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Top 25 SQL

Must-do Interview Questions & Answers

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Question #1

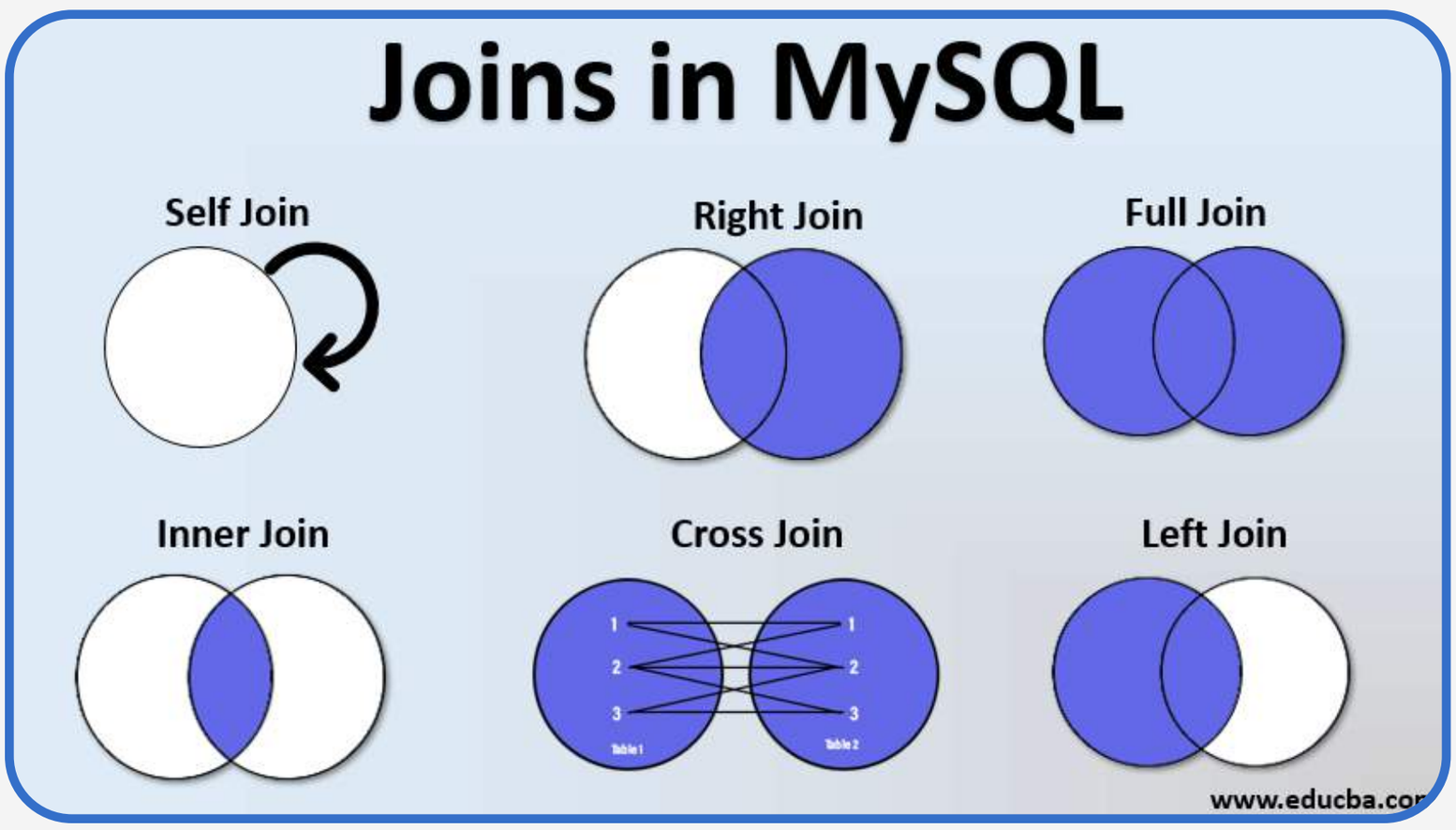
What are joins in SQL?

JOINS in SQL are commands which are used to combine rows from two or more tables, based on a related column between those tables.

Question #2

What are the different types of joins?

There are four main types of JOINs in SQL: INNER JOIN, OUTER JOIN, CROSS JOIN, and SELF JOIN.



