

DBMS Interview Questions

Question 1

What are the differences between a DBMS and RDBMS?

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DBMS

Provides an organized way of managing, retrieving and storing from a collection of logically related information.

V/S

RDBMS

Provides the same as that of DBMS, but it provides with relational integrity.

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DBMS Interview Questions

Question 2

Explain the terms database and DBMS. Also, mention the different types of DBMS.

A software application which interacts with databases, applications, and users to capture and analyse the required data. The data stored in the database can be retrieved, deleted and modified based on the clients requirement.



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DBMS Interview Questions

Question 3

What are the advantages of DBMS?

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- 01 **Data Independence**
- 02 **Sharing of Data**
- 03 **Integrity constraints**
- 04 **Redundancy control**
- 05 **Provide backup and recovery facility**

DBMS Interview Questions

Question 4

Mention the different languages present in DBMS

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DDL

Consists of the commands that can be used to define the database schema.

DML

Includes commands which deal with the manipulation of data present in database.

DCL

Consists of commands which deal with the rights, permissions and other controls of the database system.

TCL

Includes the commands which mainly deal with the transaction of database.

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DBMS Interview Questions

Question 5

What do you understand by query optimization?

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Query optimization is the phase which identifies a plan for evaluation query that has the least estimated cost.

This phase comes into the picture **when there are a lot of algorithms** and methods to execute the same task.

The advantages of query optimization are as follows:

01

The output is provided faster

02

A larger number of queries can be executed in less time

03

Reduces time and space complexity

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DBMS Interview Questions

Question 6

Do we consider NULL values the same as that of blank space or zero?

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A NULL value is not at all same as that of zero or a blank space.

NULL value **represents a value which is unavailable**, unknown, assigned or not applicable whereas a zero is a number and blank space is a character.

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DBMS Interview Questions

Question 7

What do you understand by aggregation and atomicity?

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AGGREGATION

This property states that a database modification must either follow all the rules or nothing at all. So, if one part of the transaction fails, then the entire transaction fails

ATOMICITY

This is a feature of the E-R model which allows a relationship set to participate in another relationship set.

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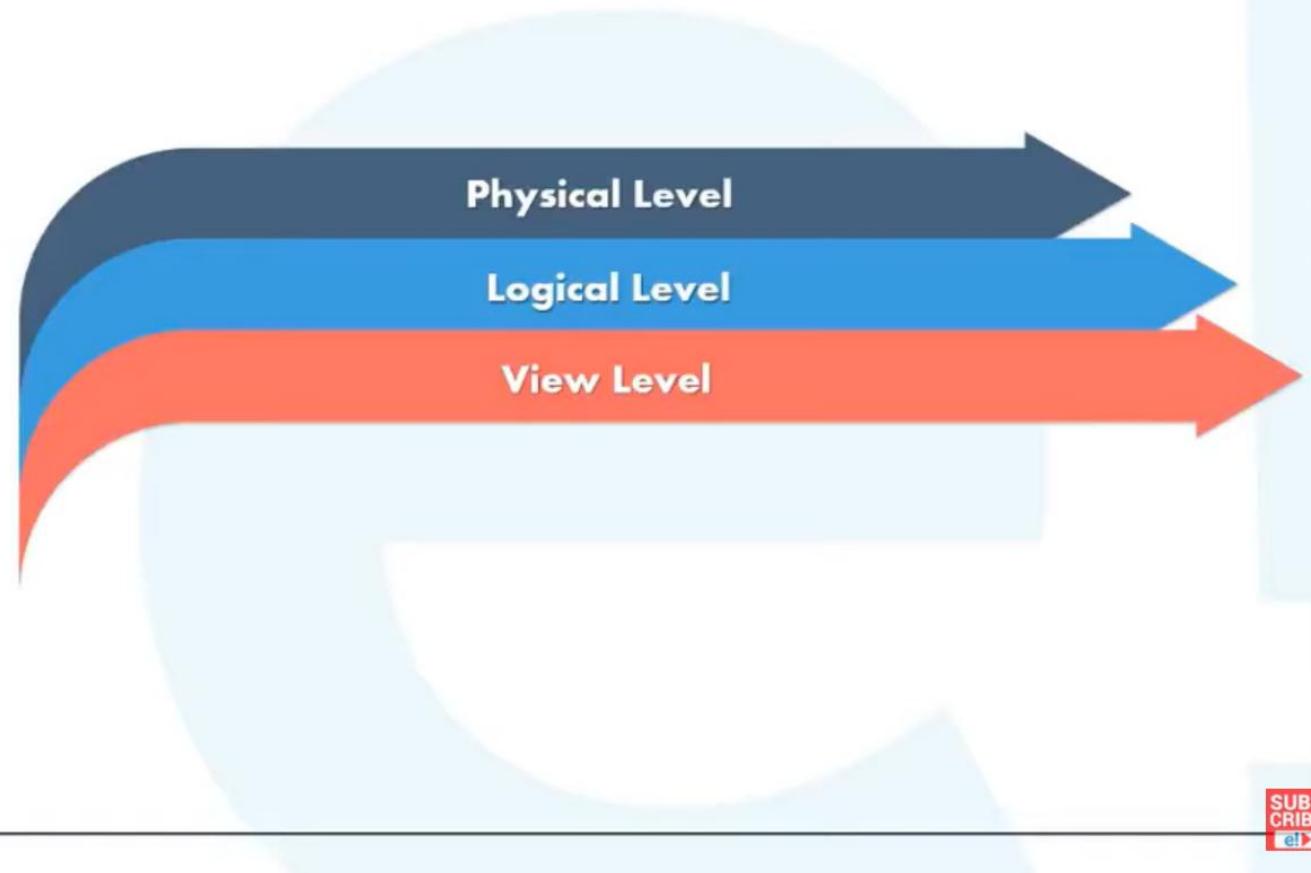
DBMS Interview Questions

Question 8

What are the different levels of abstraction in the DBMS?

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Different levels of abstraction are as follows:



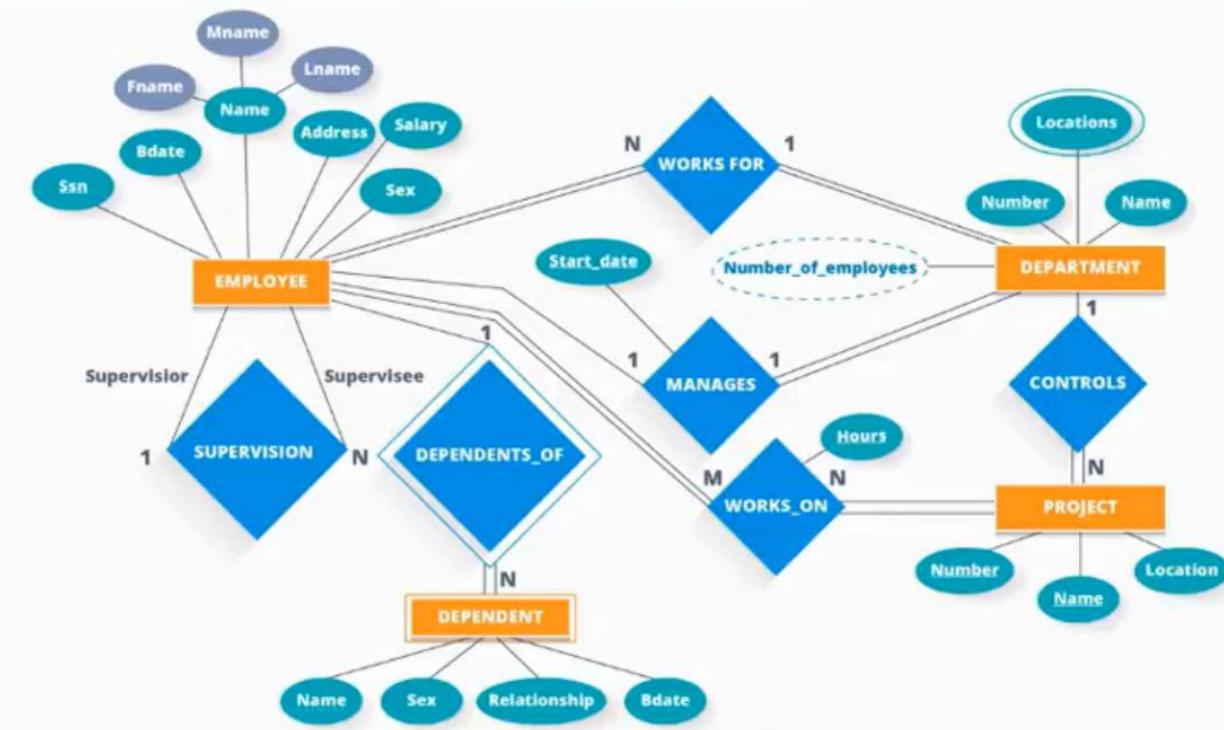
DBMS Interview Questions

Question 9

What is an entity-relationship model?

