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Demo Theater | Thursday, July 14th

Using Spatial Data in ArcGIS with Query Layers

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Outline

- **What is a Query Layer?**
- **Creating and working with Query Layers**
- **ArcGIS Desktop and Query Layers**
- **ArcGIS Server and Query Layers**
- **Why should developers care about Query Layers?**

What is a Query Layer?

- **New functionality at ArcGIS 10**
- **A layer or stand alone table defined by a SQL query**
- **Provides direct, read-only access to spatial data independent of where it is stored**
- **Data does not need to be registered with the geodatabase**
- **Can now use the full power of SQL to create feature classes and Tables**
 - **Joins, Spatial Types, Aggregation, Field Derivation**

Working with query layers

- **Query layers behave like any other feature layer or table**
 - Set symbology and display properties
 - Use as input in GIS analysis (e.g., geoprocessing)
 - Save as a layer package
 - Published as part of the map document → map services
 - Read only
- **Query executed when the layer is displayed or used**
 - Allows for the latest information to be visible → very useful for dynamic information

Prerequisites for working with query layers

- Database release and spatial types must be supported by ArcGIS
- **SQL Server**
 - Geography, Geometry
- **DB2**
 - ST_Geometry
- **Oracle**
 - ST_Geometry, SDO_Geometry
- **Informix**
 - ST_Geometry
- **PostgreSQL**
 - ST_Geometry, PostGIS

Prerequisites for working with query layers

- **Result of a query must conform to the ArcGIS Data Model**
 - Single shape field, entity type, spatial reference, field types

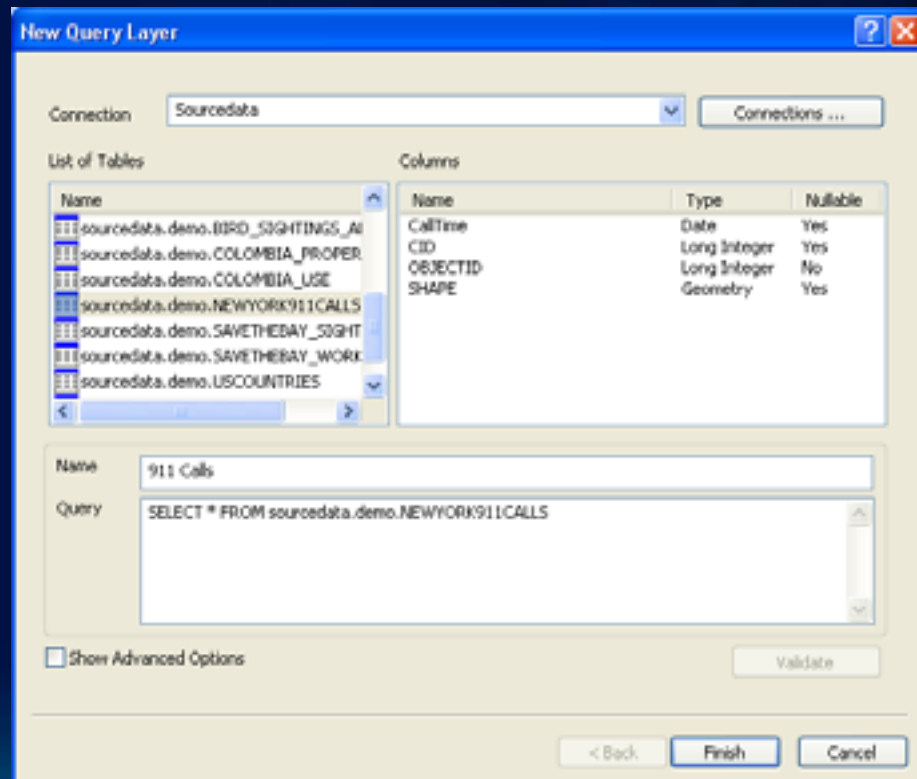
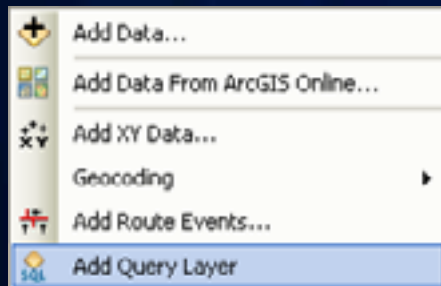


`SELECT Name, City, ShapePoint FROM Hospitals`

name	city	ShapePoint	ShapePolygon
Legacy Emanuel	Portland	0x32010000010C60B8018...	0x32010000010C60B80180DE...
Physicians Hospital	Portland	0x32010000010C60B801A...	0x32010000010C60B801A051...
Legacy Good Samaritan	Portland	0x32010000010C60B8010...	0x32010000010C60B80100FB...
Providence Portland	Portland	0x32010000010C60B801A...	0x32010000010C60B801A0E5...
Tuality Community	Hillsboro	0x32010000010C60B8010...	0x32010000010C60B80100A5...
Tuality Forest Grove	Forest Grove	0x32010000010C60B8018...	0x32010000010C60B8018080...
Providence St Vincent	Portland	0x32010000010C60B8010...	0x32010000010C60B8010036...

