ASSIGNMENT 02

**1) Which field of the Customers table is the primary key?**

A **primary key** in a table is a column (or a set of columns) that uniquely identifies each record in the table. For the **Customers** table, the primary key is typically a field that can serve as a unique identifier for each customer.

* Common examples of primary keys include:
  + CustomerID: A unique number assigned to each customer.
  + SSN (Social Security Number): In some cases, this could be used in databases for customers in countries like the USA, where SSNs are unique to individuals.

The primary key is crucial because:

* It ensures that no two rows have the same value in the primary key column.
* It allows for fast data retrieval and linking tables together in relational databases.

In SQL, the primary key is defined during the creation of the table, like so:

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

CustomerName VARCHAR(255),

ContactNumber VARCHAR(15),

Email VARCHAR(255),

Address VARCHAR(255)

);

In the above example, the CustomerID field is the primary key.

**2) What is the 4th column of the Customers table?**

The 4th column of the **Customers** table refers to the fourth field (or attribute) that is defined during the table's creation. To know exactly what the 4th column is, you would need to look at the table structure.

For example, suppose the table is defined like this:

CREATE TABLE Customers (

CustomerID INT,

CustomerName VARCHAR(255),

ContactNumber VARCHAR(15),

Email VARCHAR(255),

Address VARCHAR(255)

);

Here, the 4th column is Email. You can also query the table’s structure to view all the columns, including the 4th one:

DESCRIBE Customers;

If you're working with a database management system (DBMS), running this query will list all the columns in the **Customers** table, and you'll be able to identify which one is the 4th.

**3) What is another word for row? For column?**

* **Row**: In database terminology, a **row** is also known as a **record** or a **tuple**. A row represents a single, complete set of related data in a table. For example, in the **Customers** table, a row would contain the data for one specific customer, including their ID, name, contact information, etc.

Example of a row (record):

CustomerID: 1 | CustomerName: John Doe | ContactNumber: 555-1234 | Email: john@example.com | Address: 123 Main St

* **Column**: A **column** is often referred to as a **field** or an **attribute**. A column contains data of a particular type for all records in the table. For instance, in the **Customers** table, the CustomerName column will contain the names of all customers.

Example of a column (field):

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CustomerName: John Doe, Jane Smith, Mike Johnson, ...

**4) Why isn’t it possible to see the first five rows of a table?**

If you're unable to view the first five rows of a table, it could be due to several reasons:

* **Permissions and Access Control**: If the database or table has restricted access, and you don't have the necessary permissions, you won't be able to query or view data. In a multi-user environment, database administrators can restrict who can view or modify specific tables. You might need the right **SELECT** privileges to retrieve data.
* **Empty Table**: The table could be empty, meaning no data has been inserted yet. When you run a query to fetch rows, such as:

sql

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SELECT \* FROM Customers LIMIT 5;

If there are no records in the table, you won’t see any rows. You can check if the table is empty using:

sql

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SELECT COUNT(\*) FROM Customers;

If this query returns 0, it means there are no records in the table.

* **Query Error or Data Filtering**: Sometimes, you might write a query that filters out rows unintentionally. For example, if you run a query with WHERE conditions, it may limit the results to a point where no rows match the criteria, like this:

sql

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SELECT \* FROM Customers WHERE CustomerID < 0;

Since CustomerID typically starts from 1, this query would return no rows.

* **Database Corruption or Connection Issues**: Sometimes, database issues such as corrupted tables or connection problems may prevent you from viewing the data. If the database is in an unstable state or there are connectivity issues between your application and the database server, it might fail to retrieve the data. In such cases, the database administrator needs to check the health of the system.
* **Deleted or Archived Data**: In some systems, older data may have been archived or deleted. If the first five rows you are trying to view no longer exist in the table (e.g., they have been deleted), then those rows won’t be available to view.

In summary, troubleshooting this issue requires you to:

1. Check the table's permissions.
2. Ensure the table contains data.
3. Verify that the query is written correctly.
4. Investigate any potential database connection or corruption issues.