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It is a diagrammatic approach to database design, where you represent real-world objects as entities and mention relationships between them. This approach helps the team of DBAs' to understand the schema easily.



DBMS Interview Questions

Question 10

What do you understand by the terms Entity, Entity Type, and Entity Set in DBMS?

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Entity

An entity is a real-world object having attributes, which are nothing but characteristics of that particular object.

Entity Type

Entity type is nothing but a collection of entities, having the same attributes. Generally, an entity type refers to one or more related tables in a particular database.

Entity Set

An entity set is the collection of all the entities of a particular entity type in a database. For example, a set of employees, a set of companies, and a set of people can come under an entity set.

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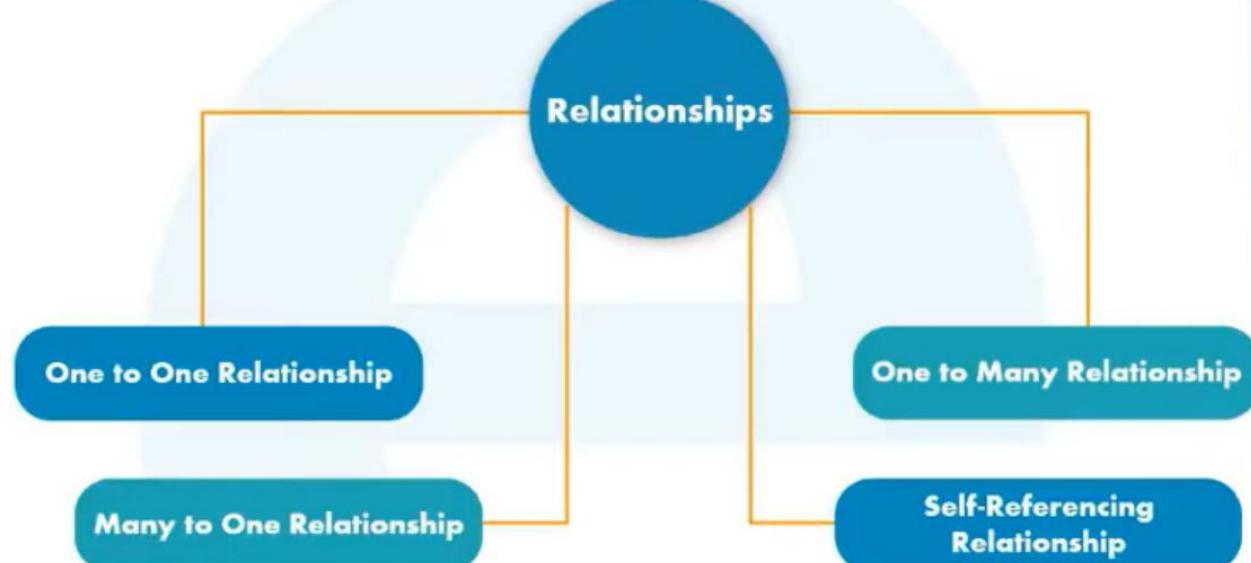
DBMS Interview Questions

Question 11

What are relationships and mention different types of relationships in the DBMS?

Relation or links are between entities that have something to do with each other.

Relationships are defined as the connection between the tables in a database.



DBMS Interview Questions

Question 12

What is concurrency control?

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This is a process managing simultaneous operations in a database so that database integrity is not compromised.

The following are the two approaches involved in concurrency control:

Optimistic approach

Pessimistic approach

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DBMS Interview Questions

Question 13

What are the ACID properties in DBMS?

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Atomicity

Atomicity refers to those transactions which are completely successful or failed.

Consistency

Consistency ensures that the data must meet all the validation rules.

Isolation

The main goal of isolation is concurrency control.

Durability

Durability means that if a transaction has been committed, it will occur whatever may be the scenario.

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DBMS Interview Questions

Question 15

What are the different types of keys in the database?

- 1 Candidate Key
- 2 Super Key
- 3 Primary key
- 4 Unique key
- 5 Alternate Key
- 6 Foreign Key
- 7 Composite Key

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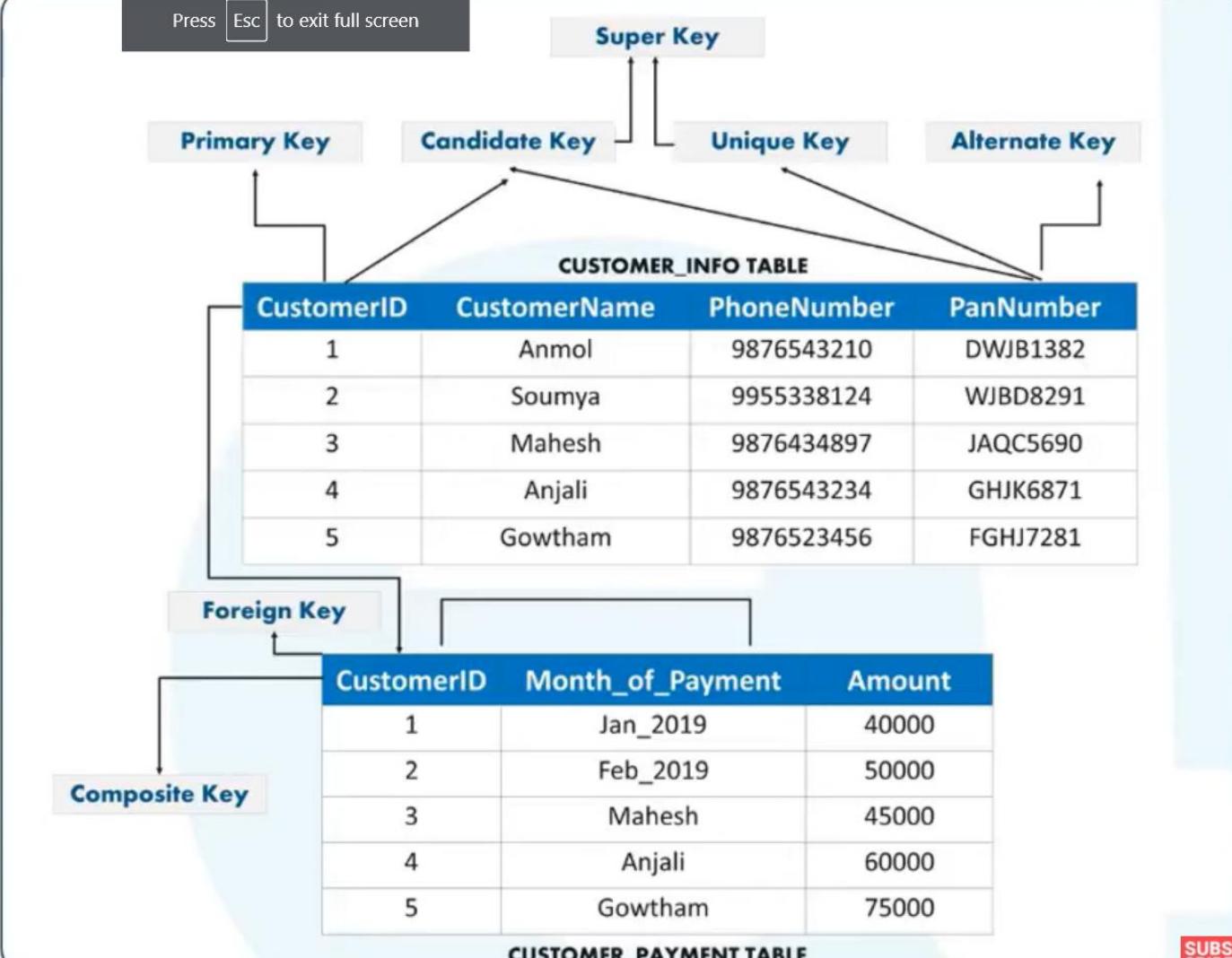
DBMS Interview Questions

Question 15

What are the different types of keys in the database?

