Geodatabase ArcGIS Diagrammer

GIS by ESRI®

CONTENTS

INTRODUCTION

Welcome to the ArcGIS Diagrammer user guide.

ArcGIS Diagrammer is a productivity tool for GIS professionals to create, edit or analyze geodatabase schema. Schema is presented as editable graphics in an environment familiar to users of Microsoft Visual Studio 2005. Essentially ArcGIS Diagrammer is a visual editor for ESRI's Xml Workspace Document which are created by ArcCatalog, the management application in the ArcGIS Desktop product suite.

The first few chapters of this guide detail the installation and un-installation of ArcGIS Diagrammer. However the most useful part of this guide is the chapter entitled getting started. This chapter contains two easy to follow tutorials and is strongly recommended for new users.

Enjoy!

HOW TO INSTALL

DOWNLOADING THE SETUP PROGRAMS

ArcGIS Diagrammer can be downloaded from ESRI's ArcScripts website. Please read all the terms and conditions before downloading this or any other code/application from the site.

http://arcscripts.esri.com/details.asp?dbid=14407

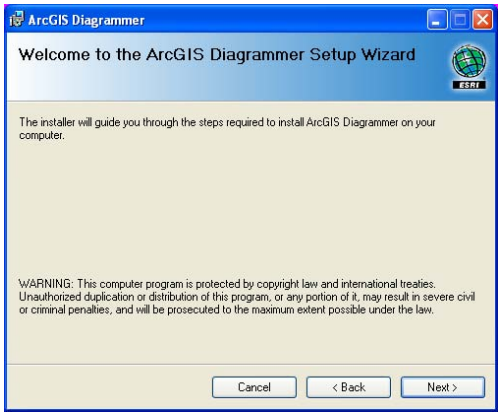
If you have received this application from an alternative source or are a current user, please check the ArcScripts website regularly for updates.

RUNNING THE SETUP PROGRAM

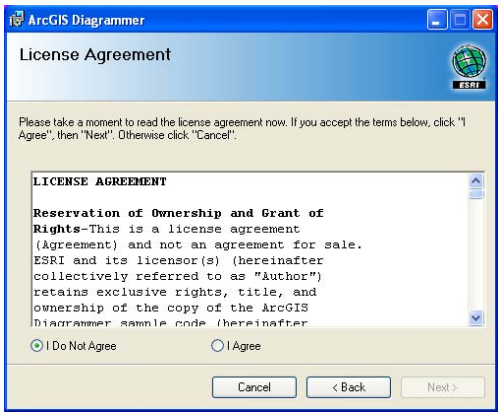
Listed below is a step-by-step installation guide for ArcGIS Diagrammer.

Start the Microsoft Windows Explorer application. Navigate to the folder containing the zip file downloaded from the ArcScripts website. Extract *ESRI.ArcGIS.Diagrammer.Setup.2007xxxx.msi* from the Zip file and double click on *ESRI.ArcGIS.Diagrammer.Setup.2007xxxx.msi* to start the installer. When the installer will first display a splash screen. Press **Next >**

The next dialog will display a welcome message. Press **Next >**

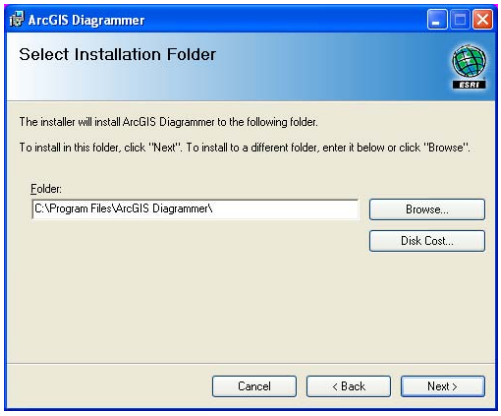


The next dialog displays a detailed license agreement. Read through the agreement, if you agree with the statement click **I Agree** and then click **Next >**.

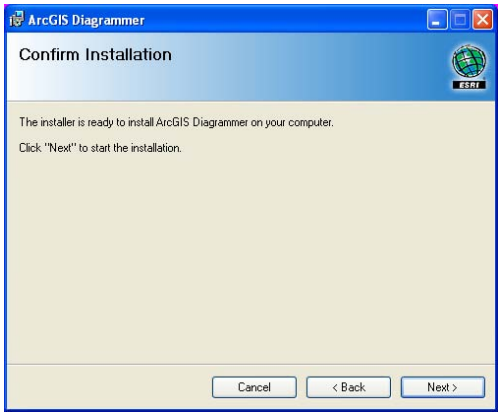


Following the license agreement, a dialog will display a prompt with the installation folder, by default his is: C:\Program Files\ArcGIS Diagrammer

