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2	PG Mates / RoomSharing / Flat Mates	React+Springboot+MySql
3	Tour and Travel management System	React+Springboot+MySql
4	Election commition of India (online Voting System)	React+Springboot+MySql
5	HomeRental Booking System	React+Springboot+MySql
6	Event Management System	React+Springboot+MySql
7	Hotel Management System	React+Springboot+MySql
8	Agriculture web Project	React+Springboot+MySql
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11	Hospital Management System	React+Springboot+MySql
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29	Solar Management Project	React+Springboot+MySql
30	OneStepService LinkLabourContractor	React+Springboot+MySql
31	Vehical Service Center Portal	React+Springboot+MySql
32	E-wallet Banking Project	React+Springboot+MySql
33	Blogg Application Project	React+Springboot+MySql
34	Car Parking booking Project	React+Springboot+MySql
35	OLA Cab Booking Portal	React+NextJs+Springboot+MySql
36	Society management Portal	React+Springboot+MySql
37	E-College Portal	React+Springboot+MySql
38	FoodWaste Management Donate System	React+Springboot+MySql
39	Sports Ground Booking	React+Springboot+MySql
40	BloodBank mangement System	React+Springboot+MySql

41	Bus Tickit Booking Project	React+Springboot+MySql
42	Fruite Delivery Project	React+Springboot+MySql
43	Woodworks Bed Shop	React+Springboot+MySql
44	Online Dairy Product sell Project	React+Springboot+MySql
45	Online E-Pharma medicine sell Project	React+Springboot+MySql
46	FarmerMarketplace Web Project	React+Springboot+MySql
47	Online Cloth Store Project	React+Springboot+MySql
48	Train Ticket Booking Project	React+Springboot+MySql
49	Quizz Application Project	JSP+Springboot+MySql
50	Hotel Room Booking Project	React+Springboot+MySql
51	Online Crime Reporting Portal Project	React+Springboot+MySql
52	Online Child Adoption Portal Project	React+Springboot+MySql
53	online Pizza Delivery System Project	React+Springboot+MySql
54	Online Social Complaint Portal Project	React+Springboot+MySql
55	Electric Vehical management system Project	React+Springboot+MySql
56	Online mess / Tiffin management System Project	React+Springboot+MySql
57		React+Springboot+MySql
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Spring Boot + React JS + MySQL Project List

Sr.No	Project Name	YouTube Link
1	Online E-Learning Hub Platform Project	https://youtu.be/KMjyBaWmgzg?si=YckHuNzs7eC84-IW
2	PG Mate / Room sharing/Flat sharing	https://youtu.be/4P9clHg3wvk?si=4uEsi0962CG6Xodp
3	Tour and Travel System Project Version 1.0	https://youtu.be/-UHOBywHaP8?si=KHHfE_A0uv725f12
4	Marriage Hall Booking	https://youtu.be/VXz0kZQi5to?si=llOS-QG3TpAFP5k7
5	Ecommerce Shopping project	https://youtu.be/vJ_C6LkhrZ0?si=YhcBylSErvdn7paq
6	Bike Rental System Project	https://youtu.be/FIzsAmIBCbk?si=7ujQTJqEgkQ8ju2H
7	Multi-Restaurant management system	https://youtu.be/pvV-pM2Jf3s?si=PgvnT-yFc8ktrDxB
8	Hospital management system Project	https://youtu.be/IynIouBZvY4?si=CXzQs3BsRkjKhZCw
9	Municipal Corporation system Project	https://youtu.be/cVMx9NVyI4I?si=qX0oQt-GT-LR_5jF
10	Tour and Travel System Project version 2.0	https://youtu.be/_4u0mB9mHXE?si=gDiAhKBowi2gNUKZ