Different types of joins

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Question #3

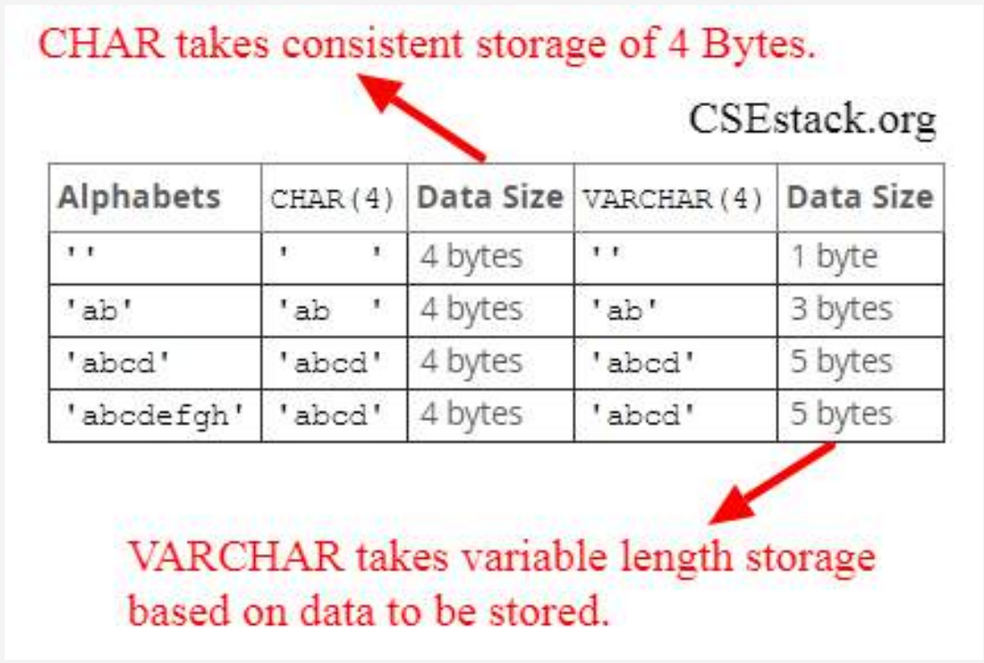
What is the difference between LEFT JOIN & RIGHT JOIN?

The main difference between these joins is the inclusion of non-matched rows. The LEFT JOIN includes all records from the left side and matched rows from the right table, whereas the RIGHT JOIN returns all rows from the right side and unmatched rows from the left table.

Question #4

What is the difference between CHAR and VARCHAR2 datatype in SQL?

The difference between a CHAR and a VARCHAR is that a CHAR(n) will ALWAYS be N bytes long, it will be blank padded upon insert to ensure this. A varchar2(n) on the other hand will be 1 to N bytes long, it will NOT be blank padded.



Alphabets	CHAR(4)	Data Size	VARCHAR(4)	Data Size
''	' '	4 bytes	''	1 byte
'ab'	'ab '	4 bytes	'ab'	3 bytes
'abcd'	'abcd'	4 bytes	'abcd'	5 bytes
'abcdefgh'	'abcd'	4 bytes	'abcd'	5 bytes