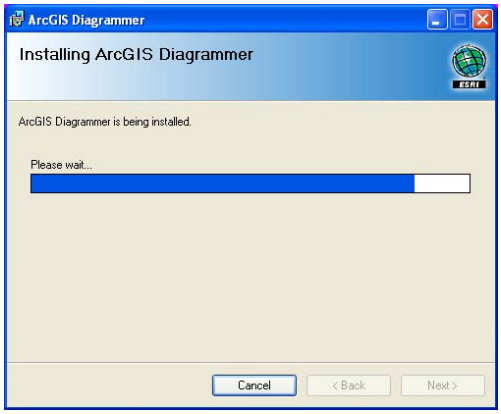
If you prefer to install the application on another drive (or folder) then enter a new installation folder or click the **Browse** button to navigate to a folder. The **Disk Cost…** button will display the amount of space required to install this application. Click **Next >** to continue to the next dialog,



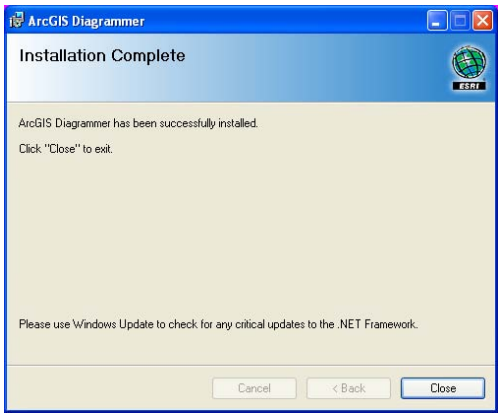
Finally, the installation wizard will display a confirmation message prior to commencing the installation. Click **Next >** to start the installation.



During the installation process the installation wizard will display a progress bar. At anytime the installation process can be cancelled by clicking the **Cancel** button however this is strongly not recommended. If you would like to cancel the installation we recommend that you first let the install complete and then follow the uninstall procedure detailed in the following section.



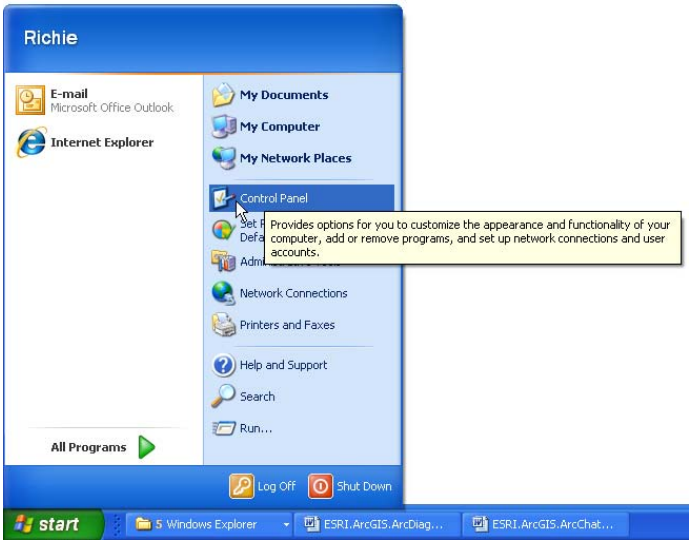
On successful completion of the install this final dialog will appear. Click **Close** to dismiss dialog.



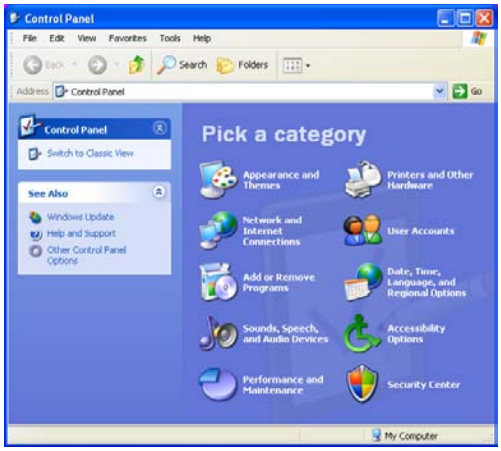
HOW TO UNINSTALL

UNINSTALLING ARCGIS DIAGRAMMER

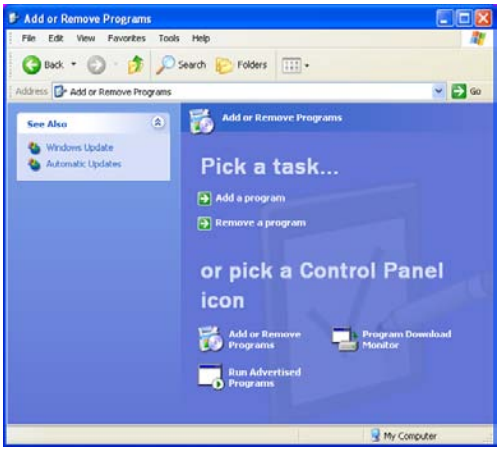
Diagrammer can be uninstalled using the Add or Remove Programs dialog available from the Windows Control Panel. Launch the Windows Control Panel. Click **Start** > **Control Panel** as illustrated below.



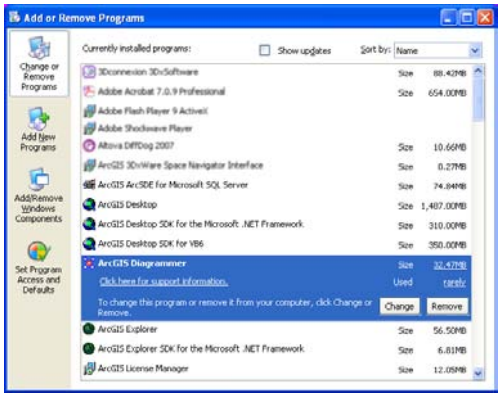
Start the Add or Remove Programs dialog. Click the **Add or Remove Programs** item.