Sr.No	Project Name	YouTube Link
11	Tour and Travel System Project version 3.0	https://youtu.be/Dm7nOdpasWg?si=P_Lh2gcOFhlyudug
12	Gym Management system Project	https://youtu.be/J8_7Zrkg7ag?si=LcxV51ynfUB7OptX
13	Online Driving License system Project	https://youtu.be/3yRzsMs8TLE?si=JRI_z4FDx4Gmt7fn
14	Online Flight Booking system Project	https://youtu.be/m755rOwdk8U?si=HURvAY2VnizIyJlh
15	Employee management system project	https://youtu.be/lD1iE3W_GRw?si=Y_jv1xV_BljhrD0H
16	Online student school or college portal	https://youtu.be/4A25aEKfei0?si=RoVgZtxMk9TPdQvD
17	Online movie booking system project	https://youtu.be/Lfjv_U74SC4?si=fiDvrhhrjb4KSlSm
18	Online Pizza Delivery system project	https://youtu.be/Tp3izreZ458?si=8eWAOzA8SVdNwlyM
19	Online Crime Reporting system Project	https://youtu.be/0UlzReSk9tQ?si=6vN0e70TVY1GOwPO
20	Online Children Adoption Project	https://youtu.be/3T5HC2HKyT4?si=bntP78niYH802I7N

Q - 1) Understanding SQL Command Types and their use cases:

1.**DDL** (**Data Definition Language**): DDL changes the structure of the table like creating a table, deleting a table, altering a table, etc.

Create: Used to create database objects like tables, indexes, and views. **Alter**: Modifies the structure of an existing database object. **Drop**: Deletes database objects. **Truncate**: Removes all records from a table, but not its structure. **Rename**: Changes the name of a database object.

2. **DML** (**Data Manipulation Language**): DML commands are used to modify the database. It is responsible for all form of changes in the database.

Insert: Adds new records to a table. **Update**: Modifies existing records in a table. **Delete**: Removes records from a table. **Merge**: Inserts or updates records conditionally.

3. **DCL** (**Data Control Language**): DCL commands are used to grant and take back authority from any database user.

Grant:: Provides users with access privileges. **Revoke**: Removes access privileges from users.

4.**TCL** (**Transaction Control Language**): TCL commands can only use with DML commands like INSERT, DELETE and UPDATE only.

Commit: Saves the changes made in a transaction. **Rollback**: Reverts the changes made in a transaction. **Save Point**: Sets a save point within a transaction to which you can roll back.

5. **DQL** (**Data Query Language**): DQL is used to fetch the data from the database.

Commands: **Select**: Retrieves data from the database.

Q - 2) What is ACID in the context of database transactions?

ACID stands for Atomicity, Consistency, Isolation, and Durability. It is a set of properties that guarantee reliable processing of database transactions.

Atomicity

ensures that a transaction is treated as a single unit of work, either all or none of the changes are applied.

Consistency

ensures that a transaction brings the database from one valid state to another.

Isolation

ensures that concurrent transactions do not interfere with each other.

Durability

ensures that once a transaction is committed, its changes are permanent and survive system failures

Q - 3) What is a view?

A view is a virtual table based on the result of an SQL statement. It allows users to retrieve and manipulate data

Q - 4) What is the difference between a cross join and an inner join?

A cross join (Cartesian product) returns the combination of all rows from two or more tables. An inner join returns only the matching rows based on a join condition.

Q - 5) What is the purpose of the DISTINCT keyword?

The DISTINCT keyword is used to retrieve unique values from a column or combination of columns in a SELECT statement.

Q - 6) What is the purpose of the TOP or LIMIT clause

The TOP (in SQL Server) or LIMIT (in MySQL) clause is used to limit the number of rows returned by a query. It is often used with an ORDER BY clause.

Q - 7) What is the difference between a primary key and a candidate key?

A primary key is a chosen candidate key that uniquely identifies a row in a table. A candidate key is a set of one or more columns that could potentially become the primary key.

Q - 8) What is the purpose of the COALESCE function?

The COALESCE function returns the first non-null expression from a list of expressions. It is often used to handle null values effectively.

Q - 9) What is the purpose of the ROW_NUMBER() function

The ROW_NUMBER() function assigns a unique incremental number to each row in the result set. It is commonly used for pagination or ranking purposes. ll values effectively.

Q - 10) What is a self-join

A self-join is a join operation where a table is joined with itself. It is useful when you want to compare rows within the same table based on related columns. It requiresbined result set.