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Question #5

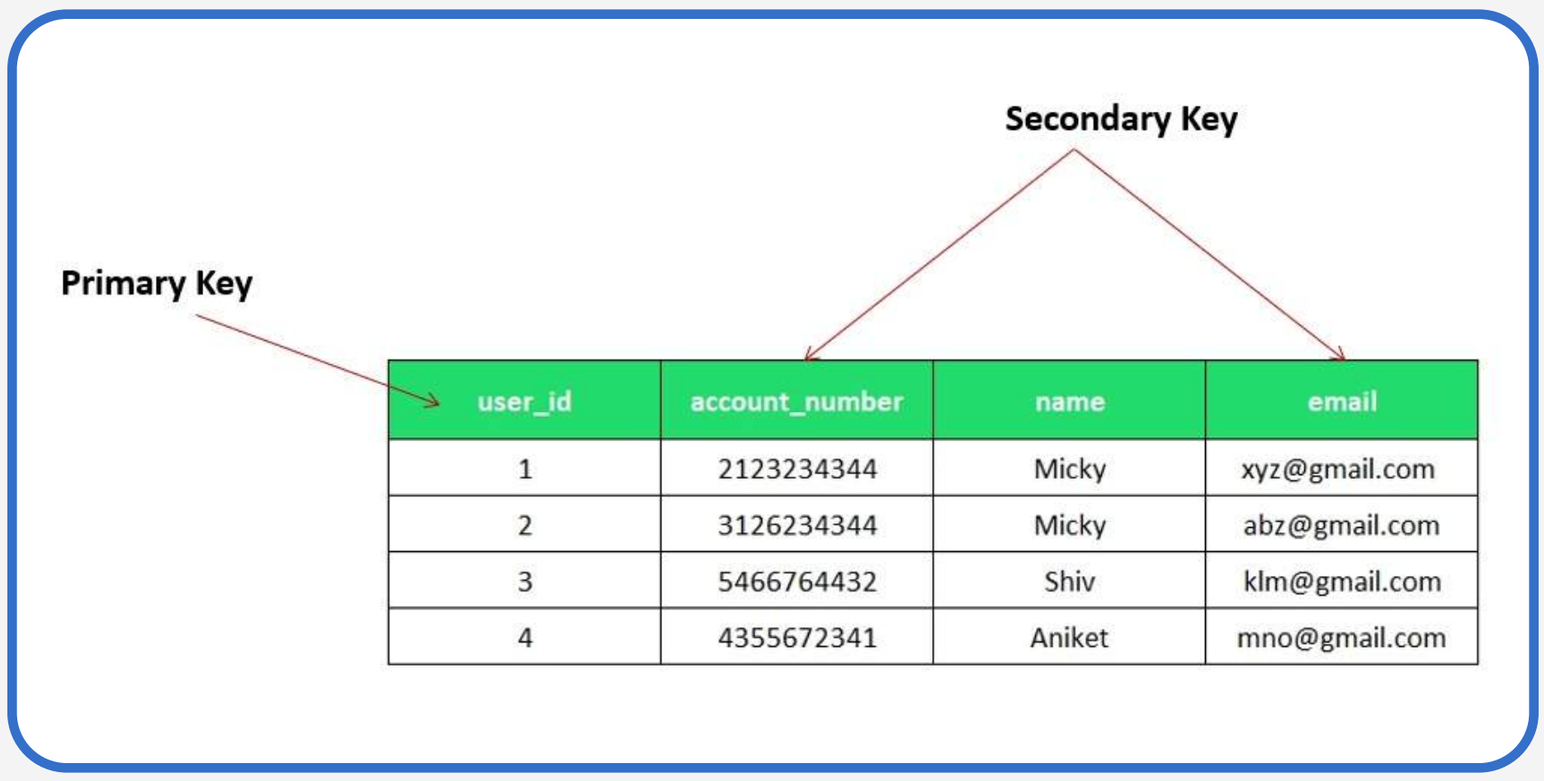
What is a primary key?

A primary key is an entry in a database that is unique to a single record. This key is generally derived in one of two ways: a unique identification code from outside the database or a generated number from within the database.

Question #6

What is a secondary key?

A secondary key is an additional key, or alternate key, which can be used in addition to the primary key to locate specific data.



user_id	account_number	name	email
1	2123234344	Micky	xyz@gmail.com
2	3126234344	Micky	abz@gmail.com
3	5466764432	Shiv	klm@gmail.com
4	4355672341	Aniket	mno@gmail.com

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Question #7

What is the difference between DELETE and TRUNCATE statements?

The DELETE command in SQL removes one or more rows from a table based on the conditions specified in those rows.

Delete Vs Truncate

Difference between delete and truncate can be summarized as below

	Delete	Truncate
Command Type	DML	DDL
Where Condition	support	does not support
Reset Identity Column	no	yes
Acquired lock	row lock	table and page lock
Transaction log	for each deleted row	one log indicating deallocation of page
Performance(Speed of execution)	slow	much faster than Delete

Question #8

What is a unique key?

A unique key is a set of one or more than one fields/ columns of a table that uniquely identify a record in a database table.

Question #9

Write a SQL query to display the current date.

