

Database Developer Interview Questions And Answers Guide.



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Database Developer Job Interview Preparation Guide.

Question # 1

Please explain what is Database Testing?

Answer:-

It is AKA back-end testing or data testing.

Database testing involves in verifying the integrity of data in the front end with the data present in the back end. It validates the schema, database tables, columns, indexes, stored procedures, triggers, data duplication, orphan records, junk records. It involves in updating records in a database and verifying the same on the front end.

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Question # 2

Explain me what are the different DDL commands in SQL?

Answer:-

DDL commands are used to define or alter the structure of the database.

- * CREATE: To create databases and database objects
- * ALTER: To alter existing database objects
- * DROP: To drop databases and databases objects
- * TRUNCATE: To remove all records from a table but not its database structure
- * RENAME: To rename database objects

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Question # 3

Tell us what is a temp table?

Answer:-

A temp table is a temporary storage structure to store the data temporarily.

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Question # 4

Tell me what is a Composite PRIMARY KEY?

Answer:-

Composite PRIMARY KEY is a primary key created on more than one column (combination of multiple fields) in a table.

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Question # 5

Do you know SQL Data Types?

Answer:-

In SQL Server, each column in a database table has a name and a data type. We need to decide what type of data to store inside each and every column of a table while creating a SQL table.

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Question # 6

Tell us what is the difference between Delete, Truncate and Drop command?

Answer:-

The difference between the Delete, Truncate and Drop command is

- * Delete command is a DML command, it is used to delete rows from a table. It can be rolled back.
- * Truncate is a DDL command, it is used to delete all the rows from the table and free the space containing the table. It can't be rolled back.
- * Drop is a DDL command, it removes the complete data along with the table structure (unlike truncate command that removes only the rows). All the tables' rows, indexes, and privileges will also be removed.



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Question # 7

Tell me what are aggregate functions in SQL?

Answer:-

SQL aggregate functions return a single value, calculated from values in a column. Some of the aggregate functions in SQL are as follows

- * AVG() - This function returns the average value
- * COUNT() - This function returns the number of rows
- * MAX() - This function returns the largest value
- * MIN() - This function returns the smallest value
- * ROUND() - This function rounds a numeric field to the number of decimals specified
- * SUM() - This function returns the sum

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Question # 8

Tell us what do you mean by table and field in SQL?

Answer:-

A table refers to a collection of data in an organised manner in form of rows and columns. A field refers to the number of columns in a table. For example:

Table: StudentInformation

Field: Stu Id, Stu Name, Stu Marks

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Question # 9

Tell me what do you mean by ROWID ?

Answer:-

It's a 18 character long pseudo column attached with each row of a table.

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Question # 10

Can you explain me what is a Database?

Answer:-

A database is a collection of information in an organized form for faster and better access, storage and manipulation. It can also be defined as a collection of tables, schema, views and other database objects.

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Question # 11

Tell me what are the popular Database Management Systems in the IT Industry?

Answer:-

- * Oracle,
- * MySQL,
- * Microsoft SQL Server,
- * PostgreSQL,
- * Sybase,
- * MongoDB,
- * DB2, and
- * Microsoft Access etc.,

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Question # 12

Tell me what are the different DCL commands in SQL?

Answer:-

DCL commands are used to create roles, grant permission and control access to the database objects.

- * GRANT: To provide user access
- * DENY: To deny permissions to users
- * REVOKE: To remove user access

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Question # 13

Tell us what is a Subquery?

Answer:-

A Subquery is a SQL query within another query. It is a subset of a Select statement whose return values are used in filtering the conditions of the main query.

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Question # 14

Explain me what are SQL constraints?

**Answer:-**

SQL constraints are the set of rules that enforced some restriction while inserting, deleting or updating of data in the databases.

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Question # 15

Tell us what is the difference between UNIQUE and PRIMARY KEY constraints?

Answer:-

There should be only one PRIMARY KEY in a table whereas there can be any number of UNIQUE Keys. PRIMARY KEY doesn't allow NULL values whereas Unique key allows NULL values.

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Question # 16

Tell us what is a DEFAULT constraint?

Answer:-

DEFAULT constraint is used to include a default value in a column when no value is supplied at the time of inserting a record.