Q - 11) What is an ALIAS command

ALIAS command in SQL is the name that can be given to any table or a column. This alias name can be referred in WHERE clause to identify a particular table or a column.

Q - 12) Why are SQL functions used

SQL functions are used for the following purposes:

To perform some calculations on the data To modify individual data items To manipulate the output To format dates and numbers To convert the data types

Q - 13) Window Functions/CTC Functions

- RANK() - gives a rank to each row in a partition based on a specified column or value
- DENSE_RANK() - gives a rank to each row, but DOESN'T skip rank values
- ROW_NUMBER() - gives a unique integer to each row in a partition based on the order of the rows
- LEAD() - retrieves a value from a subsequent row in a partition based on a specified column or expression
- LAG() - retrieves a value from a previous row in a partition based on a specified column or expression

Q - 14) Focus on mastering these essential topics

1.Joins: Get comfortable with inner, left, right, and outer joins. Knowing when to use what kind of join is important!

2. Window Functions: Understand when to use ROW_NUMBER, RANK(), DENSE_RANK(), LAG, and LEAD for complex analytical queries.
3. Query Execution Order: Know the sequence from FROM to ORDER BY. This is crucial for writing efficient, error-free queries.
4. Common Table Expressions (CTEs): Use CTEs to simplify and structure complex queries for better readability.
5. Aggregations & Window Functions: Combine aggregate functions with window functions for in-depth data analysis.
6. Subqueries: Learn how to use subqueries effectively within main SQL statements for complex data manipulations.
7. Handling NULLs: Be adept at managing NULL values to ensure accurate data processing and avoid potential pitfalls.

8. Indexing: Understand how proper indexing can significantly boost query performance.
9. GROUP BY & HAVING: Master grouping data and filtering groups with HAVING to refine your query results.
10. String Manipulation Functions: Get familiar with string functions like CONCAT, SUBSTRING, and REPLACE to handle text data efficiently.
11. Set Operations: Know how to use UNION, INTERSECT, and EXCEPT to combine or compare result sets.
12. Optimizing Queries: Learn techniques to optimize your queries for performance, especially with large datasets.

Q - 15) What are the differences between DELETE, TRUNCATE, and DROP commands in SQL? Provide examples.

DELETE:

The DELETE command is used to remove rows from a table based on a specified condition. It can delete all rows or specific rows that match the condition. DELETE operations can be rolled back if they are part of a transaction. TRUNCATE:

The TRUNCATE command is used to remove all rows from a table. It is faster than DELETE because it does not log individual row deletions. TRUNCATE operations cannot be rolled back if they are not part of a transaction DROP:

The DROP command is used to remove a table or database entirely from the database. This operation deletes the table schema and all its data, and it cannot be rolled back.

Q - 16) most essential SQL commands:

SELECT - Retrieves data from a database UPDATE - Updates existing data in a database DELETE - Removes data from a database INSERT - Adds data to a database CREATE - Creates an object such as a database or table ALTER - Modifies an existing object in a database DROP -Deletes an entire table or database ORDER BY - Sorts the selected data in an ascending or descending order WHERE – Condition used to filter a specific set of records from the database GROUP BY - Groups a set of data by a common parameter HAVING - Allows the use of aggregate functions within the query JOIN - Joins two or more tables together to retrieve data INDEX - Creates an index on a table, to speed up search times.

Q - 17) HOW TO CREATE A TABLE

TABLE_NAME students

1. CREATE TABLE Students
2. (

3. Roll_no INT PRIMARY KEY,
4. Name VARCHAR(45),
5. Branch VARCHAR(30)
6.);

Q - 18) What is Normalization in a Database?

Normalization is used to minimize redundancy and dependency by organizing fields and table of a database. There are some rules of database normalization, which is commonly known as Normal From, and they are: First normal form(1NF)

```
Second normal form(2NF)

Third normal form(3NF)

 Boyce-Codd normal form(BCNF)
```

Using these steps, the redundancy, anomalies, inconsistency of the data in the database can be removed.