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Press Esc to exit full screen



DBMS Interview Questions

Question 16

What do you understand by correlated subqueries in DBMS?

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A **correlated subquery** is also a sort of subquery reliant on another query.

Each subquery is executed a single time for every row of the outer query.

You can also understand correlated subqueries as those queries, which are used for row-by-row processing by the parent statement.

Here, the parent statement can be **SELECT, UPDATE or DELETE** statement.



DBMS Interview Questions

Question 17

Explain Database partitioning and its importance.

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Press **Esc** to exit full screen

Data partitioning is the process of dividing a logical database into independent units for the betterment of availability, performance, and manageability.

01 **Enables you to access large parts of a specific partition**

02 **Cheap and slower storage can be used to store data**

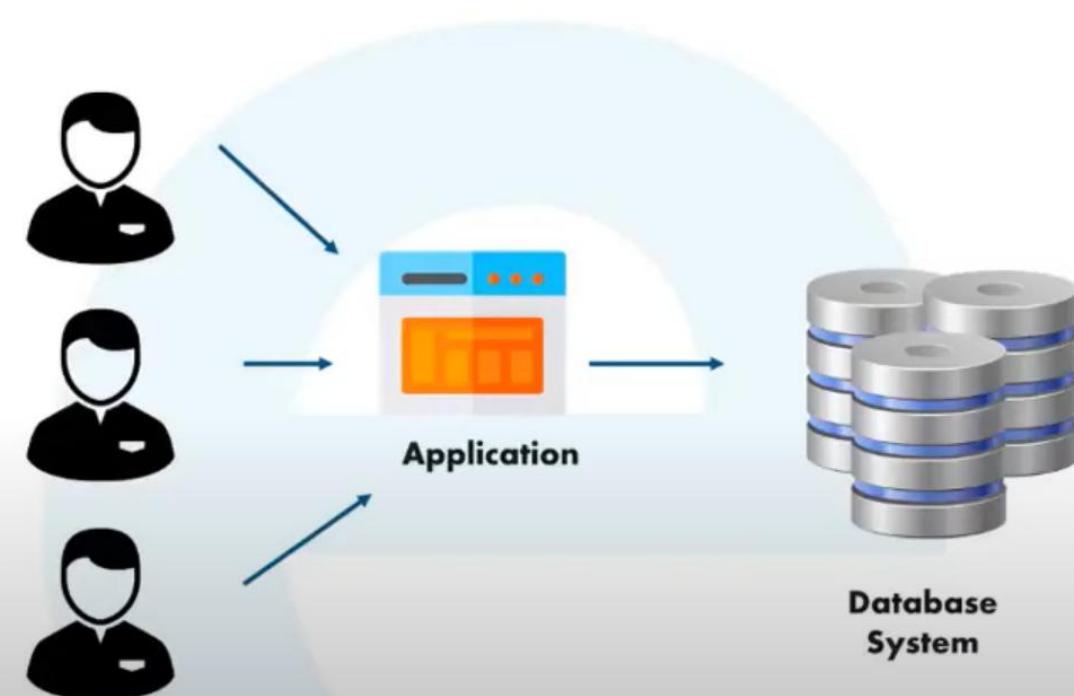
03 **Improves query performance**

DBMS Interview Questions

Question 19

What is the difference between two and three-tier architectures?

TWO - TIER ARCHITECTURE



DBMS Interview Questions

Question 19

What is the difference between two and three-tier architectures?

THREE - TIER ARCHITECTURE



DBMS Interview Questions

Question 21

What is a checkpoint in DBMS and when does it occur?

A **checkpoint** is a mechanism where **all the previous logs are removed from the system** and are permanently stored on the storage disk.

So, basically, checkpoints are **those points from where the transaction log record can be used to recover** all the committed data up to the point of crash.

DBMS Interview Questions

Question 22

Mention the differences between Trigger and Stored Procedures

Triggers

A special kind of stored procedure that is not called directly by a user. In fact, a trigger is created and is programmed to fire when a specific event occurs.

Stored Procedures

A group of SQL statements which can be reused again and again. These statements are created and stored in the database.

A trigger cannot be called or execute directly by a user. Only when the corresponding events are fired, triggers are created.

Can execute stored procedures by using the exec command, whenever we want.

You cannot schedule a trigger.

You can schedule a job to execute the stored procedure on a pre-defined time.

DBMS Interview Questions

Question 22

Mention the differences between Trigger and Stored Procedures

Triggers	Stored Procedures
Cannot directly call another trigger within a trigger.	Call a stored procedure from another stored procedure.
Parameters cannot be passed as input.	Parameters can be passed as input
Cannot return values.	Can return zero or n values.
Transactions are not allowed within a trigger.	You can use transactions within a stored procedure.

DBMS Interview Questions

Question 23

What are the differences between Hash join, Merge join and Nested loops?

HASH JOIN

The hash join is used when you have to join large tables.

MERGE JOIN

Merge join is used when projections of the joined tables are sorted on the join columns.

NESTED LOOPS

The nested loop consists of an outer loop and an inner loop.

DBMS Interview Questions

Question 25

What are indexes? Mention the differences between the clustered and non-clustered index

Indexes are **data structures** responsible for improving the speed of data retrieval operations on a table.

This data structure **uses more storage space to maintain extra copies of data by using additional writes.**

Used for **searching algorithms**, where you wish to retrieve data in a quick manner.

DBMS Interview Questions

Question 25

What are indexes? Mention the differences between the clustered and non-clustered index

Clustered Index	Non Clustered Index
A clustered index is faster	Non clustered index is relatively slower
Alters the way records are stored in a database as it sorts out rows by the column which is set to be clustered index	Does not alter the way it was stored but it creates a separate object within a table which points back to the original table rows after searching
One table can only have one clustered index	One table can only have many non clustered indexes

DBMS Interview Questions

Question 26

What do you understand by intension and extension?

Intension

Intension or most commonly known as Database schema defines the description of the database. This is specified during the database design and mostly remains unchanged.

Extension

Extension is the number of tuples available in the database at any instance of time. This value keeps changing as and when the tuples are created, updated and destroyed.

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DBMS Interview Questions

Question 27

What do you understand by cursor? Mention the different types of cursor

A cursor is a database object which helps in manipulating data, row by row and represents a result set.

Implicit cursor

Explicit cursor

DBMS Interview Questions

Question 28

Explain the terms specialization and generalization

Specialization

Specialization is a process of defining a set of subclasses of the entity type. Here, each subclass will contain all the attributes and relationships of the parent entity. Apart from this, the subclasses may contain additional attributes and relationships specific to itself.

Generalization

Generalization is a process of finding relations, common attributes for a particular set of entities; and finally defining a common superclass for them.

DBMS Interview Questions

Question 29

What do you understand by Data Independence?

When you say an application has data independence, it implies that the application is independent of the storage structure and data access strategies of data.

DBMS Interview Questions

Question 30

What are the different integrity rules present in the DBMS?

The different integrity rules present in DBMS are as follows:



Entity Integrity



Referential Integrity

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DBMS Interview Questions

Question 31

What does Fill Factor concept mean with respect to indexes?

Fill Factor is used to mention the percentage of space left on every leaf-level page, which is packed with data.

Usually, the **default value** is 100.

DBMS Interview Questions

Question 32

What is Index hunting and how does it help in improving query performance?

The process of boosting a collection of indexes is known as Index hunting. This is done as indexes improve the query performance and the speed at which they are processed.

It helps in improving query performance in the following way:

The best queries are suggested using the query optimizer.

Index, query distribution and their performance are used as metrics to check the effect

Databases are tuned into a small collection of problem queries.

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DBMS Interview Questions

Question 33

What are the differences between network and hierarchical database model?

Network Model

Each parent node can have multiple children nodes and vice versa.

Supports one-to-one, one-to-many, and many-to-many relationships

Hierarchical Model

A top-down structure where each parent node can have many child nodes. But, a child node can have only a single parent node.

Supports one-to-one and one-to-many relationships

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DBMS Interview Questions

Question 34

Explain what is a deadlock and mention how it can be resolved?

Deadlock is a situation which occurs when two transactions wait on a resource which is locked or other transaction holds.