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Question # 17

Tell me which TCP/IP port does SQL Server run?

Answer:-

By default it is 1433

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Question # 18

Tell us what is the difference between Having and Where clause?

Answer:-

Where clause is used to fetch data from a database that specifies particular criteria whereas a Having clause is used along with 'GROUP BY' to fetch data that meets particular criteria specified by the Aggregate functions. Where clause cannot be used with Aggregate functions, but the Having clause can.

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Question # 19

Tell me what are the three ways that Dynamic SQL can be executed?

Answer:-

- * Writing a query with parameters.
- * Using EXEC.
- * Using sp_executesql.

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Question # 20

Explain me what do you mean by data integrity?

Answer:-

Data Integrity defines the accuracy as well as the consistency of the data stored in a database. It also defines integrity constraints to enforce business rules on the data when it is entered into an application or a database.

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Question # 21

Tell me what is an Index?

Answer:-

An index refers to a performance tuning method of allowing faster retrieval of records from the table. An index creates an entry for each value and hence it will be faster to retrieve data.

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Question # 22

Do you know what is the difference between GUI Testing and Database Testing?

Answer:-

- * GUI Testing is AKA User Interface Testing or Front-end testing
- * Database Testing is AKA back-end testing or data testing.
- * GUI Testing deals with all the testable items that are open to the user to interaction such as Menus, Forms etc.
- * Database Testing deals with all the testable items that are generally hidden from the user.
- * The tester who is performing GUI Testing doesn't need to know Structured Query Language
- * The tester who is performing Database Testing needs to know Structured Query Language
- * GUI Testing includes invalidating the text boxes, check boxes, buttons, drop-downs, forms etc., majorly the look and feel of the overall application
- * Database Testing involves in verifying the integrity of data in the front end with the data present in the back end. It validates the schema, database tables, columns, indexes, stored procedures, triggers, data duplication, orphan records, junk records. It involves in updating records in a database and verifying the same on the front



end.

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Question # 23

Tell us what is RDBMS?

Answer:-

RDBMS stands for Relational Database Management System. RDBMS is a database management system (DBMS) that is based on the relational model. Data from relational database can be accessed using Structured Query Language (SQL)

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Question # 24

Tell us what is a View?

Answer:-

A view is like a subset of a table which is stored logically in a database. A view is a virtual table. It contains rows and columns similar to a real table. The fields in the view are fields from one or more real tables. Views do not contain data of their own. They are used to restrict access to the database or to hide data complexity.

```
CREATE VIEW view_name AS SELECT column_name1, column_name2 FROM table_name WHERE CONDITION;
```

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Question # 25

Tell us what are the different types of joins?

Answer:-

Types of Joins are as follows:

- * INNER JOIN
- * LEFT JOIN
- * RIGHT JOIN
- * OUTER JOIN

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Question # 26

Tell me can a table contain multiple FOREIGN KEY's?

Answer:-

A table can have many FOREIGN KEY's.

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Question # 27

Tell me what is a CHECK constraint?

Answer:-

A CHECK constraint is used to limit the value that is accepted by one or more columns.

E.g. 'Age' field should contain only the value greater than 18.

```
CREATE TABLE EMP_DETAILS(EmpID int NOT NULL, NAME VARCHAR (30) NOT NULL, Age INT CHECK (AGE > 18), PRIMARY KEY (EmpID));
```

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Question # 28

Explain me the SELECT INTO statement?

Answer:-

The SELECT INTO statement copies data from one table into a new table. The new table will be created with the column-names and types as defined in the old table. You can create new column names using the AS clause.

```
SELECT * INTO newtable FROM oldtable WHERE condition;
```

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Question # 29

Tell me when are we going to use truncate and delete?

Answer:-

TRUNCATE is a DDL command, whereas DELETE is a DML command.

We can't execute a trigger in case of TRUNCATE whilst with DELETE, we can accomplish a trigger.

TRUNCATE is quicker than DELETE, for the reason that when we use DELETE to delete the data, at that time it store the whole statistics in the rollback gap on or after where we can get the data back after removal. In case of TRUNCATE, it will not store data in rollback gap and will unswervingly rub it out. TRUNCATE do not recover the deleted data.

