**Day4**

**Using Aggregate Functions**

1. Which SQL function returns the total sum of a numeric column?
   * A) COUNT()
   * B) SUM()
   * C) AVG()
   * D) MAX()
2. What does the COUNT() function do in SQL?
   * A) Sums up the values of a column
   * B) Returns the average value
   * C) Counts the number of rows
   * D) Finds the maximum value
3. Which SQL function returns the average value of a numeric column?
   * A) COUNT()
   * B) SUM()
   * C) AVG()
   * D) MAX()
4. What does the MAX() function return in SQL?
   * A) The minimum value in a column
   * B) The maximum value in a column
   * C) The average value in a column
   * D) The sum of values in a column
5. Which SQL function returns the smallest value in a column?
   * A) MIN()
   * B) MAX()
   * C) AVG()
   * D) SUM()

**Using the GROUP BY Clause**

1. What is the purpose of the GROUP BY clause in SQL?
   * A) To filter rows based on a condition
   * B) To sort the result set
   * C) To group rows that have the same values in specified columns
   * D) To join multiple tables
2. How do you use the GROUP BY clause to group rows by a column named "Department"?
   * A) SELECT \* FROM Employees GROUP Department;
   * B) SELECT \* FROM Employees BY Department;
   * C) SELECT \* FROM Employees GROUP BY Department;
   * D) SELECT \* FROM Employees WHERE GROUP Department;
3. Which of the following is a correct example of using GROUP BY with an aggregate function?
   * A) SELECT Department, COUNT(\*) FROM Employees;
   * B) SELECT Department, COUNT(\*) FROM Employees GROUP BY Department;
   * C) SELECT Department, COUNT(\*) FROM Employees WHERE Department;
   * D) SELECT COUNT(\*) FROM Employees GROUP BY Department;
4. Can the GROUP BY clause be used with multiple columns?
   * A) Yes
   * B) No

**Filtering Groups with HAVING**

1. What is the HAVING clause used for in SQL?
   * A) To filter rows before grouping
   * B) To filter groups based on a condition
   * C) To sort the result set
   * D) To join multiple tables
2. Which SQL statement correctly uses the HAVING clause?
   * A) SELECT Department, COUNT(\*) FROM Employees GROUP BY Department HAVING COUNT(\*) > 10;
   * B) SELECT Department, COUNT(\*) FROM Employees HAVING COUNT(\*) > 10 GROUP BY Department;
   * C) SELECT Department, COUNT(\*) FROM Employees WHERE HAVING COUNT(\*) > 10;
   * D) SELECT Department, COUNT(\*) HAVING COUNT(\*) > 10 FROM Employees GROUP BY Department;
3. How does HAVING differ from WHERE in SQL?
   * A) HAVING filters groups, WHERE filters rows
   * B) WHERE filters groups, HAVING filters rows
   * C) Both HAVING and WHERE filter rows
   * D) Both HAVING and WHERE filter groups
4. Can the HAVING clause be used without a GROUP BY clause?
   * A) Yes
   * B) No

**Using Aggregate Functions**

1. Which SQL aggregate function calculates the number of unique values in a column?
   * A) COUNT(\*)
   * B) COUNT(DISTINCT column\_name)
   * C) SUM(column\_name)
   * D) AVG(DISTINCT column\_name)
2. What does the AVG() function return when used on a column with NULL values?
   * A) NULL
   * B) The average of all non-NULL values
   * C) Zero
   * D) An error

**Using the GROUP BY Clause**

1. Which of the following queries correctly groups data by two columns?
   * A) SELECT Department, Gender, COUNT(\*) FROM Employees GROUP Department, Gender;
   * B) SELECT Department, Gender, COUNT(\*) FROM Employees GROUP BY Department, Gender;
   * C) SELECT Department, Gender, COUNT(\*) FROM Employees BY Department, Gender;
   * D) SELECT Department, Gender, COUNT(\*) FROM Employees WHERE GROUP Department, Gender;
2. What will the following SQL query return: SELECT Department, AVG(Salary) FROM Employees GROUP BY Department;?
   * A) The average salary of all employees
   * B) The total salary of each department
   * C) The average salary for each department
   * D) The highest salary in each department

**Filtering Groups with HAVING**

1. How do you filter groups with a sum greater than 5000 in SQL?
   * A) SELECT Department, SUM(Salary) FROM Employees GROUP BY Department HAVING SUM(Salary) > 5000;
   * B) SELECT Department, SUM(Salary) FROM Employees HAVING SUM(Salary) > 5000;
   * C) SELECT Department, SUM(Salary) FROM Employees WHERE HAVING SUM(Salary) > 5000;
   * D) SELECT Department, SUM(Salary) HAVING SUM(Salary) > 5000 FROM Employees GROUP BY Department;
2. Can HAVING be used with aggregate functions?
   * A) Yes
   * B) No
3. Which clause is evaluated first in a SQL query, WHERE or HAVING?
   * A) WHERE
   * B) HAVING