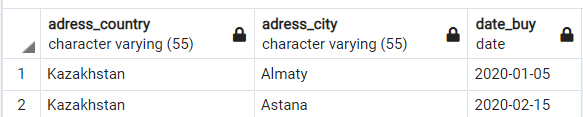
WHERE adress\_city LIKE 'A\_%'; --Finds any values that start with "A" and are at least 2 characters in length



1. SELECT adress\_country, adress\_city, date\_buy

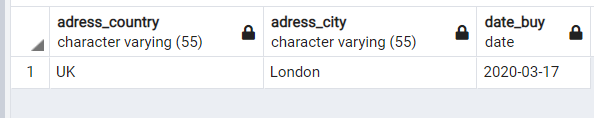
FROM AdressToDel

WHERE adress\_city LIKE 'A %'; --Finds any values that start with "A" and are at least 3 characters in length

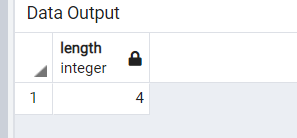


1. SELECT adress\_country, adress\_city, date\_buy FROM AdressToDel

WHERE adress\_city LIKE 'L%n'; --Finds any values that start with "L" and ends with "n"



1. SELECT Length (adress\_street) FROM AdressToDel WHERE adress\_street = 'Abai';



1. SELECT firstname,lastname, Customer.cus\_id, name\_fur ,CASHBOX.cus\_id, CASHBOX.fur\_id, Furniture.fur\_id

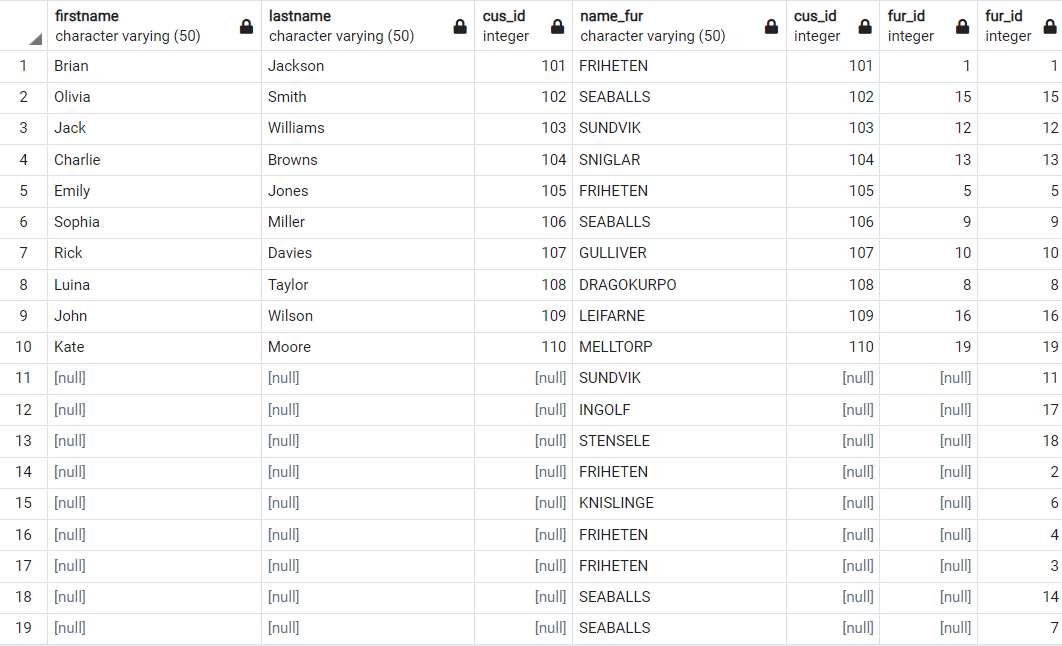
FROM Furniture

FULL JOIN CASHBOX ON Furniture.fur\_id = CASHBOX.fur\_id RIGHT JOIN Customer ON CASHBOX.cus\_id = Customer.cus\_id ;



