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

Tables used: customers, orders, order_details, products
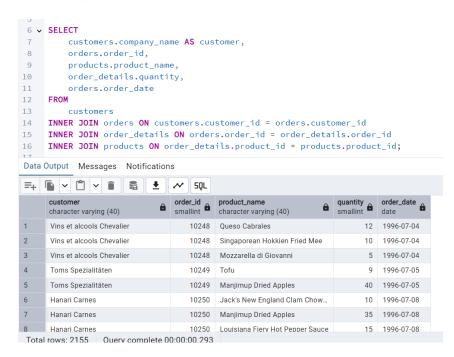
Output should have below columns:
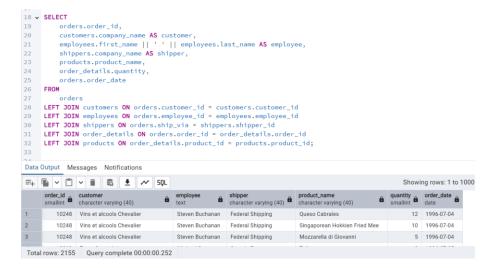
companyname AS customer,

orderid,

productname,

quantity, orderdate

```
  6 ∨ SELECT
  7        customers.company_name AS customer,
  8        orders.order_id,
  9        products.product_name,
 10        order_details.quantity,
 11        orders.order_date
 12     FROM
 13        customers
 14     INNER JOIN orders ON customers.customer_id = orders.customer_id
 15     INNER JOIN order_details ON orders.order_id = order_details.order_id
 16     INNER JOIN products ON order_details.product_id = products.product_id;
 17
```

Data Output   Messages   Notifications

	customer 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

Total rows: 2155   Query complete 00:00:00.293

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

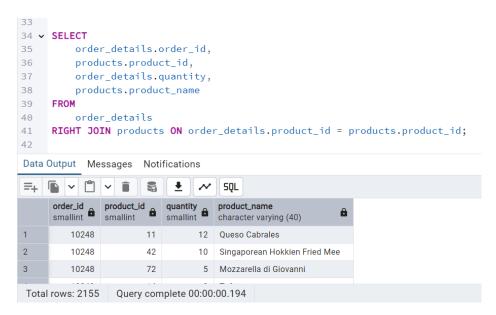**Tables used: orders, customers, employees, shippers, order_details, products**

```
18  v  SELECT
19         orders.order_id,
20         customers.company_name AS customer,
21         employees.first_name || ' ' || employees.last_name AS employee,
22         shippers.company_name AS shipper,
23         products.product_name,
24         order_details.quantity,
25         orders.order_date
26     FROM
27         orders
28     LEFT JOIN customers ON orders.customer_id = customers.customer_id
29     LEFT JOIN employees ON orders.employee_id = employees.employee_id
30     LEFT JOIN shippers ON orders.ship_via = shippers.shipper_id
31     LEFT JOIN order_details ON orders.order_id = order_details.order_id
32     LEFT JOIN products ON order_details.product_id = products.product_id;
33
```

Data Output   Messages   Notifications

Showing rows: 1 to 1000

order_id smallint	customer character varying (40)	employee text	shipper character varying (40)	product_name character varying (40)	quantity smallint	order_date date
1	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Queso Cabrales	12	1996-07-04
2	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Singaporean Hokkien Fried Mee	10	1996-07-04
3	10248	Vins et alcools Chevalier	Steven Buchanan	Federal Shipping	Mozzarella di Giovanni	5	1996-07-04

Total rows: 2155   Query complete 00:00:00.252

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

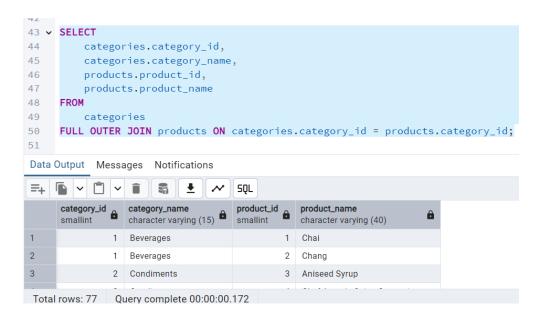**Tables used: order_details, products**

Output should have below columns:

orderid,

productid,

quantity,

productname

```
33
34  v  SELECT
35         order_details.order_id,
36         products.product_id,
37         order_details.quantity,
38         products.product_name
39     FROM
40         order_details
41     RIGHT JOIN products ON order_details.product_id = products.product_id;
42
```