We can use any condition in WHERE clause using DELETE but it is not possible with TRUNCATE.5.If a table is referenced by any foreign key constraints, then TRUNCATE won't work.

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Question # 30

Can you list the different type of joins?



Answer:-

There are various types of joins which are used to retrieve data between the tables. There are four types of joins, namely:

- * Joins - SQL interview Questions - Edureka Inner join: Inner Join in MySQL is the most common type of join. It is used to return all the rows from multiple tables where the join condition is satisfied.
- * Left Join: Left Join in MySQL is used to return all the rows from the left table but only the matching rows from the right table where the join condition is fulfilled.
- * Right Join: Right Join in MySQL is used to return all the rows from the right table but only the matching rows from the left table where the join condition is fulfilled.
- * Full Join: Full join returns all the records when there is a match in any of the tables. Therefore, it returns all the rows from the left-hand side table and all the rows from the right-hand side table.

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Question # 31

Tell me what is BCP? When is it used?

Answer:-

It is a tool used to duplicate enormous quantity of information from tables and views. It does not facsimile the structures same as foundation to target. BULK INSERT command helps to bring in a data folder into a record, table or view in a user-specific arrangement.

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Question # 32

Tell me what is the largest value that can be stored in a BYTE data field?

Answer:-

The largest number that can be represented in a single byte is 11111111 or 255. The number of possible values is 256 (i.e. 255 (the largest possible value) plus 1 (zero), or 28).

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Question # 33

Tell us what is a FOREIGN KEY?

Answer:-

A FOREIGN KEY is a key used to link two tables together. A FOREIGN KEY in a table is linked with the PRIMARY KEY of another table.

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Question # 34

Tell us what are the different TCL commands in SQL?

Answer:-

TCL commands are used to manage the changes made by DML statements.

- * COMMIT: To write and store the changes to the database
- * ROLLBACK: To restore the database since the last commit

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Question # 35

Do you know what is a Table in a Database?

Answer:-

A table is a database object used to store records in a field in the form of columns and rows that holds data.

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Question # 36

Do you know what is a Join?

Answer:-

Join is a query, which retrieves related columns or rows from multiple tables.

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Question # 37

Tell us what is a Unique constraint?

Answer:-

A unique constraint is used to ensure that there are no duplication values in the field/column.

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Question # 38

Tell me what is Normalization?

Answer:-

Normalization is the process of table design to minimize the data redundancy. There are different types of Normalization forms in SQL.

- * First Normal Form
- * Second Normal Form
- * Third Normal Form



* Boyce and Codd Normal Form

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Question # 39

Tell us what are Constraints?

Answer:-

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. The sample of constraints are:

- * NOT NULL
- * CHECK
- * DEFAULT
- * UNIQUE
- * PRIMARY KEY
- * FOREIGN KEY

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Question # 40

Tell us what is a Field in a Database?

Answer:-

A field in a Database table is a space allocated to store a particular record within a table.

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Question # 41

Tell me what is SQL NOT NULL constraint?

Answer:-

NOT NULL constraint is used to ensure that the value in the field cannot be a NULL

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Question # 42

Tell me what are the possible values that can be stored in a BOOLEAN data field?

Answer:-

TRUE and FALSE

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Question # 43

Explain me how are transactions used?

Answer:-

Transactions allow you to group SQL commands into a single unit. The transaction begins with a certain task and ends when all tasks within it are complete. The transaction completes successfully only if all commands within it complete successfully. The whole thing fails if one command fails. The BEGIN TRANSACTION, ROLLBACK TRANSACTION, and COMMIT TRANSACTION statements are used to work with transactions. A group of tasks starts with the begin statement. If any problems occur, the rollback command is executed to abort. If everything goes well, all commands are permanently executed via the commit statement.

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Question # 44

Tell me what is a Record in a Database?

Answer:-

A record (also called a row of data) is an ordered set of related data in a table.

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Question # 45

Explain me what is the difference between Union and Union All command?

Answer:-

This is one of the tricky SQL Interview Questions. Interviewer may ask you this question in another way as what are the advantages of Union All over Union.

Both Union and Union All concatenate the result of two tables but the way these two queries handle duplicates are different.

Union: It omits duplicate records and returns only distinct result set of two or more select statements.