GETDATE() function returns the current database system date and time

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Question #10

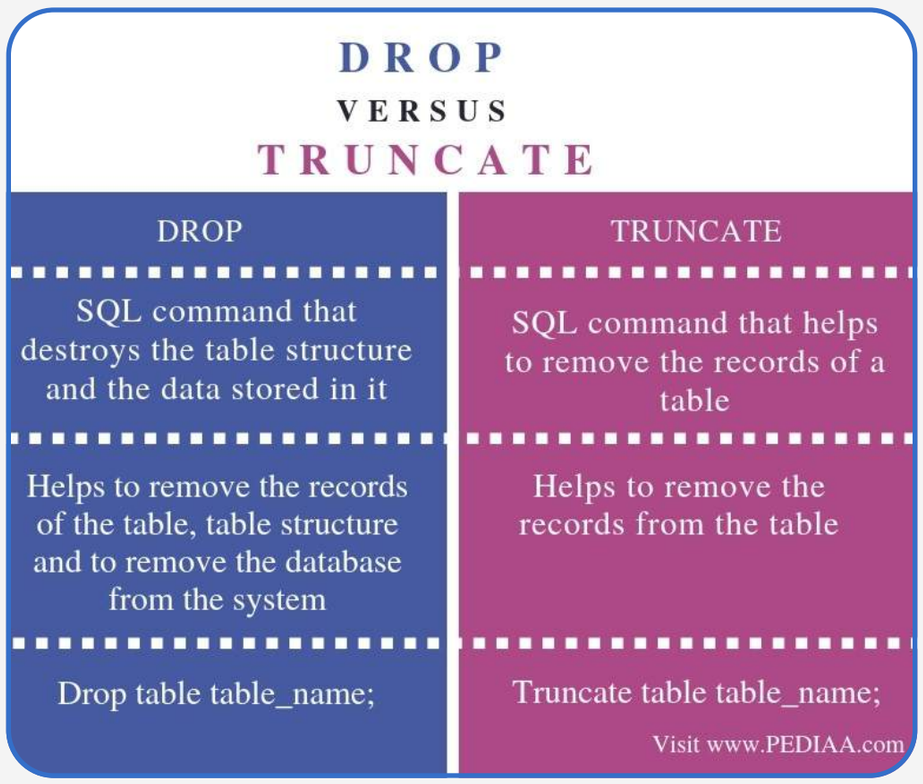
What is a Foreign key in SQL?

A foreign key is a column (or combination of columns) in a table whose values must match the values of a column in some other table. FOREIGN KEY constraints enforce referential integrity, which essentially says that if column value A refers to column value B, then column value B must exist.

Question #11

What is the difference between DROP and TRUNCATE commands?

The DROP command is used to remove the whole database or table indexes, data, and more. Whereas the TRUNCATE command is used to remove all the rows from the table.



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Question #12

Explain different types of indexes in SQL.

There are two types of Indexes in SQL Server:

1. Clustered Index
2. Non-Clustered Index

Clustered Index

A clustered index defines the order in which data is physically stored in a table. Table data can be sorted in only one way, therefore, there can be only one clustered index per table. In SQL Server, the primary key constraint automatically creates a clustered index on that particular column.

Non-Clustered Indexes

A non-clustered index doesn't sort the physical data inside the table. In fact, a non-clustered index is stored in one place and table data is stored in another place. This is similar to a textbook where the book content is located in one place and the index is located in another. This allows for more than one non-clustered index per table.