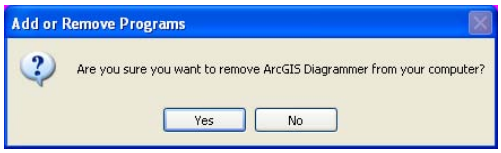
When the following dialog appears click **Remove a program**.



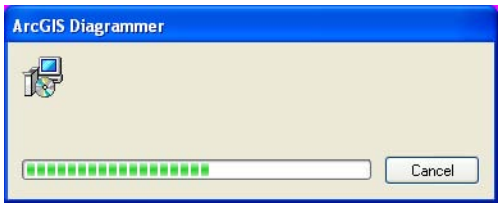
From the Add or Remove Program dialog select **ArcGIS Diagrammer** as illustrated below.



Click **Remove**. A dialog box will appear confirming that you want to remove ArcGIS Diagrammer. Click **Yes**.



The uninstall process will take just a few seconds, during which the following progress dialog will be visible.



INSTALLATION REQUIREMENTS

OPERATING SYSTEM

ArcGIS Diagrammer supports the same platform as ArcGIS Desktop 9.2, this includes the following:

- Microsoft Windows 2000 SP3 (or later)
- Microsoft Windows 2003 Server SP1 or SP2
- Microsoft Windows 2003 Server Terminal Services SP1 (with limitations)
- Microsoft Windows XP Home Edition SP1 or SP2 (with limitations)
- Microsoft Windows XP Professional Edition SP1 or SP2 (with limitations)
- Microsoft Windows XP Professional Edition 64-bit (with limitations)
- Microsoft Windows Vista 32-bit (with limitations)
- Microsoft Windows Vista 64-bit (with limitations & limitations)

MICROSOFT .NET FRAMEWORK

ArcGIS Diagrammer requires Microsoft .Net Framework version 2.0. The .Net framework can be installed from here.

ESRI SOFTWARE

ArcGIS Diagrammer requires ArcGIS Desktop 9.2.
Please ensure that you have the latest service pack installed. For a list of the latest services packs please click here.

LICENSING

To read this user guide you must have already installed ArcGIS Diagrammer and accepted the license agreement presented in the setup program. A copy accepted license agreement is located within the "license" subfolder of the installation folder. ArcGIS Diagrammer has a runtime dependency of either ArcGIS Engine or ArcGIS Desktop. The Engine (or Desktop) product must installed and licensed.

ArcGIS Diagrammer uses the following third party components.

1) **ERM Diagram 4.1**
   Crainiate Software
   http://www.crainiate.net/products/erm4/default.htm
2) **SandDock**
   Divelements
   http://www.divil.co.uk/net/controls/sanddock/
3) **SandBar**
   Divelements
   http://www.divil.co.uk/net/controls/sandbar/

These components can be used indirectly through ArcGIS Diagrammer without any cost to you as an end user. However you are legally compelled to purchase a developer license(s) if you reference these components directly. This includes modifications to the core ArcGIS Diagrammer assemblies. Please contact Crainiate Software or Divelements for more information on licensing.

STORAGE REQUIREMENT

The installation size of ArcGIS Diagrammer is approximately 10MB.

SOURCE CODE

The source code for ArcGIS Diagrammer is located in the "Source" sub-folder in the installation folder.

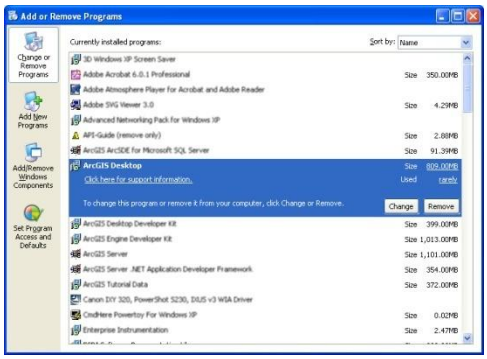
POST INSTALLATION REQUIREMENTS

ESRI .NET ASSEMBLIES

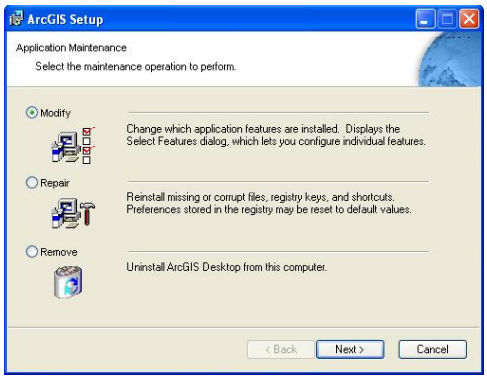
ArcGIS Diagrammer requires the ESRI .Net assemblies to be installed in the Global Assembly Cache (or GAC). If you installed the Microsoft .Net Framework 2.0 prior to installing ArcGIS 9.2 then the ESRI assemblies will have been automatically installed in the GAC.