Data Output   Messages   Notifications

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

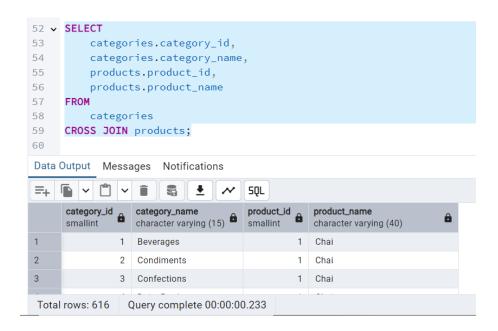Total rows: 2155   Query complete 00:00:00.194

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)
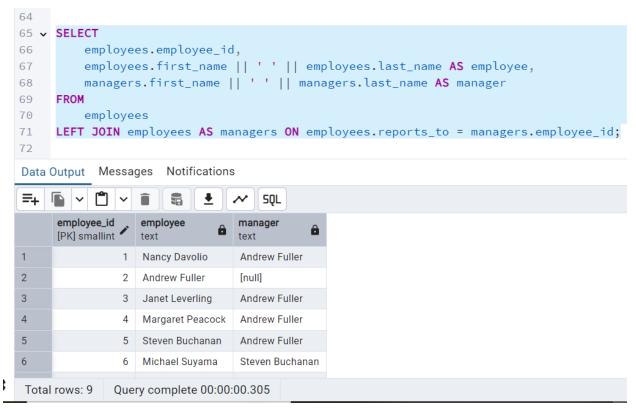
Tables used: categories, products

```
42
43 ∨ SELECT
44        categories.category_id,
45        categories.category_name,
46        products.product_id,
47        products.product_name
48    FROM
49        categories
50    FULL OUTER JOIN products ON categories.category_id = products.category_id;
51
```

Data Output   Messages   Notifications

category_id smallint	category_name character varying (15)	product_id smallint	product_name character varying (40)
1	1 Beverages	1	Chai
2	1 Beverages	2	Chang
3	2 Condiments	3	Aniseed Syrup

Total rows: 77   Query complete 00:00:00.172

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

```
52 ∨ SELECT
53        categories.category_id,
54        categories.category_name,
55        products.product_id,
56        products.product_name
57    FROM
58        categories
59    CROSS JOIN products;
60
```

Data Output   Messages   Notifications

category_id smallint	category_name character varying (15)	product_id smallint	product_name character varying (40)
1	1 Beverages	1	Chai
2	2 Condiments	1	Chai
3	3 Confections	1	Chai

Total rows: 616   Query complete 00:00:00.233

6.   Show all employees and their manager(Self join(left join))

```
64
65 ∨ SELECT
66       employees.employee_id,
67       employees.first_name || ' ' || employees.last_name AS employee,
68       managers.first_name || ' ' || managers.last_name AS manager
69   FROM
70       employees
71   LEFT JOIN employees AS managers ON employees.reports_to = managers.employee_id;
72
```

Data Output   Messages   Notifications

employee_id [PK] smallint	employee text	manager text
1	1	Nancy Davolio	Andrew Fuller
2	2	Andrew Fuller	[null]
3	3	Janet Leverling	Andrew Fuller
4	4	Margaret Peacock	Andrew Fuller
5	5	Steven Buchanan	Andrew Fuller
6	6	Michael Suyama	Steven Buchanan

Total rows: 9   Query complete 00:00:00.305

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

Tables used: customers, orders

(Left Join, WHERE o.shipvia IS NULL)

```
72
73  ∨  SELECT
74        customers.customer_id,
75        customers.company_name AS customer,
76        o.order_id
77     FROM
78        customers
79     LEFT JOIN orders AS o ON customers.customer_id = o.customer_id
80     WHERE
81        o.ship_via IS NULL;
82
83
84
```

Data Output   Messages   Notifications

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

Total rows: 2   Query complete 00:00:00.111