Q - 19) What is Denormalization in a Database?

Denormalization is a technique used by database administrators to optimize the efficiency of their database infrastructure. The denormalization concept is based on Normalization, which is defined as arranging a database into tables correctly for a particular purpose. This method allows us to add redundant data into a normalized database to alleviate issues with database queries that merge data from several tables into a single table. It adds redundant terms into the tables to avoid complex joins and many other complex operations Denormalization doesn't mean that normalization will not be done. It is an optimization strategy that takes place after the normalization process

Q - 20) What are the different types of SQL operators

Operators are the special keywords or special characters reserved for performing particular operations. They are also used in SQL queries. We can primarily use these operators within the WHERE clause of SQL commands. Arithmetic operators: These operators are used to perform mathematical operations on numerical data. The categories of this operators are addition (+), subtraction (-), multiplication (*), division (/), remainder/modulus (%), etc

Logical operators: These operators evaluate the expressions and return their results in True or False. This operator includes ALL, AND, ANY, ISNULL, EXISTS, BETWEEN, IN, LIKE, NOT, OR, UNIQUE

Comparison operators: These operators are used to perform comparisons of two values and check whether they are the same or not. It includes equal to (=), not equal to (!= or <>),

less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), not less than (!<), not greater than (!>), etc

Compound operators: These operators perform operations on a variable before setting the variable's result to the operation's result. It includes Add equals (+=), subtract equals (-=), multiply equals (*=), divide equals (/=), modulo equals (%=), etc.

String operators: These operators are primarily used to perform concatenation and pattern matching of strings. It includes + (String concatenation), += (String concatenation assignment), % (Wildcard), [] (Character(s) matches), [^] (Character(s) not to match), _ (Wildcard match one character), etc

Q - 21) What is INNER JOIN in SQL

Inner join returns only those records from the tables that match the specified condition and hides other rows and columns. In simple words, it fetches rows when there is at least one match of rows between the tables is found. INNER JOIN keyword joins the matching records from two tables. It is assumed as a default join, so it is optional to use the INNER keyword with the query

Q - 22) Aggregate functions, /Multi Row Functions which are given below

AVG(): This function is used to returns the average value from specified columns. COUNT(): This function is used to returns the number of table rows, including rows with null values.
MAX(): This function is used to returns the largest value among the group.
MIN(): This function is used to returns the smallest value among the group. SUM(): This function is used to returns the total summed values(non-null) of the specified column.

Q - 23) What is the difference between the WHERE and HAVING clauses?

WHERE HAVING This clause is implemented in row operations. This clause is implemented in column operations It does not allow to work with aggregate functions. It can work with aggregate functions. This clause can be used with the SELECT, UPDATE, and DELETE statements. This clause can only be used with the SELECT statement

Q - 24) What is the difference between IN and BETWEEN operators

BETWEEN Operator IN Operator This operator is used to selects the range of data between two values. The values can be numbers, text, and dates as well. It is a logical operator to determine whether or not a specific value exists within a set of values. This operator reduces the use of multiple OR conditions with the query It returns records whose column value lies in between the defined range It compares the specified column's value and returns the records when the match exists in the set of values.

Q - 25) What is a constraint?

The constraint is used to specify the rule and regulations that allows or restricts what values/data will be stored in the table. It ensures data accuracy and integrity inside the

table. It enforces us to store valid data and prevents us from storing irrelevant data. If any interruption occurs between the constraint and data action, the action is failed. Some of the most commonly used constraints are UNIQUE

CHECK

NOT NULL,

PRIMARY KEY,

FOREIGN KEY, AUTO_INCREMENT, UNIQUE KEY, etc.

Q - 26) Write the SQL query to get the third maximum salary of an employee from a table named employees.