1. SELECT firstname,lastname, Customer.cus\_id, name\_fur ,CASHBOX.cus\_id, CASHBOX.fur\_id, Furniture.fur\_id

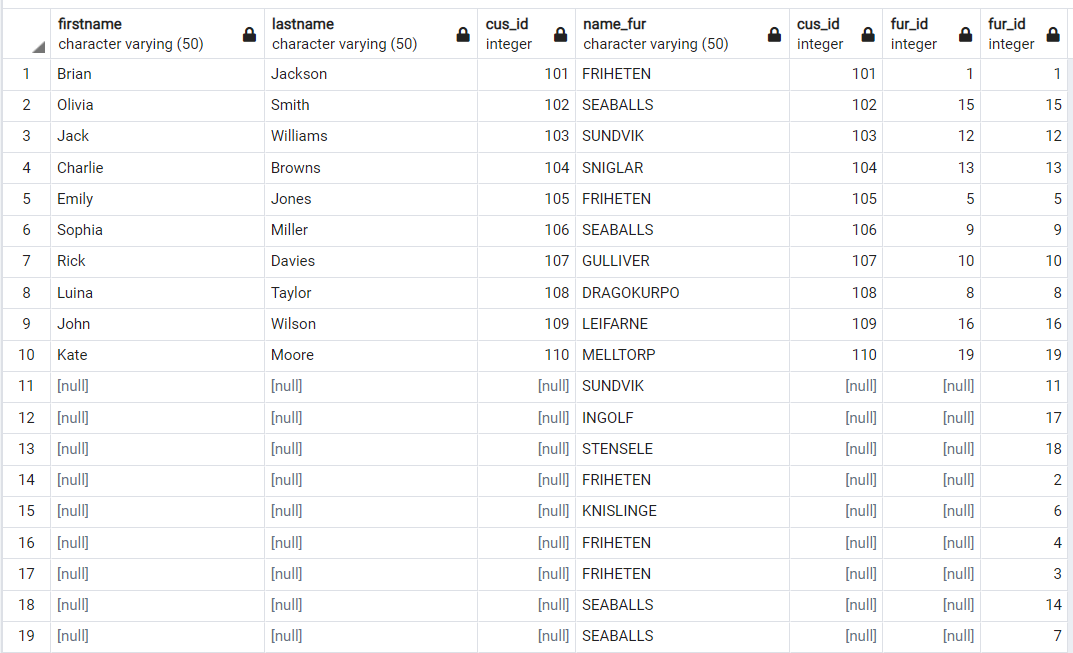
FROM Furniture

FULL JOIN CASHBOX ON Furniture.fur\_id = CASHBOX.fur\_id Left JOIN Customer ON CASHBOX.cus\_id = Customer.cus\_id ;

1. SELECT firstname,lastname, Customer.cus\_id, name\_fur ,CASHBOX.cus\_id, CASHBOX.fur\_id

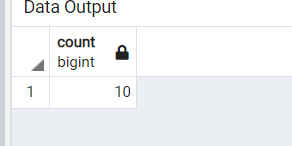
FROM Customer

FULL JOIN CASHBOX ON Customer.cus\_id = CASHBOX.cus\_id right JOIN Furniture ON CASHBOX.fur\_id = Furniture.fur\_id ;



1. SELECT COUNT (firstname) FROM Customer

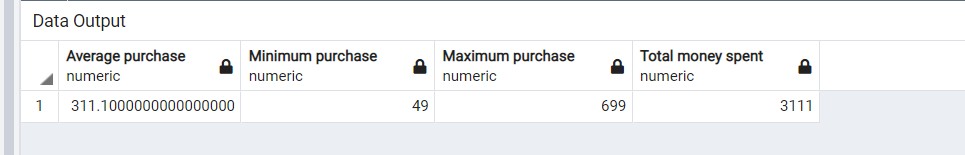
INNER JOIN Cashbox ON Customer.cus\_id = Cashbox.cus\_id RIGHT JOIN Furniture ON Cashbox.fur\_id = Furniture.fur\_id;



1. SELECT AVG(price) AS "Average purchase", MIN(price) AS "Minimum purchase", MAX(price) AS "Maximum purchase",

SUM(price) AS "Total money spent" FROM Customer

INNER JOIN Cashbox ON Customer.cus\_id = Cashbox.cus\_id Left JOIN Furniture ON Cashbox.fur\_id = Furniture.fur\_id ;



7.Write at least 5 subqueries: single-row, multiple-row and multiple-column subqueries, and etc.;

1. -- single row

SELECT firstname,lastname FROM Customer

WHERE cus\_id = (SELECT cus\_id FROM Customer WHERE firstname = 'Rick');