Union All: It returns all the rows including duplicates in the result set of different select statements.

Performance wise Union All is faster than Union, Since Union All doesn't remove duplicates. Union query checks the duplicate values which consumes some time to remove the duplicate records.

Assume: Table1 has 10 records, Table2 has 10 records. Last record from both the tables are same.

If you run Union query.

```
SELECT * FROM Table1
```

```
UNION
```

```
SELECT * FROM Table2
```

Output: Total 19 records

If you run Union All query.

```
SELECT * FROM Table1
```

```
UNION ALL
```



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SELECT * FROM Table2

Output: Total 20 records

Data type of all the columns in the two tables should be same.

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Question # 46

Tell me why DBAs don't like cursors?

Answer:-

I like to phrase this interview question this way because I'm not saying the DBA is right - I'm just asking the developer to explain the DBA's point of view. I don't have a problem with the developer rolling their eyes as they explain the answer, but I have a problem with the developer being surprised by the question.

The candidate gets bonus points if they seem even vaguely aware of the terms "set-based processing" and "row-based processing", but that's purely a bonus. (I wish I could say that these concepts are requirements, but in today's economic market, companies don't always want to pay top dollar to get the best candidates.)

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Question # 47

Tell us what are the different types of SQL commands?

Answer:-

SQL commands are segregated into following types:

- * DDL - Data Definition Language
- * DML - Data Manipulation Language
- * DQL - Data Query Language
- * DCL - Data Control Language
- * TCL - Transaction Control Language

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Question # 48

Explain me what is a Primary Key?

Answer:-

A PRIMARY KEY constraint uniquely identifies each record in a database table. All columns participating in a primary key constraint must not contain NULL values.

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Question # 49

Tell me referential integrity and where it can be enforced?

Answer:-

If they stumble on the question, circle back to the Orders and OrderDetails tables we used as examples earlier. What's an orphan? How do we make sure that we don't end up with OrderDetails for records with no matching Order record? Where are all the places we could enforce referential integrity? (Think foreign keys, triggers, the application, or not at all.) Have you worked in places where there was no referential integrity, and what problems did you run into?

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Question # 50

Tell us what is a Trigger?

Answer:-

A Trigger is a SQL procedure that initiates an action in response to an event (Insert, Delete or Update) occurs. When a new Employee is added to an Employee_Details table, new records will be created in the relevant tables such as Employee_Payroll, Employee_Time_Sheet etc.,

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Question # 51

Tell us what is the difference between an inner and outer join?

Answer:-

An inner join returns rows when there is at least some matching data between two (or more) tables that are being compared.

An outer join returns rows from both tables that include the records that are unmatched from one or both the tables.

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Question # 52

Tell us what is SQL?

Answer:-

SQL Overview: SQL stands for Structured Query Language. It is an American National Standard Institute (ANSI) standard. It is a standard language for accessing and manipulating databases. Using SQL, some of the action we could do are to create databases, tables, stored procedures (SP's), execute queries, retrieve, insert, update, delete data against a database.

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Question # 53

Tell me what are Operators available in SQL?



Answer:-

SQL Operator is a reserved word used primarily in an SQL statement's WHERE clause to perform operations, such as arithmetic operations and comparisons. These are used to specify conditions in an SQL statement.

There are three types of Operators.

- * Arithmetic Operators
- * Comparison Operators
- * Logical Operators

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Question # 54

Explain me what is a column in a Table?

Answer:-

A column is a vertical entity in a table that contains all information associated with a specific field in a table.

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Question # 55

Tell me what are DMVs?

Answer:-

Dynamic management views (DMVs) and functions return server state information that can be used to monitor the health of a server instance, diagnose problems, and tune performance; that is, they let you see what is going on inside SQL Server. They were introduced in SQL Server 2005 as an alternative to system tables. One example is viewing operating system wait statistics via this query:

```
SELECT * FROM sys.dm_os_wait_stats;
```

Another example is examining current sessions, much like the sp_who2 command:

```
SELECT * FROM sys.dm_exec_sessions;
```

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Question # 56

Please explain what are string functions in SQL?