If the .Net Framework was installed after ArcGIS then you must following the steps below to install the ESRI assemblies into the GAC. You may also use the following the steps to verify the installation of the ESRI assemblies.

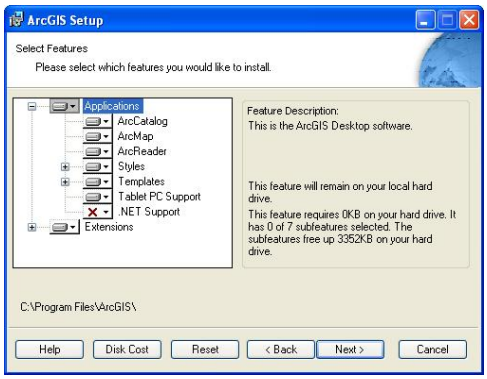
Display the **Add or Remove Programs** dialog from the Windows **Control Panel** (see How to Uninstall above for details), select **ArcGIS Desktop** from the list of installed programs



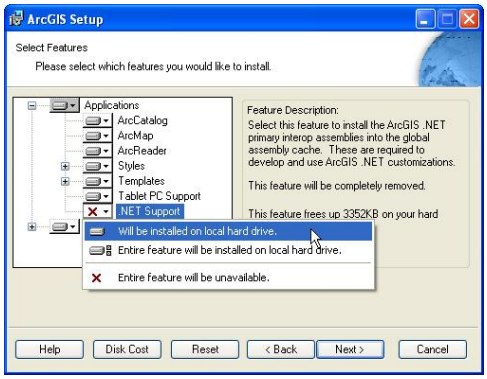
Click the **Change** button to launch the installer. At this point you may be asked for the source media or access to a network folder that was used to install ArcGIS Desktop.



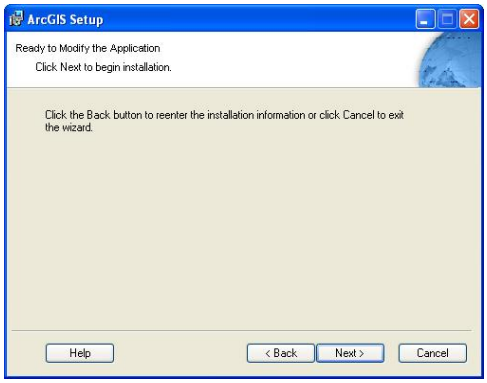
Select **Modify** and then click **Next >**. The following dialog will appear listing all the currently installed components of ArcGIS 9.



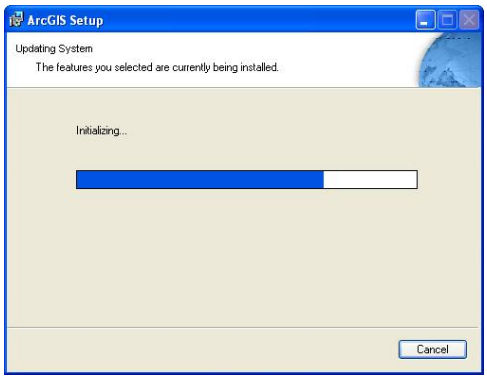
Click on **.NET Support** and select **Will be installed on local hard drive.**



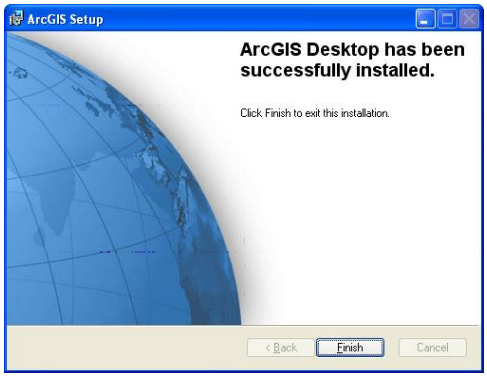
Click **Next >**



At the confirmation prompt click **Next >** again. As the new files are installed the following progress dialog will appear. If necessary, the installation can be cancelled by clicking the **Cancel** button, but this is strongly not recommended.



When the installation is complete the following dialog is displayed.



Finally, click **Finish** to dismiss the dialog.

GETTING STARTED

INTRODUCTION

This chapter will step through two exercises. The first exercise will use ArcGIS Diagrammer (AD) to design a simple geodatabase. The second exercise will start by analyzing an existing the schema of an existing geodatabase, make a few modifications and then load the edited schema to a new geodatabase.

Ultimately the goal of these exercises is to demonstrate AD's usefulness and ease of use.

