

1. GROUP BY with Aggregate Functions:

```
``sql
-- Find the total order amount for each customer
SELECT customer_id, SUM(order_amount) AS total_amount
FROM Orders
GROUP BY customer_id;

-- Calculate the average salary for each department
SELECT department_id, AVG(salary) AS avg_salary
FROM Employees
GROUP BY department_id;
``
```

2. HAVING Clause:

```
``sql
-- Find departments with average salary greater than $50,000
SELECT department_id, AVG(salary) AS avg_salary
FROM Employees
GROUP BY department_id
HAVING AVG(salary) > 50000;

-- List customers who have placed more than 3 orders
SELECT customer_id, COUNT(order_id) AS order_count
FROM Orders
GROUP BY customer_id
HAVING order_count > 3;
``
```

3. Combining GROUP BY and HAVING:

```
```sql
```

```
-- Find departments with more than 2 employees and an average salary greater than $60,000
```

```
SELECT department_id, AVG(salary) AS avg_salary, COUNT(employee_id) AS employee_count
```

```
FROM Employees
```

```
GROUP BY department_id
```

```
HAVING employee_count > 2 AND avg_salary > 60000;
```

```
-- Retrieve products with more than 50 units in stock and an average price greater than $50
```

```
SELECT product_id, AVG(price) AS avg_price, SUM(units_in_stock) AS total_units
```

```
FROM Products
```

```
GROUP BY product_id
```

```
HAVING total_units > 50 AND avg_price > 50;
```

```
```
```