Deadlocks **can be prevented** by making all the transactions acquire all the locks at the same instance of time.

So, once deadlock occurs, the only way to cure is to

abort one of the transactions and remove the partially completed work.

DBMS Interview Questions

Question 35

What are the differences between an exclusive lock and a shared lock?

EXCLUSIVE LOCKS

An exclusive lock is a lock on a data item when a transaction is about to perform the write operation.

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SHARED LOCKS

A shared lock allows more than one transaction to read the data items.

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DBMS Interview Questions

Question 1

What are the differences between DROP, TRUNCATE and DELETE commands?

DROP	TRUNCATE	DELETE
Used to delete a database, table or a view	Used to delete all rows from a table	Used to delete a row in the table
Data cannot be rolled back	Data cannot be rolled back	Data can be rolled back
A DDL command	A DDL command	A DML command.
Slower than TRUNCATE	Faster than DROP and DELETE	Slower than TRUNCATE
Deletes the full structure of the table	Preserves the structure of the table	Deletes the structure of the row from a table

DBMS Interview Questions

Question 2

What is SQL and where is it used?

SQL

is a standard language which stands for Structured Query Language based on the English language. SQL is the core of relational database which is used for accessing and managing database.

DBMS Interview Questions

Question 3

What do you understand by sub-queries in SQL?

A subquery is **a query inside another query** where a query is defined to retrieve data or information back from the database.

In a subquery, the outer query is called as the **main query** whereas the **inner query** is called subquery.

Subqueries are always executed first and the result of the subquery is passed on to the main query.

It can be nested inside a **SELECT, UPDATE** or any other query.

A subquery can also use any comparison operators such as **>, < or =**.

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DBMS Interview Questions

Question 4

Mention the differences between UNION and UNION ALL

UNION

Combines the result of two or more SELECT statements consisting of distinct values

Syntax: UNION

Has low performance than UNION ALL, as duplicate rows need to be removed.

UNION ALL

Combines the result set of two or more SELECT statements consisting of duplicate values

Syntax: UNION ALL

Has better performance than UNION, as duplicate rows need not have to be removed.

DBMS Interview Questions

Question 5

What do you understand by CLAUSE in SQL?

CLAUSE in SQL is used to **limit the result set** by mentioning a condition to the query. So, you can use a CLAUSE to filter rows from the entire set of records.

Example: WHERE, HAVING clause.

DBMS Interview Questions

Question 6

Mention the differences between HAVING and WHERE clause?

HAVING CLAUSE

Can be used only with SELECT statement. It is usually used in a GROUP BY clause.

WHERE CLAUSE

WHERE Clause is applied to each row before they are a part of the GROUP BY function in a query.

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DBMS Interview Questions

Question 7

How can you perform pattern matching in SQL?

LIKE operator is used for pattern matching.

% – It matches zero or more characters.

Example :

```
SELECT * FROM students WHERE studentname LIKE  
'a%'
```

_ – It matches exactly one character.

Example :

```
SELECT * FROM student WHERE studentname LIKE  
'abc_'
```

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DBMS Interview Questions

Question 8

Mention few case manipulation functions in SQL

LOWER

This function returns the string in lowercase. It takes a string as an argument and returns it by converting it into lower case.

Syntax: LOWER('string')

UPPER

This function returns the string in uppercase. It takes a string as an argument and returns it by converting it into uppercase.

Syntax: UPPER('string')

INITCAP

This function returns the string with the first letter in uppercase and rest of the letters in lowercase.

Syntax: INITCAP('string')

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DBMS Interview Questions

Question 9

What are joins in SQL and what are the different types of joins?

A JOIN clause is used to combine rows from two or more tables, based on a related column between them. It is used to merge two tables or retrieve data from there.

There are 4 joins in SQL namely:

INNER JOIN

FULL JOIN

LEFT JOIN

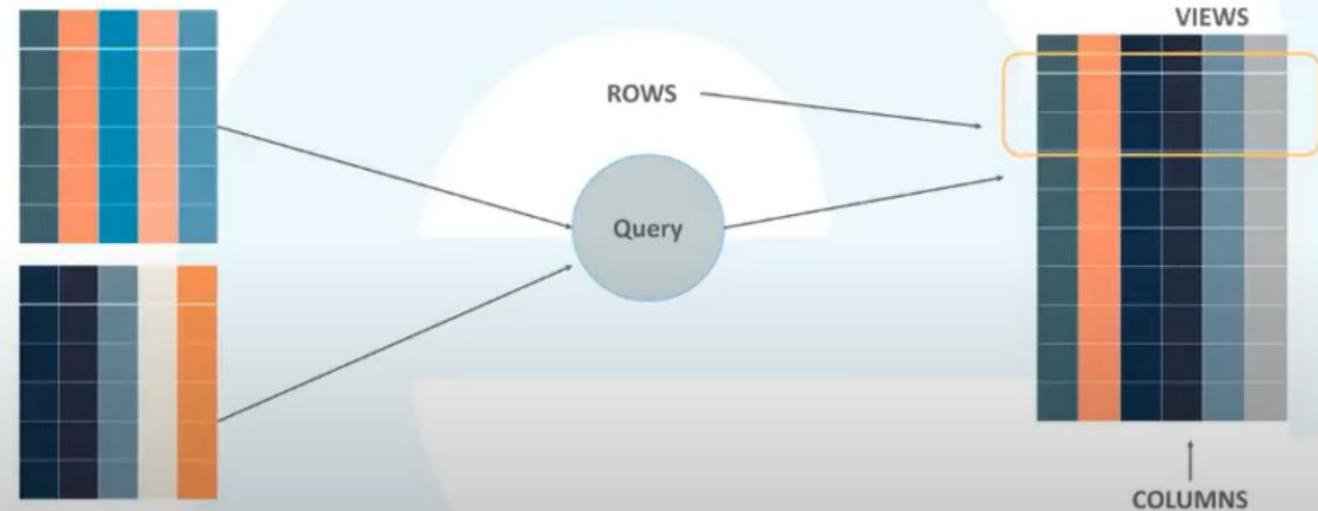
RIGHT JOIN

DBMS Interview Questions

Question 10

What do you understand by the view and mention the steps to create, update and drop a view?

A view is a virtual table which consists of a subset of data contained in a table. Since views are not present, it takes less space to store. View can have data of one or more tables combined and it depends on the relationship.



DBMS Interview Questions

Question 1

Write a query to create a duplicate table with and without data present?

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Consider you have a table named *Customers*, having details such as *CustomerID*, *CustomerName* and so on.

Now, if you want to create a duplicate table named '*DuplicateCustomer*' with the data present in it, you can mention the following query:

```
CREATE TABLE DuplicateCustomer AS SELECT * FROM  
Customers;
```

Similarly, if you want to create a duplicate table without the data present, mention the following query:

```
CREATE TABLE DuplicateCustomer AS SELECT * FROM  
Customers WHERE 1=2;
```

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DBMS Interview Questions

Question 2

Mention a query to calculate the even and odd records from a table

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To write a query to calculate the even and odd records from a table, you can write two different queries by using the MOD function.

So, if you want to retrieve the even records from a table, you can write a query as follows:

```
SELECT CustomerID FROM (SELECT rowno,  
CustomerID from Customers) where  
mod(rowno,2)=0;
```

Similarly, if you want to retrieve the odd records from a table, you can write a query as follows:

```
SELECT CustomerID FROM (SELECT rowno,  
CustomerID from Customers) where  
mod(rowno,2)=1;
```



DBMS Interview Questions

Question 3

Write a query to remove duplicate rows from a table?

To remove duplicate rows from a table, you have to initially select the duplicate rows from the table without using the **DISTINCT keyword**.

So, to select the duplicate rows from the table, you can write a query as follows:

```
SELECT CustomerNumber FROM Customers WHERE
ROWID (SELECT MAX (rowid) FROM Customers C
WHERE CustomerNumber = C.CustomerNumber);
```

Now, to delete the duplicate records from the Customers table, mention the following query:

```
DELETE FROM Customers WHERE ROWID(SELECT MAX
(rowid) FROM Customers C WHERE CustomerNumber =
C.CustomerNumber);
```

SQL Interview Questions

Question 1

What is the difference between DELETE and TRUNCATE statements?

Delete

- ✓ Delete command is used to delete a row in a table.
- ✓ You can rollback data after using delete statement.
- ✓ It is a DML command.
- ✓ It is slower than truncate statement.