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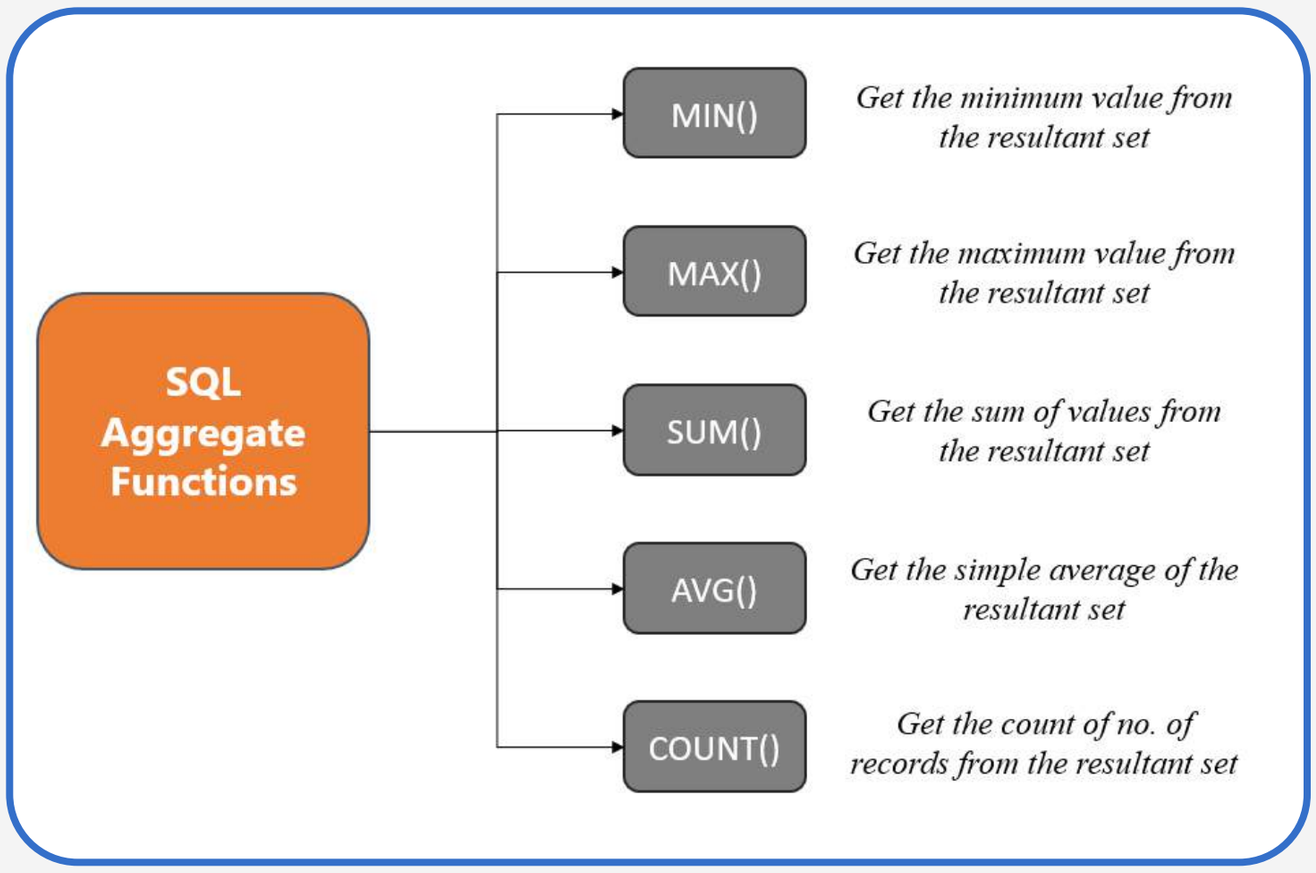
Question #13

How many Aggregate functions are available in SQL?

There are mainly five aggregate functions, which are: MIN, MAX, COUNT, SUM, and AVG.



Question #14

What is the default ordering of data using the ORDER BY clause? How could it be changed?

In SQL ORDER BY clause, we need to define ascending or descending order in which the result needs to be sorted. By default, SQL Server sorts out results using the ORDER BY clause in ascending order.

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Question #15

How do we use the DISTINCT statement? What is its use?

The SELECT DISTINCT statement is used to return only distinct (unique) values. Inside a table, a column often contains many duplicate values; and sometimes you only want to list the unique (distinct) values.

Table: Customers

customer_id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

```
SELECT DISTINCT country
FROM Customers;
```

country
USA
UK
UAE

Question #16

What are the syntax and use of the COALESCE function?

The SQL server's Coalesce function is used to handle the Null values.

The SQL COALESCE function can be syntactically represented using the CASE expression. For example, as we know, the Coalesce function returns the first non-NULL values. SELECT COALESCE (expression1, expression2, expression3) FROM TABLENAME;

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Question #17

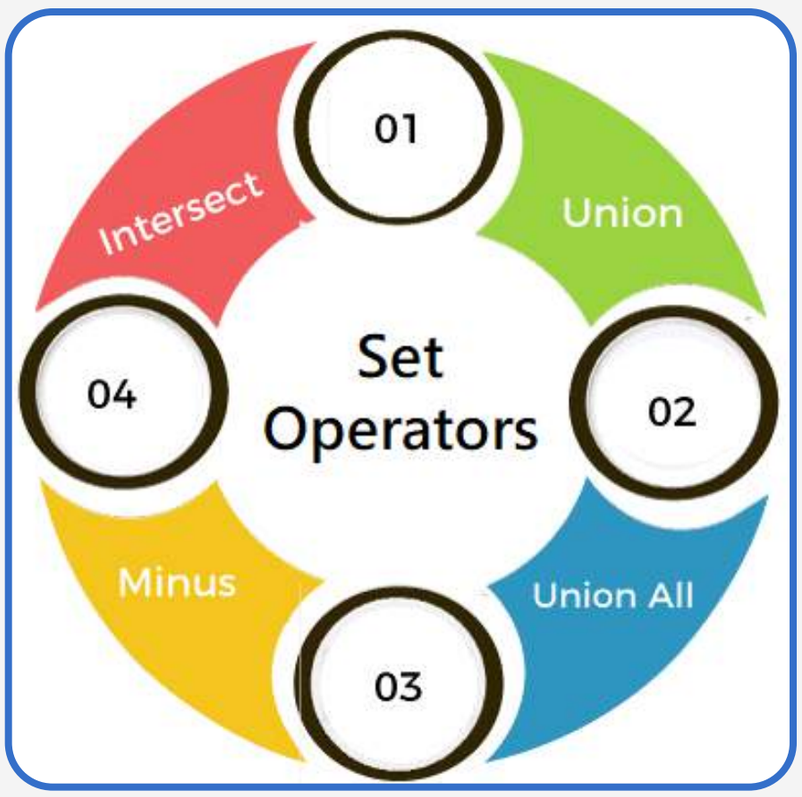
What are the set operators in SQL?

