Assignment 4

1.List all customers and the products they ordered with the order date.(Inner join)

```sql
select c.company_name as customers, o.order_id, p.product_name, od.quantity, o.order_date
from customers c
inner join orders o  on c.customer_id = o.customer_id
inner join order_details od on o.order_id = od.order_id
inner join products p on od.product_id = p.product_id;
```

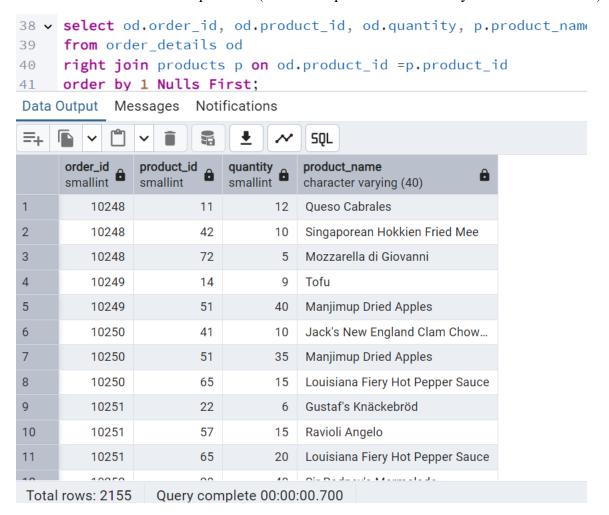|	customers character varying (40)	order_id smallint	product_name character varying (40)	quantity smallint	order_date date
1	Vins et alcools Chevalier	10248	Queso Cabrales	12	1996-07-04
2	Vins et alcools Chevalier	10248	Singaporean Hokkien Fried Mee	10	1996-07-04
3	Vins et alcools Chevalier	10248	Mozzarella di Giovanni	5	1996-07-04
4	Toms Spezialitäten	10249	Tofu	9	1996-07-05
5	Toms Spezialitäten	10249	Manjimup Dried Apples	40	1996-07-05
6	Hanari Carnes	10250	Jack's New England Clam Chow...	10	1996-07-08
7	Hanari Carnes	10250	Manjimup Dried Apples	35	1996-07-08
8	Hanari Carnes	10250	Louisiana Fiery Hot Pepper Sauce	15	1996-07-08
9	Victuailles en stock	10251	Gustaf's Knäckebröd	6	1996-07-08
10	Victuailles en stock	10251	Ravioli Angelo	15	1996-07-08
11	Victuailles en stock	10251	Louisiana Fiery Hot Pepper Sauce	20	1996-07-08

Total rows: 2155   Query complete 00:00:00.167

2.Show each order with customer, employee, shipper, and product info — even if some parts are missing. (Left Join)

```sql
select o.order_id,
c.company_name as customer,
concat(e.first_name, ' ', e.last_name) as employee_name,
s.company_name as shipper, p.product_name
from products p
left join order_details od on p.product_id = od.product_id
left join orders o on od.order_id = o.order_id
left join customers c on o.customer_id = c.customer_id
left join employees e on o.employee_id = e.employee_id
left join shippers s on o.ship_via = s.shipper_id;

select o.order_id, c.company_name as customer,
concat(e.first_name, ' ', e.last_name) as employee_name,
s.company_name as shipper, p.product_name
from orders o
left join customers c on o.customer_id = c.customer_id
left join employees e on o.employee_id = e.employee_id
left join shippers s on o.ship_via = s.shipper_id
left join order_details od on o.order_id = od.order_id
left join products p on od.product_id = p.product_id
order by 1 Nulls First;
```
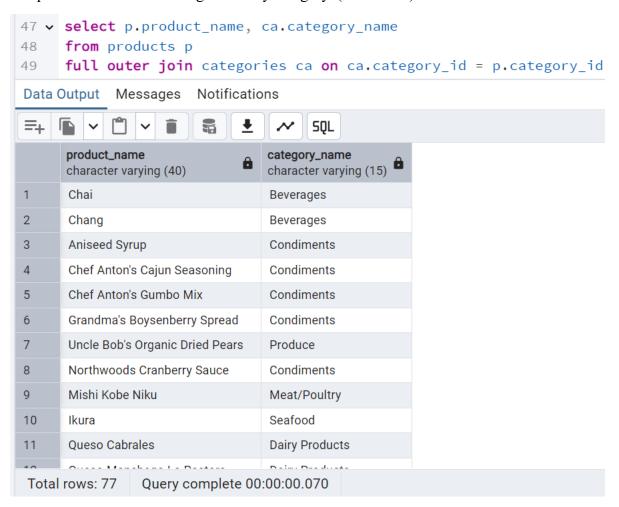
	order_id smallint	customer character varying (40)	employee_name text	shipper character varying (40)	product_name character varying (40)
1	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Queso Cabrales
2	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Singaporean Hokkien Fried Mee
3	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Mozzarella di Giovanni
4	10249	Toms Spezialitäten	Michael Suyama	Speedy Express	Tofu
5	10249	Toms Spezialitäten	Michael Suyama	Speedy Express	Manjimup Dried Apples
6	10250	Hanari Carnes	Margaret Peacock	United Package	Jack's New England Clam Chow…
7	10250	Hanari Carnes	Margaret Peacock	United Package	Manjimup Dried Apples
8	10250	Hanari Carnes	Margaret Peacock	United Package	Louisiana Fiery Hot Pepper Sauce
9	10251	Victuailles en stock	Janet Leverling	Speedy Express	Gustaf's Knäckebröd
10	10251	Victuailles en stock	Janet Leverling	Speedy Express	Ravioli Angelo
11	10251	Victuailles en stock	Janet Leverling	Speedy Express	Louisiana Fiery Hot Pepper Sauce