Truncate

- ✓ Truncate is used to delete all the rows from a table.
- ✓ You cannot rollback data.
- ✓ It is a DDL command.
- ✓ It is faster.

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SQL Interview Questions

Question 4

What do you mean by table and field in SQL?

Table

A table refers to a collection of data in an organised manner in form of rows and columns.

Field

A field refers to the number of columns in a table.

EMPLOYEE_INFORMATION

EMP_NO	EMP_NAME	EMP_COUNTRY	EMP_AGE
1	Rohan	India	23
2	Rohan	India	34
3	Anay	India	27
4	Suhana	India	25

Table

Field

SQL Interview Questions

Question 6

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

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Char

Char is used for strings of fixed length. For example, char(10) can only store 10 characters and will not be able to store a string of any other length.

Varchar2

Varchar2 is used for character strings of variable length. For example varchar2(10) can store any length i.e. 6,8,2 in this variable.

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SQL Interview Questions

Question 7

What is a Primary key?

A set of attributes that can be used to uniquely identify every tuple is a primary key. So, if there are 3-4 candidate keys present in a relationship, then out of those, one can be chosen as a **primary key**.

Primary Key

EMPLOYEE_INFORMATION			
EMP_NO	EMP_NAME	EMP_COUNTRY	EMP_AGE
1	Rohan	India	23
2	Rohan	India	34
3	Anay	India	27
4	Suhana	India	25

SQL Interview Questions

Question 8

What are Constraints?

Constraints are used to specify the limit on the data type of the table. It can be specified while creating or altering the table statement.

NOT NULL

Ensures that a NULL value cannot be stored in a column

UNIQUE

This constraint makes sure that all the values in a column are different

CHECK

This constraint ensures that all the values in a column satisfy a specific condition.

DEFAULT

This constraint consists of a set of default values for a column when no value is specified.

INDEX

This constraint is used to create and retrieve data from the database very quickly.

SQL Interview Questions

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INDEX

This constraint is used to create and retrieve data from the database very quickly.

SQL Interview Questions

Question 9

What is the difference between SQL and MySQL?

SQL

is a standard language which stands for Structured Query Language based on the English language. SQL is the core of relational database which is used for accessing and managing database.

V/S

MySQL

MySQL is an open-source relational database management system that works on many platforms. It provides multi-user access to support many storage engines and is backed by Oracle.

SQL Interview Questions

Question 10

What is a Unique key?

Uniquely identifies a single row in the table.

Multiple values allowed per table.

Null values are allowed.

Duplicate values are not allowed.



SQL Interview Questions

Question 11

What is a Foreign key?

Foreign key maintains referential integrity by enforcing a link between the data in two tables.

The foreign key in the child table references the primary key in the parent table.

The foreign key constraint prevents actions that would destroy links between the child and parent tables.



SQL Interview Questions

Question 11

What is a Foreign key?

Foreign key maintains referential integrity by enforcing a link between the data in two tables.

The foreign key in the child table references the primary key in the parent table.

The foreign key constraint prevents actions that would destroy links between the child and parent tables.

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SQL Interview Questions

Question 13

What is the difference between clustered and non clustered index in SQL?

Clustered Index

- ✓ Clustered index is used for easy retrieval of data from the database and is faster.
- ✓ Clustered index alters the way records are stored in a database as it sorts out rows by the column which is set to be clustered index
- ✓ One table can only have one clustered index.

Non Clustered Index

- ✓ Non-Clustered index is used for easy retrieval of data from the database and is slower.
- ✓ Non clustered index does not alter the way it was stored but it creates a separate object within a table which points back to the original table rows after searching..
- ✓ One table can have many non-clustered indexes.

SQL Interview Questions

Question 14

Write a SQL query to display the current date?

In SQL, there is a built-in function called **GetDate()** which helps to return the current timestamp/date.

Syntax

GETDATE ()

Applies To

SQL Server 2017, SQL Server 2016, SQL Server 2014, SQL Server 2012, SQL Server 2008 R2, SQL Server 2008, SQL Server 2005

Example

```
SELECT GETDATE();  
Result: '2019-03-18 18:17:28.160'
```

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SQL Interview Questions

Question 15

What are the different types of joins?



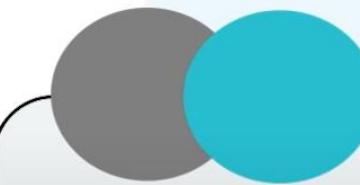
This join returns those records which have matching values in both the tables.

INNER JOIN



This join returns all those records which either have a match in the left or the right table.

FULL JOIN



This join returns records from the left table, and also those records which satisfy the condition from the right table.

LEFT JOIN



This join returns records from the right table, and also those records which satisfy the condition from the left table.

RIGHT JOIN

SQL Interview Questions

Question 17

What are Entities and Relationships?

Entities

A person, place, or thing in the real world about which data can be stored in a database. Tables store data that represents one type of entity. For example – A bank database has a customer table to store customer information. Customer table stores this information as a set of attributes (columns within the table) for each customer.

Relationships

Relation or links between entities that have something to do with each other. For example – The customer name is related to the customer account number and contact information, which might be in the same table. There can also be relationships between separate tables (for example, customer to accounts).

SQL Interview Questions

Question 17

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SQL Interview Questions

Question 20

What is Normalization and what are the advantages of it?

Normalization is the process of organizing data to avoid duplication and redundancy.

Advantages

- Better database organization
- More tables with smaller rows
- Efficient data access
- Greater flexibility for queries
- Quickly find the information
- Easier to implement security
- Allows easy modification
- Reduction of redundant and duplicate data
- More compact database
- Ensure consistent data after modification

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SQL Interview Questions

Question 21

What is the difference between DROP and TRUNCATE commands?

DROP

Removes a table and it cannot be rolled back from the database

Syntax

`DROP object object_name`

TRUNCATE

Removes all rows from the table and cannot be rolled back into the database;

Syntax

`TRUNCATE TABLE table_name;`

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SQL Interview Questions

Question 24

What do you mean by “Trigger” in SQL?

Trigger in SQL are a special type of stored procedures that are defined to execute automatically in place or after data modifications. It allows you to execute a batch of code when an insert, update or any other query is executed against a specific table.

BEFORE INSERT – activated before data is inserted into the table

AFTER INSERT – activated after data is inserted into the table

BEFORE UPDATE – activated before data in the table is updated

AFTER UPDATE – activated after the data in table is updated

BEFORE DELETE – activated before data is removed from the table

AFTER DELETE – activated after data is removed from the table

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SQL Interview Questions

Question 25

What are the different operators available in SQL?

- 01 **Arithmetic Operators**
- 02 **Bitwise Operators**
- 03 **Comparison Operators**
- 04 **Compound Operators**
- 05 **Logical Operators**

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SQL Interview Questions

Question 27

What is the difference between cross join and natural join?

Cross Join

Produces the cross product or Cartesian product of two tables

Natural Join

Based on all the columns having the same name and data types in both the tables.

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SQL Interview Questions

Question 29

What are the different types of a subquery?

Correlated Subquery

These are queries which select the data from a table referenced in the outer query. It is not considered as an independent query as it refers to another table and refers the column in a table.

Non - Correlated Subquery

This query is an independent query where the output of subquery is substituted in the main query.



SQL Interview Questions

Question 31

Write a SQL query to find the names of employees that begin with 'A'?

To display name of the employees that begin with 'A', type in the below command:

```
SELECT * FROM Table_name WHERE EmpName like 'A%'
```



SQL Interview Questions

Question 32

Write a SQL query to get the third highest salary of an employee from employee_table?

You can write a query as follows:

```
SELECT TOP 1 salary
FROM(
SELECT TOP 3 salary
FROM employee_table
ORDER BY salary DESC) AS emp
ORDER BY salary ASC;
```

SQL Interview Questions

Question 33

What is the need for group functions in SQL?

Group functions work on the set of rows and returns one result per group.