EXERCISE ONE: DESIGNING A GEODATABASE

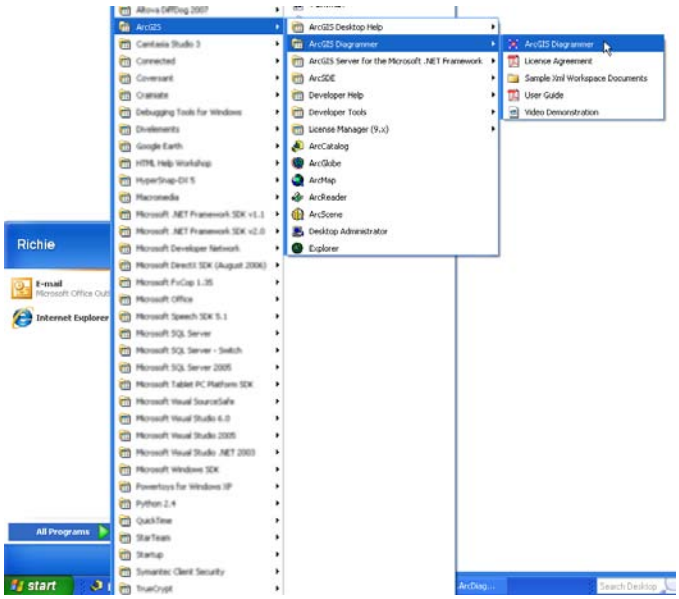
Prior to AD there were two ways of authoring geodatabase schema, designers could use ArcCatalog or third party CASE tools like IBM's Rational Rose or Microsoft's Visio.

ArcCatalog is a very focused application for schema creation. But is, of course, non-graphical making a design collaboration and validation difficult. For complex designs, schema creation with ArcCatalog would be very time consuming.

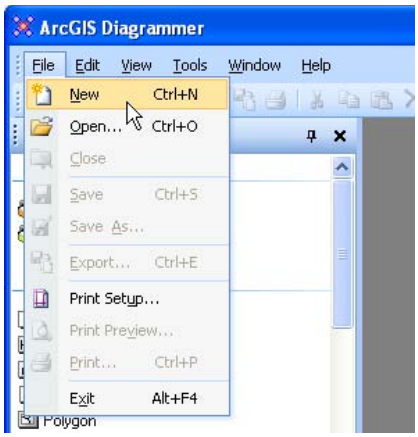
CASE tools allow designers to create industry standard UML diagrams but had performance issues with complex designs. Additionally, some geodatabase objects like topology datasets and annotation feature classes were not supported.

In this exercise you will discover a third method of schema creation.

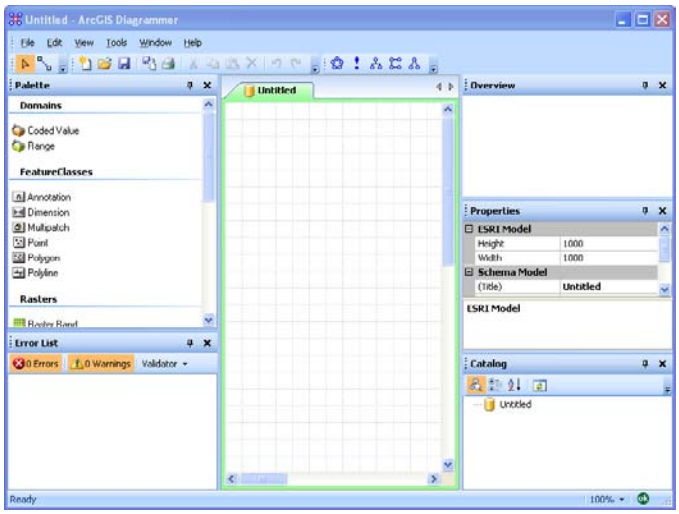
Let's commence this exercise by starting AD from the windows start menu. On computer with Windows XP click **Start > All Programs > ArcGIS > ArcGIS Diagrammer > ArcGIS Diagrammer** as shown below.



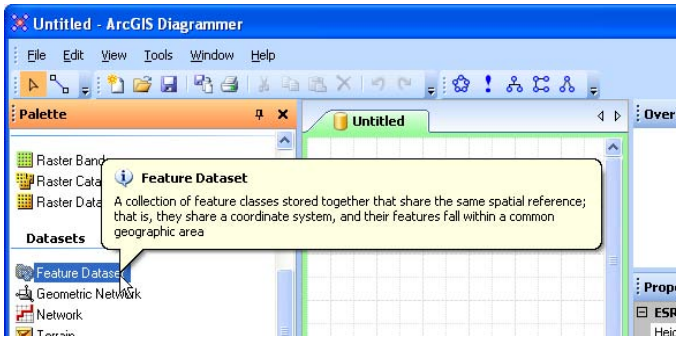
AD will start without any diagrams loaded. To create a new empty diagram click **File > New**.



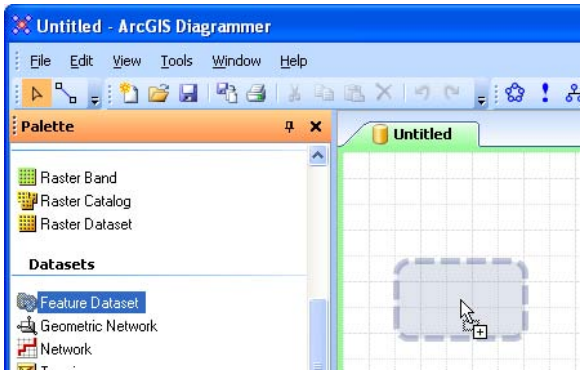
A new tab will be added to the AD application with the name *Untitled*, this is the default name for new diagrams.



