SQL Access Using Native Geometry Types: Tips and Tricks

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Assumptions

Target Audience

• Intermediate knowledge of SQL and relational databases.

• No knowledge of the ST_Geometry data type or functionality is necessary.

• Not covering setup and configuration of ST_Geometry environments.

• Questions at the end of the presentation.

Please silence cell phones
Agenda

• What is ST_Geometry?

• Why use ST_Geometry?

• How is ST_Geometry Implemented?

• Additional Considerations

• DEMO
  - How to use ST_Geometry
  - How to use SQL Server Geometry type via SQL
What Is ST_Geometry?

- ST_Geometry is a spatial type that stores geometry data in a single spatial attribute

Spatial Index

Relational and geometry operators and Functions
- Constructors
- Accessors
- Relationship and Operators
Why use ST_Geometry?

Benefits of ST_Geometry

- Enhances Efficiency
- Bridge the gap between GIS and non-GIS users
- Sometimes you want a single result, and not a map
- Interact with data on the SQL level
- Accessed using common API’s and SQL
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Editing Geodatabase Feature Classes using SQL

Additional considerations

When working outside of ArcGIS, keep in mind:

- Only edit Simple Features (IsSimple)

- Editing Versioned Tables (versioned view)

- Must maintain next ObjectID and GlobalID values (Next_RowID/Next_GlobalID)

- Minimal validation of the objects will be performed
Rules for creating spatial tables to be used with ArcGIS

Prerequisites

- Unique identifier.
- One geometry column in the table.
- One spatial reference in the table.
- Do not use mixed-case object names.
- Entity type matches the type defined for the spatial column.
ST_Geometry Functions

Relational and Geometry Operators and Functions

- Constructors – creates new geometry
  - Example: ST_Point, ST_Line, ST_Polygon

- Accessor – return property of a geometry
  - Example: ST_Area, ST_SRID

- Relationship and Operators – perform spatial operations
  - Example: ST_Intersects, ST_Buffer
Demo:

1. How to use ST_Geometry Functions
2. How to use SQL Server Geometry type

Malini Ramalingam
Scenario

• City needs to renovate parks based on a report, listing locations that need facility improvements

• Community outreach program including sending out surveys and organizing an Open House

• Identify potential park users
ST_Geometry functions that will be used and the result

Constructor functions:
   ST_Geometry

Accessor functions:
   ST_X and ST_Y

Relational functions:
   ST_Buffer, ST_Intersects and ST_Transform

Result:
List of addresses
## Esri Support Service Presentations: Enterprise Geodatabase

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