SQL Assessment – 1

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MySQL Assessment - 20 Q&A

1) What is RDBMS?

Relational Database Management System stores data in tables (rows & columns).

Eg: MySQL, PostgreSQL.

2) Why database is needed?

To store, manage, and retrieve large structured data. Example: Swiggy uses DB to store orders, users, restaurants, etc.

3) Difference between DELETE and UPDATE?

DELETE removes rows; UPDATE modifies rows.
Example:

```
DELETE FROM users WHERE id = 1;
UPDATE users SET name = 'John' WHERE id = 2;
```

4) If customer asks to change row?

Use UPDATE:

```
UPDATE customers SET name='David' WHERE customer_id=5;
```

5) Fetch today's date and time

```
SELECT NOW();
```

6) DDL, DML, DCL, TCL

- DDL: CREATE, ALTER
- DML: INSERT, UPDATE
- DCL: GRANT, REVOKE
- TCL: COMMIT, ROLLBACK

7) Steps to install MySQL Workbench

1. Download from MySQL site
2. Install MySQL Server
3. Install Workbench
4. Open & connect to local instance

8) DROP vs TRUNCATE

- DROP deletes table structure
- TRUNCATE clears data but keeps structure

Example:

```
DROP TABLE users;
TRUNCATE TABLE users;
```

9) Define Indexing / Normalization

- Indexing speeds up search
- Normalization reduces redundancy (1NF, 2NF...)

10) Types of Keys

Primary Key: Unique (e.g., user_id)
Foreign Key: Links other table
Candidate Key: Can become PK
Example:

```
CREATE TABLE orders(order_id INT PRIMARY KEY, user_id INT, FOREIGN KEY(user_id)
REFERENCES users(id));
```

11) Aggregate / Wildcard Functions

- Aggregate: COUNT(), SUM()

```
SELECT COUNT(*) FROM orders;
```

- Wildcard: %, _

```
SELECT * FROM users WHERE name LIKE 'A%';
```

12) HAVING vs GROUP BY

GROUP BY groups rows
HAVING filters grouped rows
Example:
SELECT status, COUNT(*) FROM orders GROUP BY status HAVING COUNT(*) > 2;

13) COUNT Real-Time Example

```
SELECT COUNT(*) FROM HotelReservations;
```

14) Stored Procedure

```
DELIMITER //
 CREATE PROCEDURE GetBookings()
 BEGIN
   SELECT * FROM HotelReservations;
 END //
 DELIMITER ;
```

15) HotelReservations Table & COUNT query

```
CREATE TABLE HotelReservations (
  ReservationID INT PRIMARY KEY,
  GuestID INT,
  RoomID INT,
  CheckInDate DATE,
  CheckOutDate DATE,
  NumberOfGuests INT,
  BookingDate DATE,
  Status VARCHAR(20),
  TotalAmount DECIMAL(10,2)
 );

SELECT COUNT(NumberOfGuests) FROM HotelReservations;
```

16) CRUD Operations

```
-- Create
 INSERT INTO HotelReservations VALUES (1, 101, 201, '2025-07-25', '2025-07-28', 2, '2025-
07-20', 'Reserved', 5000.00);
```

```
-- Read
 SELECT * FROM HotelReservations;

-- Update
 UPDATE HotelReservations SET Status='Cancelled' WHERE ReservationID=1;

-- Delete
 DELETE FROM HotelReservations WHERE ReservationID=1;
```

17) Today's Booking / Sorted

```
SELECT * FROM HotelReservations WHERE BookingDate = CURDATE();
 -- or sort
 SELECT * FROM HotelReservations ORDER BY NumberOfGuests DESC;
```

18) Wildcard Real-Time

```
SELECT * FROM Guests WHERE Name LIKE 'J%';
```

19) JOIN Example

```
SELECT r.ReservationID, g.Name
FROM HotelReservations r
 JOIN Guests g ON r.GuestID = g.GuestID;
```

20) LEFT vs RIGHT JOIN

- LEFT JOIN: all from left, matched from right
- RIGHT JOIN: all from right, matched from left
- FULL OUTER JOIN = both sides
- INNER JOIN = only matching rows