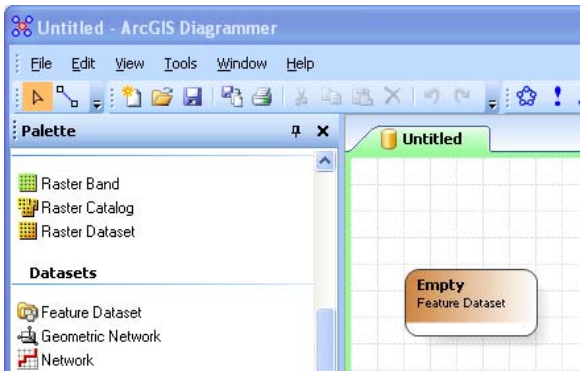
In the Palette window scroll down until you see the Feature Dataset item. As you place you cursor over this and other items a brief description will appears in a balloon tooltip.



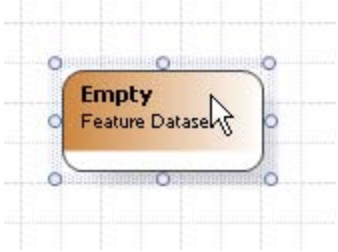
Drag the Feature Dataset item from the palette and drop it into the diagram.



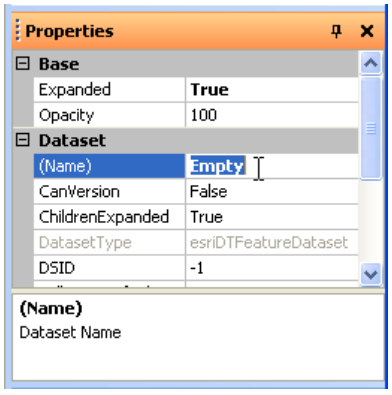
The drag and drop operation added a new feature dataset called *Empty* to the diagram. By default, datasets added from the palette will have a *WGS84* spatial reference.



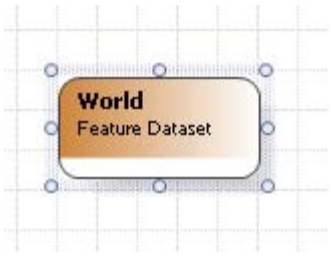
To change the name of the feature dataset select it by clicking it with the left mouse button.



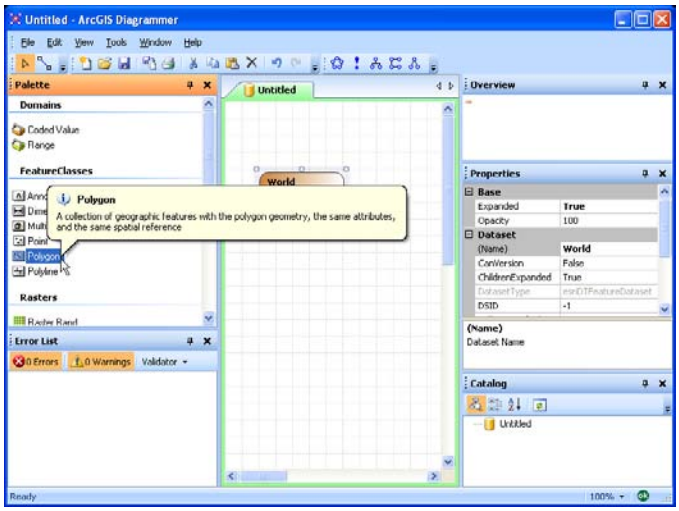
In the Properties window highlight the text *Empty* next to the *(Name)* properties in the *Dataset* category.



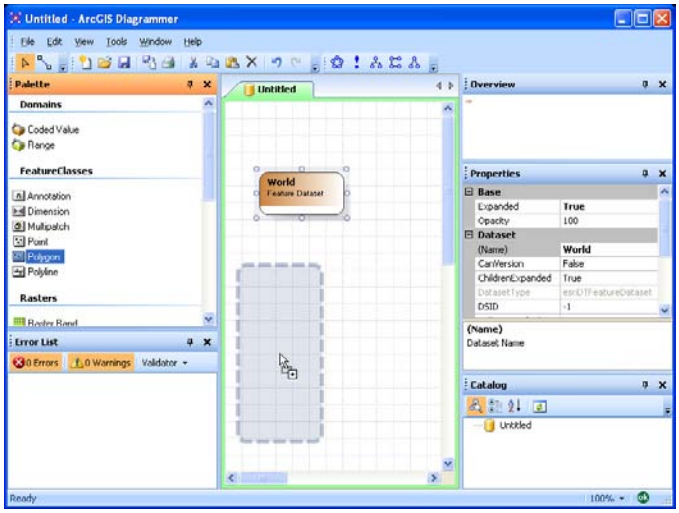
Type *World* and then press **Enter** to update the feature dataset.