Some of the commonly used group functions are:

- 1 AVG
- 2 COUNT
- 3 MAX
- 4 MIN
- 5 SUM
- 6 VARIANCE

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SQL Interview Questions

Question 33

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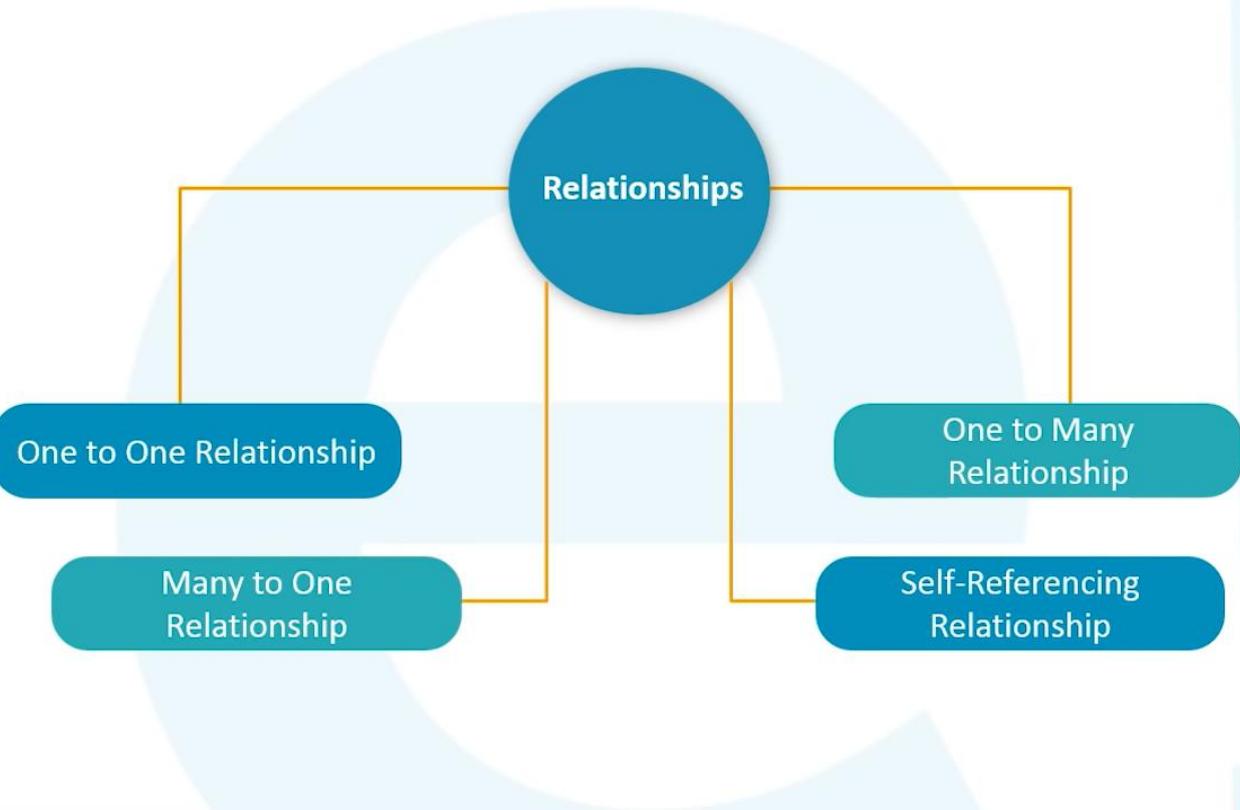
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SQL Interview Questions

Question 34

What is a Relationship and what are the different type of relationships?

Relation or links are between entities that have something to do with each other. Relationships are defined as the connection between the tables in a database.





SQL Interview Questions

Question 35

How can you insert NULL values in a column while inserting the data?

NULL values can be inserted in the following ways:

01

Implicitly by omitting column from column list

02

Explicitly by specifying NULL keyword in the VALUES clause

SQL Interview Questions

Question 36

What is the main difference between 'BETWEEN' and 'IN' condition operators?

BETWEEN

Used to display rows based on a range of values in a row

Example of BETWEEN:

```
SELECT * FROM Students where ROLL_NO BETWEEN 10  
AND 50
```

IN

Used to check for values contained in a specific set of values.

Example of IN:

```
SELECT * FROM students where ROLL_NO IN  
(8,15,25);
```

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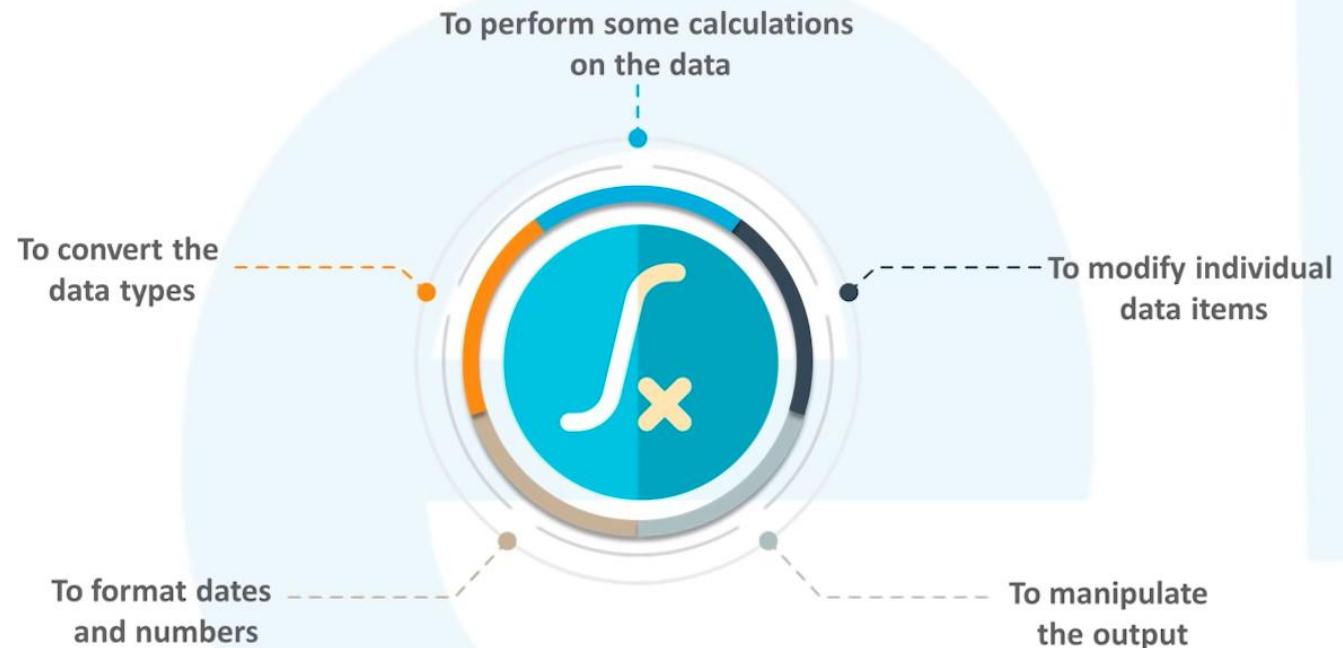
SQL Interview Questions

Question 37

Why are SQL functions used?

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SQL functions are used for the following purposes:



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SQL Interview Questions

Question 38

What is the need of MERGE statement?

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MERGE

Allows conditional update or insertion of data into a table.

It performs an UPDATE if a row exists, or an INSERT if the row does not exist.

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SQL Interview Questions

Question 39

What do you mean by recursive stored procedure?

Recursive stored procedure refers to a stored procedure which calls by itself until it reaches some boundary condition.

This recursive function or procedure helps the programmers to use the same set of code n number of times.



SQL Interview Questions

Question 40

What is CLAUSE in SQL?

SQL clause helps to limit the result set by providing a condition to the query. A clause helps to filter the rows from the entire set of records.

Example:

WHERE & HAVING clause

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SQL Interview Questions

Question 41

What is the difference between 'HAVING' CLAUSE and a 'WHERE' CLAUSE?

HAVING CLAUSE

Can be used only with SELECT statement. It is usually used in a GROUP BY clause.

WHERE CLAUSE

WHERE Clause is applied to each row before they are a part of the GROUP BY function in a query.

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SQL Interview Questions

Question 44

How can you fetch common records from two tables?

You can fetch common records from two tables using INTERSECT.

Syntax

```
SELECT column1 , column2 ....  
FROM table_names  
WHERE condition
```

INTERSECT

```
SELECT column1 , column2 ....  
FROM table_names  
WHERE condition
```

Example

```
Select studentID from student INTERSECT Select  
StudentID from Exam
```

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SQL Interview Questions

Question 45

List some case manipulation functions in SQL.

