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Fully Qualified Domains, Fully Qualified Tables Names and Taxonomies

Fully Qualified Domain (FQD) : In T-SQL a Fully Qualified Domain(FQD)is represented by a user-defined data type created using Create Type statement. This statement allows us to build a reusable, standardized data type that defines the structure and constraints for certain data (phone numbers, email addresses, and IDs).

It functions similarly to the ANSI SQL Create Domain command, which provide the same purpose in other relational systems like PostgreSQL or Oracle.

Example:

CREATE TYPE PhoneNumber FROM VARCHAR(20) NOT NULL;

This means anywhere we use this type, we follow this format and rules.

Benefits of Implementing FQDs within a Taxonomy: A taxonomy is a naming and organizational system that helps keep things consistent across a database. When we use fully Qualified Domains within a taxonomy, we make sure the same rules are followed everywhere:

- Consistency, Reusability, Governance, Integration, Compliance.
- Consistency: The same format and validation rules are used across different tables.
- Reusability: We can create the data type once and use it many times
- Governance: It's easier to control and document data definitions.
- Integration: Shared definitions make connecting data from different systems simpler.
- Compliance: Consistent data types make it easier to meet standards or audits.

Importance of Fully Qualified Table Names(FQTNs) : A Fully Qualified Table Name shows exactly where a table is located using format like

Server.Database.Schema.Table

It removes confusion when working across multiple databases or servers.

- It clarifies exactly which table the query is using.
- Referential Integrity which make sure relationships and joins reference the right tables.
- Scalability supports lager systems where data is stored on multiple servers
- Governance helps manage access control and track where data is coming from.

Real-World Implications

In real-world systems, companies use CREATE TYPE in T-SQL to define standard data types like emails and phone numbers, keeping data consistent across all tables. Fully Qualified Table Names help connect data between different databases, such as HR and Sales, without confusion. These practices make databases more organized, accurate, and easier to manage.

My Contribution to the Presentation

I was responsible for creating and presenting the two slides about Fully Qualified Domains and Taxonomies.
In the slide 6, I explained how a reusable domain can standardize phone number formatting across different tables using the Create Domain command. This helps keep all phone numbers consistent and improves overall data quality.
In the slide 7, I described how taxonomies organize data in a structured way starting from the database level down to schemas, tables, columns, and domains. This shows how everything is connected and helps maintain a clear, consistent system design.
Overall, my part focused on how defining reusable domains and organizing data through taxonomies improves consistency, organization, and governance in database.

What I Gained from this Topic:

While researching this topic, I learned how using CREATE TYPE in T-SQL helps make data more consistent and reusable. I also understood that Fully Qualified Domains and Table Names keep databases organized, clear, and easier to manage. Overall, it showed me how standard rules and naming help improve database design.