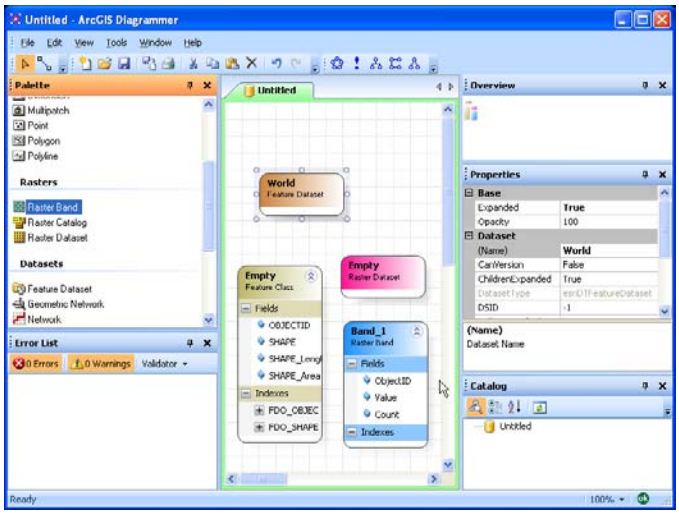
Scroll up the list of geodatabase objects in the Palette window and locate the *Polygon* item under the *FeatureClasses* category.



Drag and drop the *Polygon* item into the diagram.

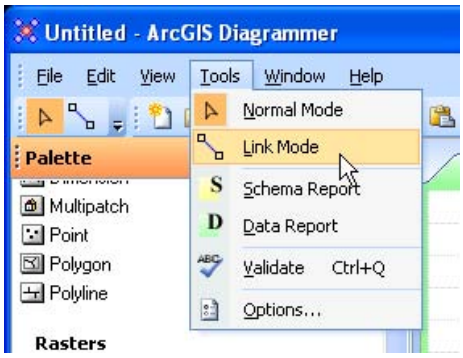


Similarly add a *Raster Dataset* and *Rater Band* to the diagram as shown below.

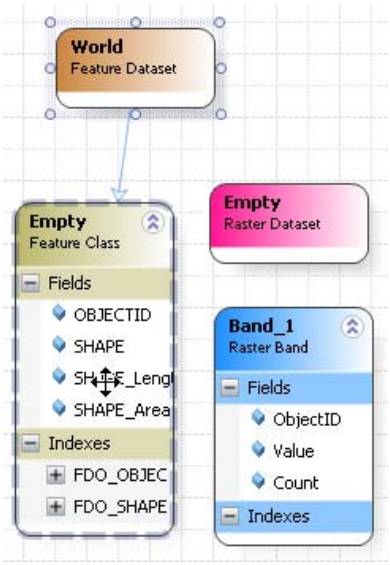


Next we need to indicate some geodatabase structure. Namely, the feature class needs to associated with the feature dataset and the raster band to the raster dataset. To associate objects AD must to switched to *Link Mode*.

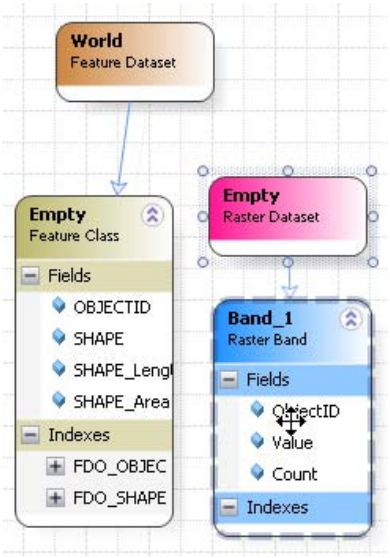
Click **Tools > Link Mode**.



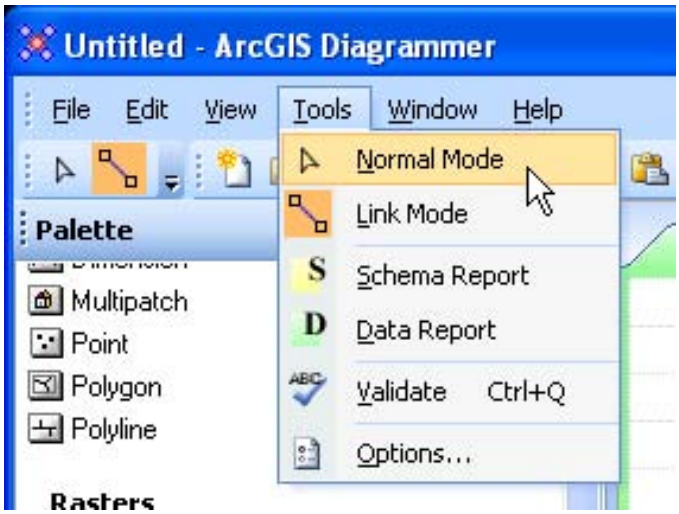
To link the feature class to the feature dataset start by dragging a link from the center of the feature dataset to the center of the feature class.



