FDT Worksheet Week 3

GROUP BY and window functions

1. Northwind: **Show how many employees live in each city (group employees by city)**

```
SELECT city, COUNT(*)
FROM employees
GROUP BY city
```

2. Northwind: **Show how many products are contained in each order**

```
SELECT orderid, COUNT(*) AS num_products
FROM order_details
GROUP BY orderid
```

3. Northwind: **Show how many products are contained in each order (largest orders first)**

```
SELECT orderid, COUNT(*) AS num_products
FROM order_details
GROUP BY orderid
ORDER BY num_products DESC
```

4. Dvdrental: **Show customers, sorted according to their rental counts.**

```
SELECT first_name, last_name,
COUNT(rental.rental_id) as rental_count
FROM
customer INNER JOIN rental
ON customer.customer_id = rental.customer_id
GROUP BY first_name, last_name
ORDER BY rental_count DESC
```

5. Dvdrental: **Find the number of rentals performed by each member of staff.**

```
SELECT staff.first_name, COUNT(*)
FROM
rental INNER JOIN staff
ON rental.staff_id = staff.staff_id
GROUP BY staff.staff_id
```

6. Dvdrental: **Which films were rented most?**

```
SELECT title, COUNT(*) AS rental_count
FROM
film INNER JOIN inventory
ON film.film_id = inventory.film_id
INNER JOIN rental
ON inventory.inventory_id = rental.inventory_id
GROUP BY film.film_id
ORDER BY rental_count DESC
```

7. Northwind: **Which employees processed the most orders?**

```
SELECT firstname, lastname, COUNT(*) AS order_count FROM
orders INNER JOIN employees
ON orders.employeeid = employees.employeeid
GROUP BY employees.employeeid
```

```
ORDER BY order_count DESC
```

8. Northwind: **Which customers ordered from the largest range of suppliers?**
Show the number of orders each customer made, and the number of different suppliers they ordered from.

```
SELECT customers.contactname, COUNT(DISTINCT orders.orderid) AS order_count, COUNT(DISTINCT suppliers.supplierid) AS supplier_count
FROM
customers INNER JOIN orders
ON customers.customerid = orders.customerid
INNER JOIN order_details
ON orders.orderid = order_details.orderid
INNER JOIN products
ON order_details.productid = products.productid
INNER JOIN suppliers
ON products.supplierid = suppliers.supplierid
GROUP BY customers.contactname
ORDER BY order_count DESC
```

9. Dvdrental: **Find the number of films each actor has played a role in.**

```
SELECT first_name, last_name, COUNT(*) as film_count
FROM
actor INNER JOIN film_actor
ON actor.actor_id = film_actor.actor_id
INNER JOIN film
ON film_actor.film_id = film.film_id
GROUP BY actor.actor_id
ORDER BY film_count DESC
```

10. Dvdrental: **Find the number of films each actor has played a role in.**
Return the full name in one column, sorted alphabetically by last name.

```
SELECT first_name || ' ' || last_name as actor_full_name, COUNT(*) as film_count
FROM
actor INNER JOIN film_actor
ON actor.actor_id = film_actor.actor_id
INNER JOIN film
ON film_actor.film_id = film.film_id
GROUP BY actor.actor_id
ORDER BY last_name ASC
```

11. Dvdrental: **Find the number of customers in each country.**

```
SELECT country, COUNT(*)
FROM
customer INNER JOIN address
ON customer.address_id = address.address_id
INNER JOIN city
ON address.city_id = city.city_id
INNER JOIN country
ON city.country_id = country.country_id
GROUP BY country
ORDER BY count DESC
```

12. Northwind: **Which employees processed the most orders?**
Show only employees who processed more than 100 orders.

```
SELECT firstname, lastname, COUNT(*) AS order_count FROM
orders INNER JOIN employees
ON orders.employeeid = employees.employeeid
GROUP BY employees.employeeid
HAVING COUNT(*) > 100
ORDER BY order_count DESC
```

13. Dvdrental: **Which films were rented most?**
Show only films with less than 10 rentals

```
SELECT title, COUNT(*) AS rental_count
FROM
film INNER JOIN inventory
ON film.film_id = inventory.film_id
INNER JOIN rental
ON inventory.inventory_id = rental.inventory_id
GROUP BY film.film_id
HAVING COUNT(*) < 10
ORDER BY rental_count DESC
```

14. Northwind: **Show orders and shipping methods, along with the average freight weight for that shipping method.**
shipvia: shipping method code
freight: freight weight

```
SELECT orderid, shipvia,
AVG(freight) OVER (PARTITION BY shipvia) AS mean_freight FROM orders
```

15. Northwind: **Show product names. Each row should show the product name, its category name, and the total number of products in that category.**

```
SELECT productname, categories.categoryname,
COUNT(productid) OVER (PARTITION BY products.categoryid)
AS n_products_in_category
FROM
products INNER JOIN categories
ON products.categoryid = categories.categoryid
```

16. Dvdrental: **Show Eleanor Hunt's rental history, with cumulative total of how much she has paid.**

```
SELECT first_name, last_name, rental_date, amount,
SUM(amount) OVER(ORDER BY rental_date)
AS cumulative_amount
FROM
customer INNER JOIN rental
ON customer.customer_id = rental.customer_id
INNER JOIN payment
ON rental.rental_id = payment.rental_id
WHERE first_name='Eleanor' AND last_name='Hunt'
```