Set operators are used to combine or excluding the results of two or more SELECT statement queries into a single result set. They perform by combining rows from two or more tables as opposed to columns in SQL joins. Set operators are like mathematical operations.

Question #18

What is the difference between IN and BETWEEN operators?

Both of these operators are used to find out the multiple values from the table. The difference between these operators is that the BETWEEN operator is used to select a range of data between two values while The IN operator allows you to specify multiple values.



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Question #19

How to write an SQL query to find students' names starting with 'A'?

```
SELECT * FROM Table WHERE STUDENT_NAME LIKE 'A%';
```

Question #20

Is a blank space or zero the same as a NULL value?

Null indicates there is no value within a database field for a given record. It does not mean zero because zero is a value. Blank indicates there is a value within a database but the field is blank.

This is not a NULL Value

StudentID	StudentName	City	marks
1	Raj		45
2	Sham	Mumbai	NULL
3	Tom	Pune	66
4	Ram	Pune	58
5	Joy	Mumbai	NULL
6	Robin	NULL	NULL

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Question #21

What is meant by case manipulation functions? Explains its different types in SQL.

Case-manipulation function is used to change the case of character strings. The types of case-manipulation functions are LOWER , UPPER , and INITCAP.

Question #22

Explain character-manipulation functions? Explains its different types in SQL.

Character-manipulation functions are used to manipulate character strings. The CONCAT, SUBSTR and REPLACE are Character-manipulation Character functions.

Character-Manipulation Functions

These functions manipulate character strings:

Function	Result
CONCAT('Hello', 'World')	HelloWorld
SUBSTR('HelloWorld',1,5)	Hello
LENGTH('HelloWorld')	10
INSTR('HelloWorld', 'W')	6
LPAD(salary,10,'*')	*****24000
RPAD(salary, 10, '*')	24000*****
REPLACE ('JACK and JUE','J','BL')	BLACK and BLUE
TRIM('H' FROM 'HelloWorld')	elloWorld

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Question #23

Which function is used to return the remainder in a division operator in SQL?

The MOD() function returns the remainder of a number divided by another number.

Question #24

What is the difference between the WHERE and HAVING clauses?

“Where” clause is used to filter the records from a table that is based on a specified condition and the “Having” clause is used to filter the record from the groups based on the specified condition.

Question #25

Is it possible to implicitly insert a row for the identity column?

You cannot INSERT values manually into an IDENTITY column.

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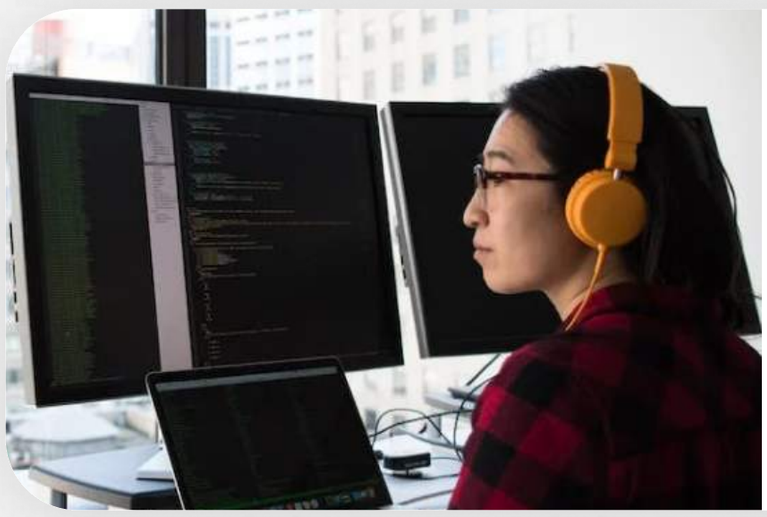

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