ArcGIS Desktop and Query Layers

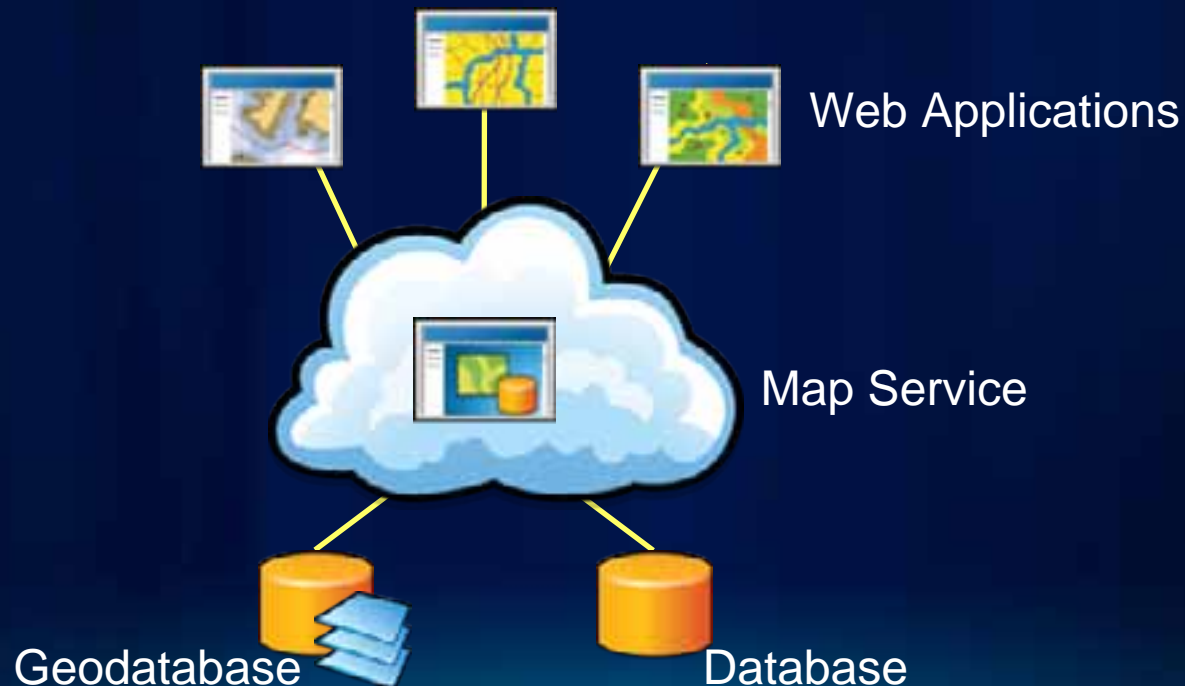
- Query Layers can be created in ArcMap



ArcGIS Server and Query Layers

Consumed as Map Service Layer

- Work as any other layer
 - If published as a Map Service can be used in ArcGIS Server



Developer Considerations

- You now have a simple method to integrate data from databases
- Can now use the full power of SQL to create feature classes
 - Joins, Spatial Types, Aggregation, Field Derivation
 - Basically if you can do it with SQL you can do it with Query Layers
- Can work directly with a database (no ArcSDE required)
- Can now do more with your Geodatabase datasets

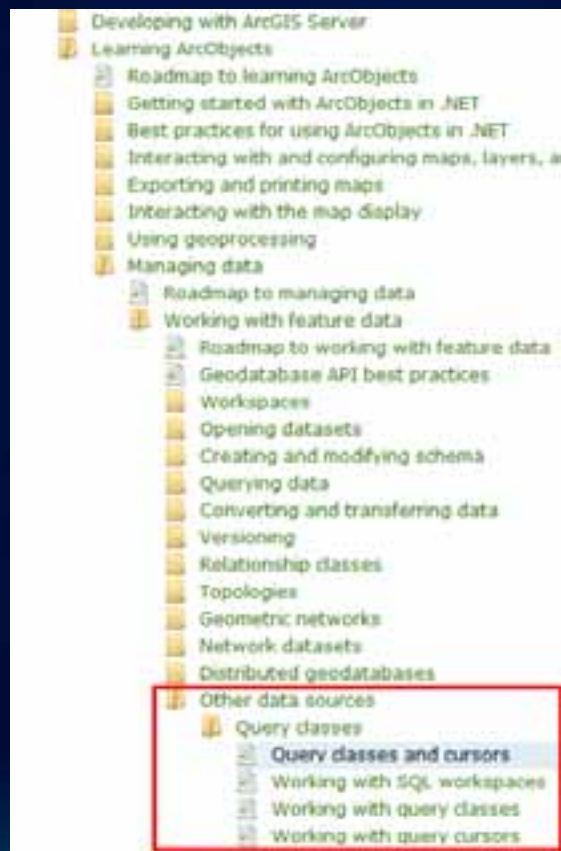
Developer Considerations

- **Programming Pattern:**

1. **Cocreate a SQLWorkspaceFactory**
2. **Connect to a ISqlWorkspace**
3. **Create IQueryDefinition by passing in a SQL query**
4. **Create a IFeatureClass, ITable or ICursor from the IQueryDefinition**

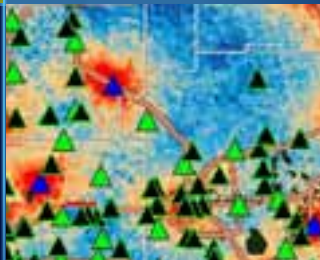
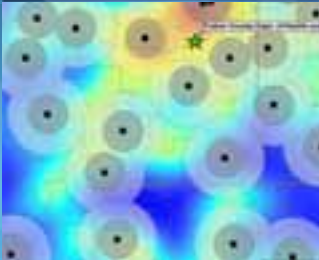
Developer Considerations

- Four specific How To articles in ArcGIS SDK



DeKalb County Board
Fulton County Dept. of Health and Wellness/District 3, Unit 2, 06/11/2011

Demo: Working with Query Layers



Summary

- **Query layers: a layer defined by a SQL query**
- **Provide direct, read-only access to database data**
 - Does not have to be a geodatabase
- **Leverages the native SQL of the database**
- **Work like any other layer in ArcMap**
- **Can be published in an ArcGIS Server map service**

Thanks for attending Questions?

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