Answer:-

SQL string functions are used primarily for string manipulation. Some of the widely used SQL string functions are

- * LEN() - It returns the length of the value in a text field
- * LOWER() - It converts character data to lower case
- * UPPER() - It converts character data to upper case
- * SUBSTRING() - It extracts characters from a text field
- * LTRIM() - It is to remove all whitespace from the beginning of the string
- * RTRIM() - It is to remove all whitespace at the end of the string
- * CONCAT() - Concatenate function combines multiple character strings together
- * REPLACE() - To update the content of a string.

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Question # 57

What are the steps needed to Create the scheduled job?

Answer:-

Steps to create a Scheduled Job :

- * Connect to the database of SQL server in SQL Server Management Studio. On the SQL Server Agent, we will find a Jobs folder.
- * Right click on jobs and choose Add New.
- * A New Job window will come into view. Give an associated name for the same.
- * Click next on the "Steps" in the left list of options. An SQL job can have multiple steps either in the form of SQL declaration or a stored practice call.
- * Click on the "Schedules" in the left list of options. An SQL job can comprise of one or supplementary schedules. It is basically the instance at which SQL job will jog itself. We can spell out returning schedules also.

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Question # 58

Do you know what are the constraints available in SQL?

Answer:-

Some of the constraints in SQL are - Primary Key, Foreign Key, Unique Key, SQL Not Null, Default, Check and Index constraint.

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Question # 59

Please explain what is DBMS?

Answer:-

Database Management System is a collection of programs that enables a user to store, retrieve, update and delete information from a database.

[Read More Answers.](#)

Question # 60

Tell me how to avoid duplicate records in a query?

**Answer:-**

The SQL SELECT DISTINCT query is used to return only unique values. It eliminates all the duplicated values.

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Question # 61

Explain me what is Stored procedure?

Answer:-

A Stored Procedure is a collection of SQL statements that have been created and stored in the database to perform a particular task. The stored procedure accepts input parameters and processes them and returns a single value such as a number or text value or a result set (set of rows).

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Question # 62

Tell us what are the different DML commands in SQL?

Answer:-

DML commands are used for managing data present in the database.

- * SELECT: To select specific data from a database
- * INSERT: To insert new records into a table
- * UPDATE: To update existing records
- * DELETE: To delete existing records from a table

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Question # 63

Can you tell me the ACID properties and explain?

Answer:-

Following are the four properties of ACID. These guarantees that the database transactions are processed reliably.

- * Atomicity
- * Consistency
- * Isolation
- * Durability

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Question # 64

Tell us what is an Index?

Answer:-

An index is used to speed up the performance of queries. It makes faster retrieval of data from the table. The index can be created on one column or a group of columns.

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Question # 65

Tell me can a table contain multiple PRIMARY KEY's?

Answer:-

The short answer is no, a table is not allowed to contain multiple primary keys but it allows to have one composite primary key consisting of two or more columns.

[Read More Answers.](#)

Question # 66

Explain me what is the difference between Rename and Alias?

Answer:-

'Rename' is a permanent name given to a table or column

'Alias' is a temporary name given to a table or column.

[Read More Answers.](#)

Question # 67

Tell me what is the difference between NULL value, Zero, and Blank space?

Answer:-

As I mentioned earlier, Null value is field with no value which is different from zero value and blank space.

Null value is a field with no value.

Zero is a number

Blank space is the value we provide. The ASCII value of space is CHAR(32).

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Question # 68

Tell me what are the advantages of Views?

Answer:-

Some of the advantages of Views are



- * Views occupy no space
- * Views are used to simply retrieve the results of complicated queries that need to be executed often.
- * Views are used to restrict access to the database or to hide data complexity.

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Question # 69

Tell us how to Test for NULL Values?

Answer:-

A field with a NULL value is a field with no value. NULL value cannot be compared with other NULL values. Hence, It is not possible to test for NULL values with comparison operators, such as =, <, or >. For this, we have to use the IS NULL and IS NOT NULL operators.

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Question # 70

Please explain what is a NULL value?

Answer:-

A field with a NULL value is a field with no value. A NULL value is different from a zero value or a field that contains spaces. A field with a NULL value is one that has been left blank during record creation. Assume, there is a field in a table is optional and it is possible to insert a record without adding a value to the optional field then the field will be saved with a NULL value.

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