Total rows: 2155   Query complete 00:00:00.189

3.Show all order details and products (include all products even if they were never ordered). (Right Join)

```
38 ∨  select od.order_id, od.product_id, od.quantity, p.product_name
39     from order_details od
40     right join products p on od.product_id =p.product_id
41     order by 1 Nulls First;
```

	order_id smallint	product_id smallint	quantity smallint	product_name character varying (40)
1	10248	11	12	Queso Cabrales
2	10248	42	10	Singaporean Hokkien Fried Mee
3	10248	72	5	Mozzarella di Giovanni
4	10249	14	9	Tofu
5	10249	51	40	Manjimup Dried Apples
6	10250	41	10	Jack's New England Clam Chow…
7	10250	51	35	Manjimup Dried Apples
8	10250	65	15	Louisiana Fiery Hot Pepper Sauce
9	10251	22	6	Gustaf's Knäckebröd
10	10251	57	15	Ravioli Angelo
11	10251	65	20	Louisiana Fiery Hot Pepper Sauce

Total rows: 2155   Query complete 00:00:00.700

4.List all product categories and their products including categories that have no products, and products that are not assigned to any category. (Outer Join)

```
47 ✓  select p.product_name, ca.category_name
48     from products p
49     full outer join categories ca on ca.category_id = p.category_id
```

Data Output Messages Notifications

	product_name character varying (40)	category_name character varying (15)
1	Chai	Beverages
2	Chang	Beverages
3	Aniseed Syrup	Condiments
4	Chef Anton's Cajun Seasoning	Condiments
5	Chef Anton's Gumbo Mix	Condiments
6	Grandma's Boysenberry Spread	Condiments
7	Uncle Bob's Organic Dried Pears	Produce
8	Northwoods Cranberry Sauce	Condiments
9	Mishi Kobe Niku	Meat/Poultry
10	Ikura	Seafood
11	Queso Cabrales	Dairy Products

Total rows: 77   Query complete 00:00:00.070

5.Show all possible product and category combinations (Cross join).

```
54 ✓  select p.product_name, ca.category_name
55     from products p
56     cross join categories ca;
```

Data Output Messages Notifications

	product_name character varying (40)	category_name character varying (15)
1	Chai	Beverages
2	Chai	Condiments
3	Chai	Confections
4	Chai	Dairy Products
5	Chai	Grains/Cereals
6	Chai	Meat/Poultry
7	Chai	Produce
8	Chai	Seafood
9	Chang	Beverages
10	Chang	Condiments
11	Chang	Confections

Total rows: 616   Query complete 00:00:00.123

6.Show all employees who have the same manager(Self join).

```
61 v  select concat(E1.first_name, ' ' , E1.last_name) as employee_name,
62            concat(E2.first_name, ' ' , E2.last_name) as manager_name
63            from employees E1
64            inner join employees E2 on E1.reports_to =E2.employee_id
65            where E1.employee_id!= E2.employee_id;
```

Data Output   Messages   Notifications

	employee_name text	manager_name text
1	Nancy Davolio	Andrew Fuller
2	Janet Leverling	Andrew Fuller
3	Margaret Peacock	Andrew Fuller
4	Steven Buchanan	Andrew Fuller
5	Michael Suyama	Steven Buchanan
6	Robert King	Steven Buchanan
7	Laura Callahan	Andrew Fuller
8	Anne Dodsworth	Steven Buchanan

7.List all customers who have not selected a shipping method.

```
70 v  select cu.customer_id, cu.company_name as Customers, o.order_id, o.ship_via
71     from customers cu
72     left join orders o on cu.customer_id = o.customer_id
73     where o.ship_via is Null;
```

Data Output   Messages   Notifications

	customer_id character varying (5)	customers character varying (40)	order_id smallint	ship_via smallint
1	PARIS	Paris spécialités	[null]	[null]
2	FISSA	FISSA Fabrica Inter. Salchichas S.A.	[null]	[null]