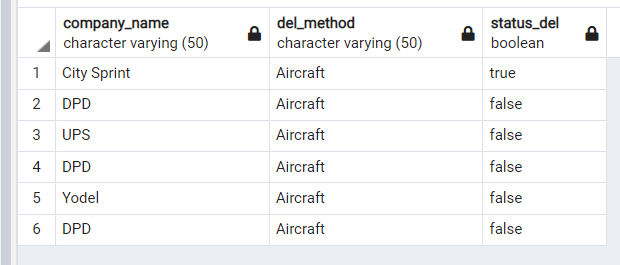


1. -- multiple row

SELECT company\_name, del\_method, status\_del FROM CompanyDel

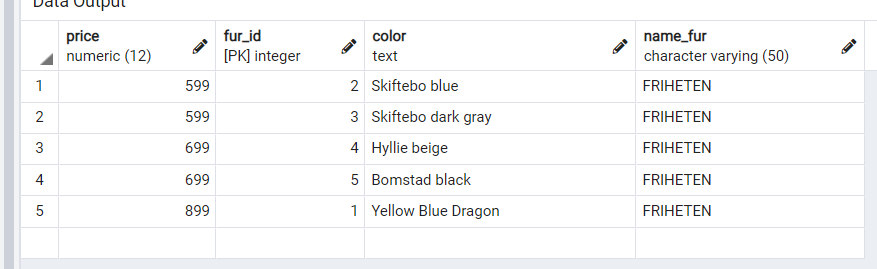
WHERE del\_company\_id IN (SELECT del\_company\_id FROM Del\_Order WHERE del\_method

= 'Aircraft');



1. ---Multiple Column Subqueries

SELECT price, fur\_id, color, name\_fur FROM Furniture WHERE (fur\_id,price) IN (SELECT fur\_id,price FROM Furniture WHERE name\_fur = 'FRIHETEN');



1. --Multiple Column Subqueries

SELECT date\_buy, del\_adress\_id, adress\_country, adress\_number

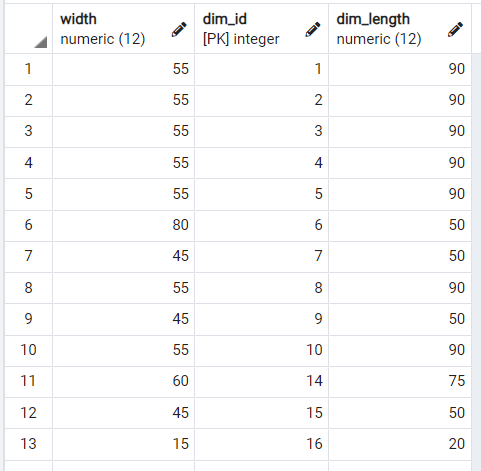
FROM AdressToDel WHERE (del\_adress\_id,date\_buy) IN (SELECT del\_adress\_id,date\_buy FROM AdressToDel WHERE date\_buy = '2020-10-17');



1. – Multiple Row Subqueries

SELECT width, dim\_id,dim\_length FROM Dimension

WHERE dim\_id IN (SELECT dim\_id FROM Dimension WHERE width > '14' AND width <> '50');



6)-- Multiple Column Subqueries

SELECT price, fur\_id, color, name\_fur

FROM Furniture

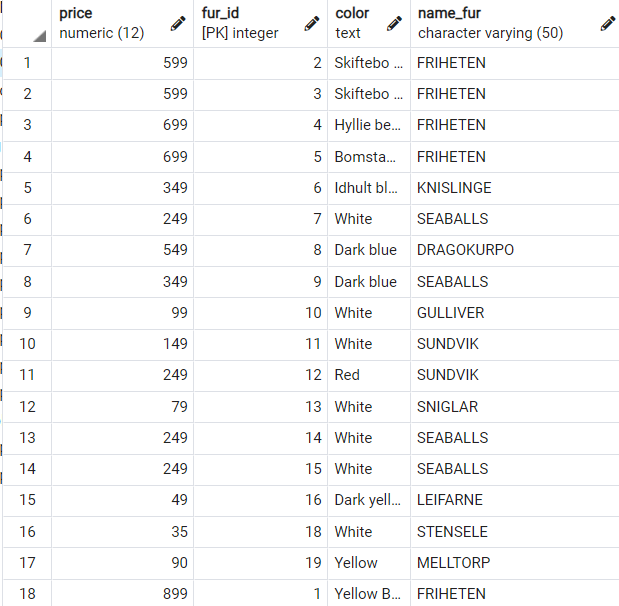
WHERE (fur\_id,price)

IN

(SELECT fur\_id,price

FROM Furniture GROUP BY fur\_id

);

****

**References:**

1. <https://www.ikea.com/us/en/cat/all-sofas-39130/>

* To keep all prices real for sofas.

1. <https://www.bassettfurniture.com/blog/different-types-of-furniture.aspx>
2. https://en.wikipedia.org/wiki/List\_of\_furniture\_types

* Studied all styles for furniture.