LOWER

This function returns the string in lowercase. It takes a string as an argument and returns it by converting it into lower case.

Syntax: LOWER('string')

UPPER

This function returns the string in uppercase. It takes a string as an argument and returns it by converting it into uppercase.

Syntax: UPPER('string')

INITCAP

This function returns the string with the first letter in uppercase and rest of the letters in lowercase.

Syntax: INITCAP('string')

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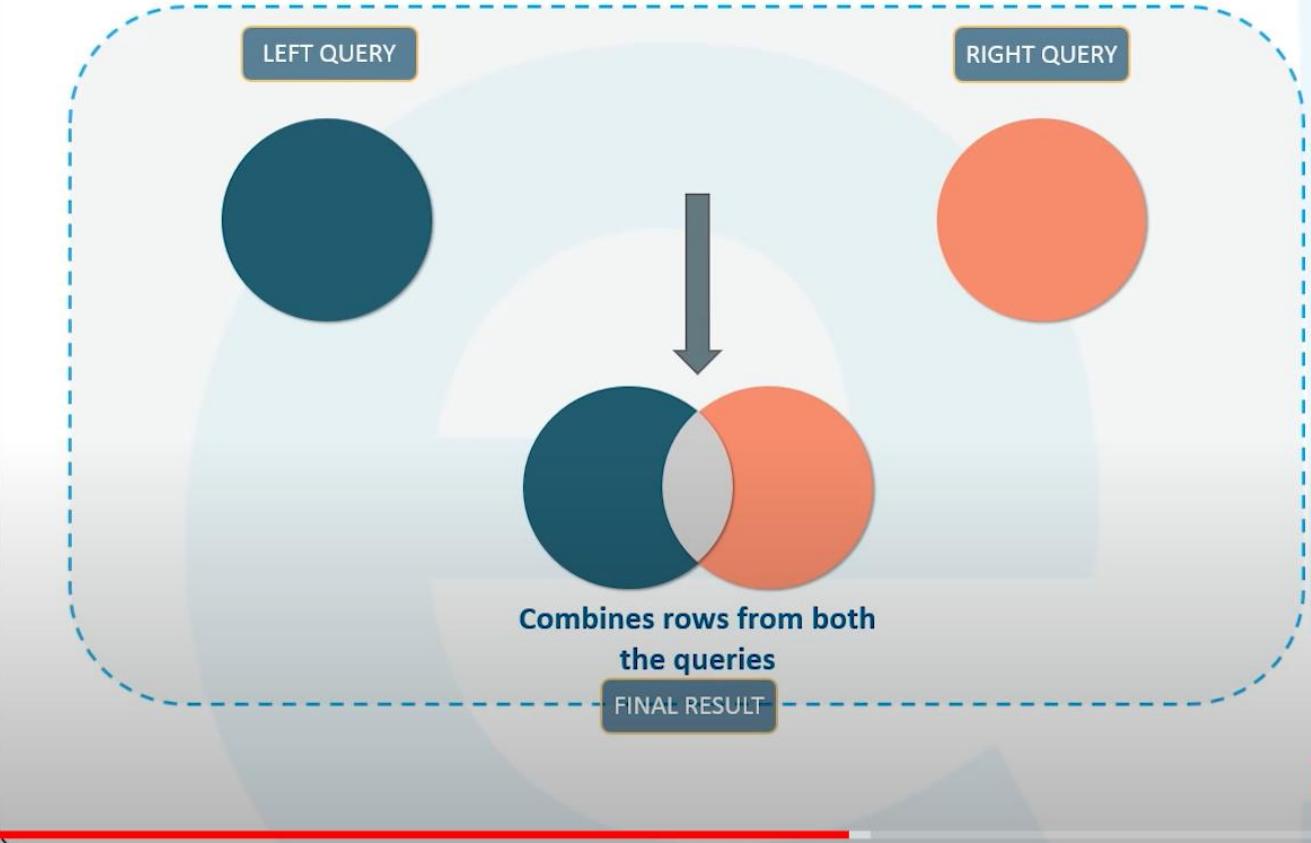
SQL Interview Questions

Question 46

What are the different set operators available in SQL?

Set Operations

UNION



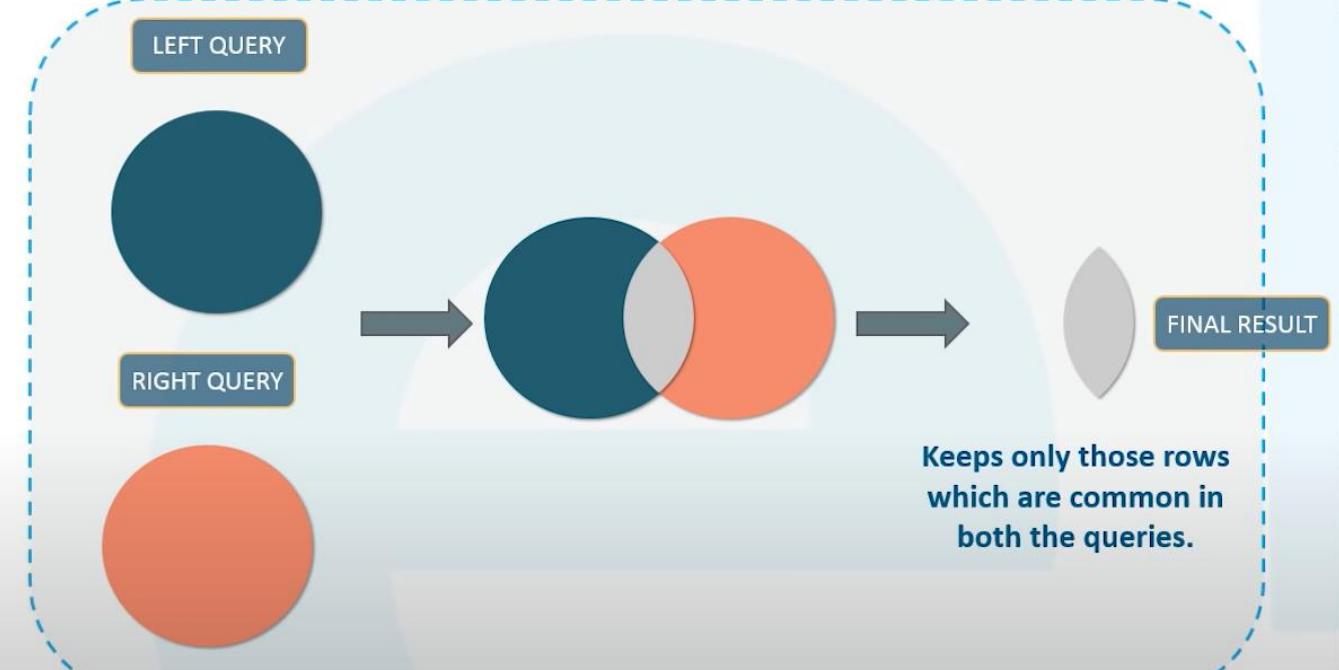
SQL Interview Questions

Question 46

What are the different set operators available in SQL?