SELECT *

FROM `employees` ORDER BY `salary`

DESC LIMIT 1 OFFSET 2;

A. Using LIMIT Keyword

1. SELECT salary FROM employees
2. ORDER BY salary DESC
3. LIMIT 2, 1;

B. Using Subquery

1. SELECT salary
2. FROM
3. `(SELECT salary`
4. `FROM employees`
5. `ORDER BY salary DESC`
6. `LIMIT 3) AS Temp`
7. `ORDER BY salary LIMIT 1;`

C. Using TOP Keyword

1. SELECT TOP 1 salary
2. FROM

```
3.          (SELECT DISTINCT TOP 3 salary
4.                                                  FROM employees
5.                                                                  ORDER BY
    salary DESC) AS Temp
6.
    ORDER BY salary ASC;
```

Q - 27) Explain character-manipulation functions

Character-manipulation functions are used to change, extract, and alter the character string. A) CONCAT: This function is used to join two or more values together. It always appends the second string into the end of the first string.

For example:

SELECT CONCAT ('Information-', 'technology') FROM DUAL;

Output: Information-technology

B) SUBSTR: It is used to return the portion of the string from a specified start point to an endpoint. For example

SELECT SUBSTR ('Database Management System', 9, 11) FROM DUAL;

Output: Management

C) LENGTH: This function returns the string's length in numerical value, including the blank spaces.

For example:

SELECT LENGTH ('Hello Javaworld') FROM DUAL;

Output: 15

REPLACE: This function is used to replace all occurrences of a word or portion of the string (substring) with the other specified string value.

For example

SELECT REPLACE ('It is the best coffee at the famous coffee shop.', 'coffee', 'tea') From Dual;

Output: It is the best tea at the famous tea shop.

Q - 28) What is the usage of the NVL() function?

The NVL() function is used to convert the NULL value to the other value. The function returns the value of the second parameter if the first parameter is NULL. If the first parameter is anything other than NULL, it is left unchanged. This function is used in Oracle,

not in SQL and MySQL. Instead of NVL() function, MySQL have IFNULL() and SQL Server have ISNULL() function.

Q - 29) Is it possible to implicitly insert a row for the identity column?

Yes. We can implicitly insert a row for the identity column.

Here is an example of doing this

1. SET IDENTITY_INSERT TABLE1 ON
2. INSERT INTO demo_table1 (id, name, branch)
3. SELECT id, name, branch FROM demo_table2
4. SET IDENTITY_INSERT OFF

Q - 30) What is a "TRIGGER" in SQL

A trigger is a set of SQL statements that reside in a system catalog. It is a special type of stored procedure that is invoked automatically in response to an event. It allows us to execute a batch of code when an insert, update or delete command is run against a specific table because the trigger is the set of activated actions whenever DML commands are given to the system. SQL triggers have two main components one is action, and another is an event. When certain actions are taken, an event occurs as a result of those actions.

We use the CREATE TRIGGER statement for creating a trigger in SQL. Here is the syntax:

```
1.  CREATE TRIGGER trigger_name
2.     (AFTER | BEFORE) (INSERT | UPDATE | DELETE)
3.      ON table_name FOR EACH ROW
4.       BEGIN
5.             --variable declarations
6.            --trigger code
7.             END;
8 /
```

Q - 31) What are the set operators in SQL?

We use the set operators to merge data from one or more tables of the same kind. Although the set operators are like SQL joins, there is a significant distinction. SQL joins combine columns from separate tables

A. UNION: It combines two or more results from multiple SELECT queries into a single result set.

It has a default feature to remove the duplicate rows from the tables.

The following syntax illustrates the Union operator:

```
1. SELECT columns FROM table1
2. UNION
3. SELECT columns FROM table2;
```

B. UNION ALL: This operator is similar to the Union operator, but it does not remove the duplicate rows from the output of the SELECT statements.

The following syntax illustrates the UNION ALL operator

```
1. SELECT columns FROM table1
2. UNION ALL
3. SELECT columns FROM table2;
```

C. INTERSECT: This operator returns the common records from two or more SELECT statements.

It always retrieves unique records and arranges them in ascending order by default

```
1. SELECT columns FROM table1
2. INTERSECT
3. SELECT columns FROM table2;
```

D. MINUS: This operator returns the records from the first query,

which is not found in the second query.

```
1. SELECT columns FROM table1
2. MINUS
3. SELECT columns FROM table2;
```

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