Day-7 Interview Questions

1. Explain the difference between the DISTINCT and UNIQUE qualifiers in MySQL.

DISTINCT is used in the SELECT statement to eliminate duplicate values and return only unique values.
UNIQUE is used as a constraint in the CREATE TABLE statement to ensure that values in a column are unique across rows in a table.

2. What is the purpose of the AS keyword in MySQL?

The AS keyword is used to alias column names or table names in a query, making the output more readable. For example, SELECT column_name AS alias_name FROM table_name.

3. How does the HAVING clause differ from the WHERE clause in MySQL?

The WHERE clause is used to filter rows before they are grouped and aggregated.
The HAVING clause is used to filter groups after the GROUP BY operation has been performed, typically used with aggregate functions.

4. Provide an example of a query using the HAVING clause.

```
SELECT department, AVG(salary) as avg_salary
FROM employees
GROUP BY department
HAVING AVG(salary) > 50000;
```

5. How can you add a new column to an existing table using the ALTER TABLE statement?

```
ALTER TABLE table_name
ADD COLUMN new_column_name datatype;
```

6. Explain the purpose of the ALTER TABLE statement with the MODIFY option.

The MODIFY option is used in the ALTER TABLE statement to change the datatype of an existing column.

7. What is a transaction in the context of a relational database?

A transaction is a sequence of one or more SQL statements that are executed as a single unit of work. Either all the statements are executed successfully, or none of them are.

8. Describe the properties of a transaction (ACID properties).

Atomicity: All changes are made as a single unit. If any part of the transaction fails, the entire transaction is rolled back.

Consistency: The database remains in a consistent state before and after the transaction.

Isolation: Transactions are isolated from each other, and the result of one transaction is not visible to others until it is committed.

Durability: Once a transaction is committed, its changes are permanent and survive subsequent failures.