SQL ASSIGNMENT

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1. Table: `employees`

employee_id	name	age	department	salary	email	years_at_company
101	Alice	25	IT	50000	alice@gmail.com	2
102	Bob	35	HR	40000	bob@yahoo.com	6
103	Charlie	30	Finance	55000	NULL	4
104	Diana	40	IT	70000	diana@gmail.com	10
105	Evan	29	Sales	45000	evan@outlook.com	3
106	Fiona	22	IT	65000	fiona@gmail.com	1
107	George	45	Marketing	48000	george@gmail.com	12
108	Hannah	28	HR	47000	hannah@yahoo.com	5

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2. Table: `sales`

product_id	product_name	total_sales
201	Laptop	150
202	Smartphone	300
203	Headphones	200
204	Monitor	100
205	Keyboard	50

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3. Table: `user_logs`

user_id	last_login	activity_status
301	2024-11-01	Active
302	2024-09-25	Inactive
303	2024-11-05	Active
304	2024-10-01	Inactive
305	2024-11-03	Active

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4. Table: `customers`

customer_id	name	region
401	John Doe	North
402	Jane Smith	South
403	Emily Johnson	East
404	Michael Brown	West
405	Sarah Davis	North

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5. Table: `orders`

order_id	customer_id	product_id	order_date	shipped_date	delivery_date
501	401	202	2024-10-01	2024-10-03	2024-10-05
502	402	203	2024-11-01	2024-11-02	2024-11-04
503	403	201	2024-10-20	2024-10-22	2024-10-21
504	401	204	2024-10-25	2024-10-28	2024-10-27
505	405	203	2024-11-03	2024-11-05	2024-11-06

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6. Table: `user_activity`

user_id	activity_status	last_login
301	Active	2024-11-01
302	Inactive	2024-09-25
303	Active	2024-11-05
304	Inactive	2024-10-01
305	Active	2024-11-03

How to Use This Dataset?

1. **Create a Database:** Name the database as **sql_practice_db**.
2. **Create Tables:** Inside **sql_practice_db** database, create all the **above** 6 Tables & insert the data.
3. **Run Queries:** Use the 6 tables to answer the below 30 questions provided.

30 SQL Questions

- **Basics**

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1. Write a query to retrieve all data from a table named `employees`.
2. Fetch the `name`, `age`, and `department` columns from the `employees` table.
3. Retrieve all employees whose age is greater than 30.
4. Find employees who work in the `IT` department **and** have a salary greater than 50000.
5. Get all employees who work in the `HR` department **or** are less than 25 years old.
6. Retrieve all employees who do **not** work in the `Finance` department.
7. Find employees whose names start with the letter 'A'.
8. Retrieve employees whose email addresses contain the domain `gmail.com`.
9. Fetch the names and salaries of employees sorted by salary in descending order.
10. Retrieve the top 5 highest-paid employees.
11. Count the total number of employees in the `employees` table.
12. Write a query to find the minimum and maximum salaries in the `employees` table.
13. Calculate the average salary of employees in each department.
14. Find all employees who work in the `IT` department **and** have a salary greater than 60000 **or** have been with the company for more than 5 years.
15. Increase the salary of all employees in the `Sales` department by 10%.
16. Update the department of an employee with `employee_id = 101` to `Marketing`.

- **Real-World Scenarios**

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17. Find all users who haven't logged in for more than 30 days from a `user_logs` table.
18. Write a query to fetch the top 3 products with the highest sales from a `sales` table.
19. Count the number of customers from each region in the `customers` table.
20. Retrieve all orders from the `orders` table where the `shipped_date` is later than the `delivery_date`.
21. Sort by Multiple Columns:
Retrieve employees sorted by department in ascending order and salary in descending order.
22. Fetch the highest-paid employee from each department.
23. Find all employees whose email addresses are NULL.
24. Update the salary to 30000 for all employees whose current salary is NULL.

- **Practical Data Analysis Questions using SQL**

25. Count how many users are active and inactive from the `user_activity` table.
26. Using the orders table, calculate the total number of orders placed in the first quarter (January to March) of 2023 and 2024. Compare the results to analyze the growth or decline in order activity.
27. Identify the customer who 1has made the most purchases.
28. Find the product that has been purchased most frequently.

Challenge Tasks

29. Assign a rank to each employee based on their salary in descending order.
30. Retrieve duplicate records from the `orders` table based on the `customer_id` and `order_date`.