Set Operations

INTERSECT



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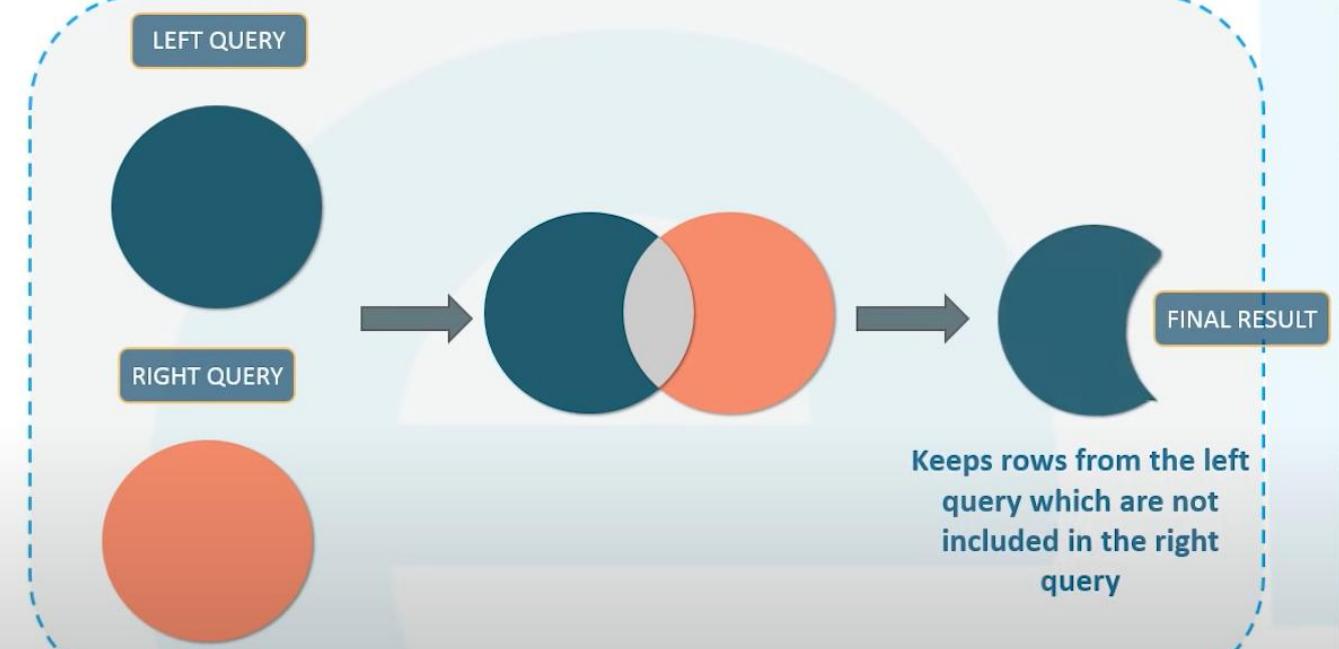
SQL Interview Questions

Question 46

What are the different set operators available in SQL?

Set Operations

MINUS



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SQL Interview Questions

Question 47

What is an ALIAS command?

ALIAS name 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.

Example

```
Select emp.empID, dept.Result from employee  
emp, department as dept where  
emp.empID=dept.empID
```

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SQL Interview Questions

Question 48

What are aggregate and scalar functions?

AGGREGATE FUNCTIONS

Used to evaluate mathematical calculation and returns a single value. These calculations are done from the columns in a table.

Example : MAX(), COUNT()

SCALAR FUNCTIONS

Scalar functions return a single value based on the input value.

Example : UCASE(), NOW()

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SQL Interview Questions

Question 49

How can you fetch alternate records from a table?

You can fetch alternate records i.e. both odd and even row numbers.

Example : To display even numbers, use the following command:

```
Select studentId from (Select rowno, studentId  
from student) where mod(rowno,2)=0
```

Now, to display odd numbers:

```
Select studentId from (Select rowno, studentId  
from student) where mod(rowno,2)=1
```

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SQL Interview Questions

Question 50

Name the operator which is used in the query for pattern matching?

LIKE operator is used for pattern matching.

% – It matches zero or more characters.

Example :

```
SELECT * FROM students WHERE studentname LIKE  
'a%'
```

_ – It matches exactly one character.

Example :

```
SELECT * FROM student WHERE studentname LIKE  
'abc_'
```

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SQL Interview Questions

Question 53

What is the main difference between SQL and PL/SQL?

SQL

is a query language that allows you to issue a single query or execute a single INSERT/UPDATE/DELETE

V/S

PL/SQL

is Oracle's "Procedural Language" SQL, which allows you to write a full program (loops, variables, etc.) to accomplish multiple operations such as SELECTS/INSERTS/UPDATES/DELETES.

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SQL Interview Questions

Question 55

What are Views used for?

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A view refers to a logical snapshot based on a table or another view.

It is used for the following reasons:

01 Restricting access to data

02 Making complex queries simple

03 Ensuring data independence

04 Providing different views of same data

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SQL Interview Questions

Question 56

What is a Stored Procedure?

Stored Procedures

A function which consists of many SQL statements to access the database system.

Several SQL statements are consolidated into a stored procedure and are executed whenever and wherever required.

This saves time and avoid writing code again and again.

SQL Interview Questions

Question 57

List some advantages and disadvantages of Stored Procedure.

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Advantages

A Stored Procedure can be used as a modular programming which means create once, store and call for several times whenever it is required. This supports faster execution. It also reduces network traffic and provides better security to the data.

Disadvantages

The only disadvantage of Stored Procedure is that it can be executed only in the database and utilizes more memory in the database server.

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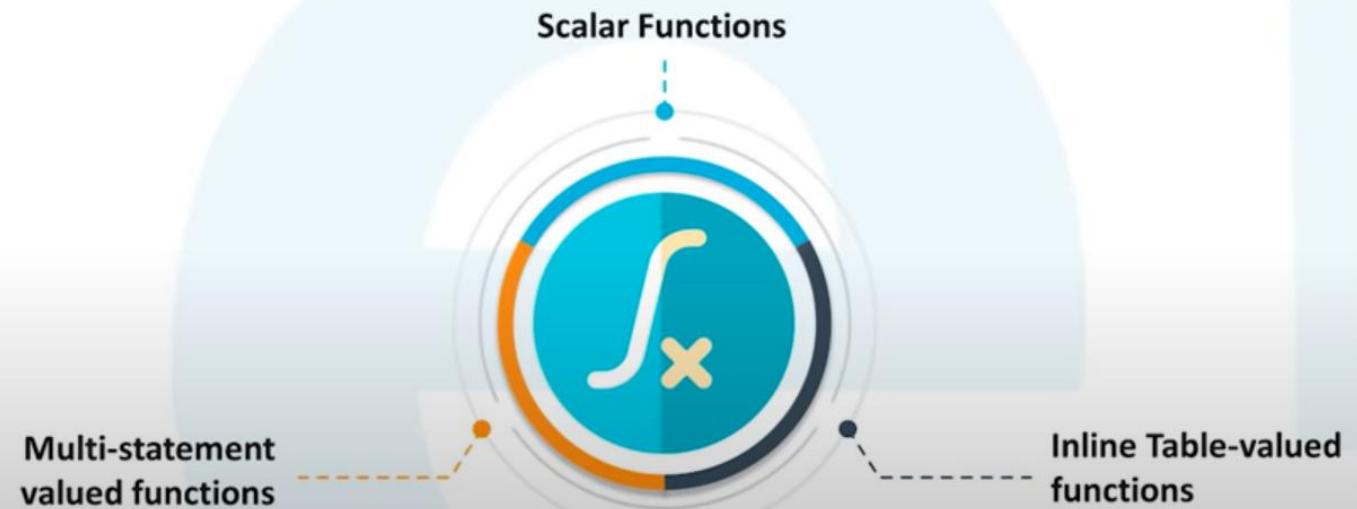


SQL Interview Questions

Question 58

List all the types of user-defined functions.

There are three types of user-defined functions.



SQL Interview Questions

Question 59

What do you mean by Collation?

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Collation is defined as a set of rules that determine how data can be sorted as well as compared.

Character data is sorted using the rules that define the correct character sequence along with options for specifying case-sensitivity, character width etc.

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SQL Interview Questions

Question 61

What are Local and Global variables?

Local Variables

These variables can be used or exist only inside the function. These variables are not used or referred by any other function.

Global Variables

These variables are the variables which can be accessed throughout the program. Global variables cannot be created whenever that function is called.

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SQL Interview Questions

Question 62

What is Auto Increment in SQL?

Allows the user to create a unique number to get generated whenever a new record is inserted into the table.

This keyword is usually required whenever PRIMARY KEY is used.

AUTO INCREMENT keyword can be used in Oracle and IDENTITY keyword can be used in SQL SERVER.

SQL Interview Questions

Question 64

What are the different authentication modes in SQL Server? How can it be changed?

Windows Mode

Mixed Mode

Steps to change authentication mode in SQL Server:

- Click Start-> Programs-> Microsoft SQL Server and click SQL Enterprise Manager to run SQL Enterprise Manager from the Microsoft SQL Server program group.
- Then select the server from the Tools menu.
- Select SQL Server Configuration Properties, and choose the Security page.

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SQL Interview Questions

Question 65

What are STUFF and
REPLACE function?

STUFF FUNCTION

This function is used to overwrite existing character or inserts a string into another string.

```
STUFF(string_expression,start, length,  
replacement_characters)
```

REPLACE FUNCTION

This function is used to replace the existing characters of all the occurrences.

```
REPLACE (string_expression, search_string,  
replacement_string)
```

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