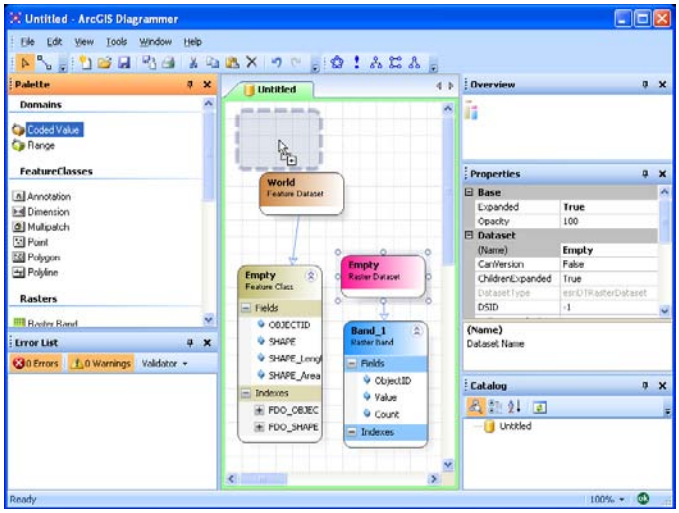
Likewise, link the raster band to the raster dataset by dragging a link from the center of the raster dataset to the center of the raster band.



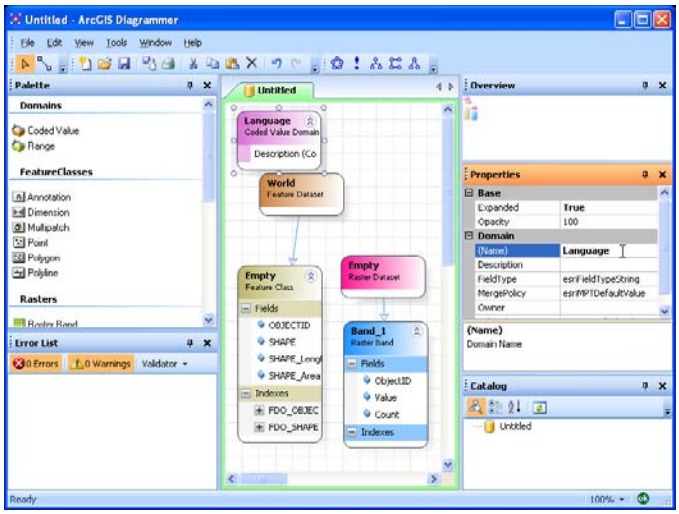
Before continuing let's restoring the normal interaction mode by clicking **Tools > Normal Mode**.



Returning to the Palette, drag and drop a coded value domain to the diagram.

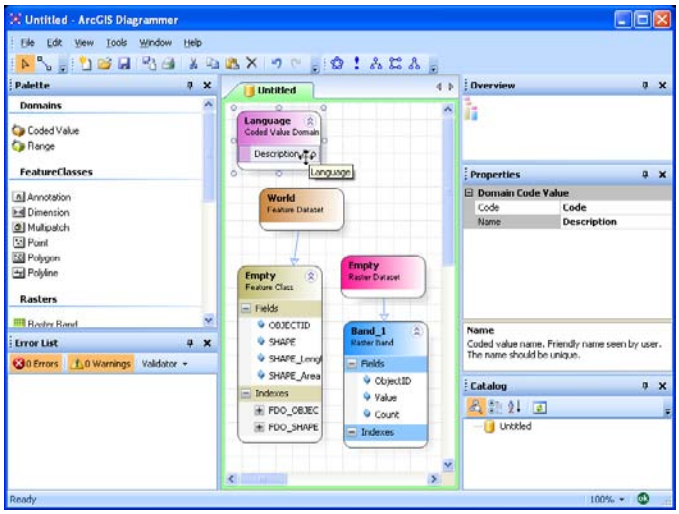


In a previous step you renamed the feature dataset from *Empty* to *World*. This time rename the newly added domain to *Language*. Start by selecting the domain by click it with the left mouse button. In the property window change the *(Name)* from *Empty* to **Language**.

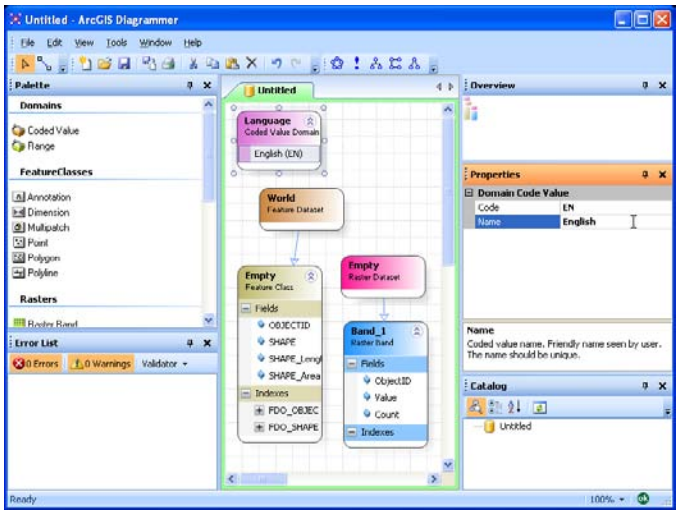


We are going to use this coded value domain to host a list of language names and codes. New coded value domains added from the palette window have a sample coded value. Let's start by modify the sample coded value and then move on to added additional coded values for other languages.

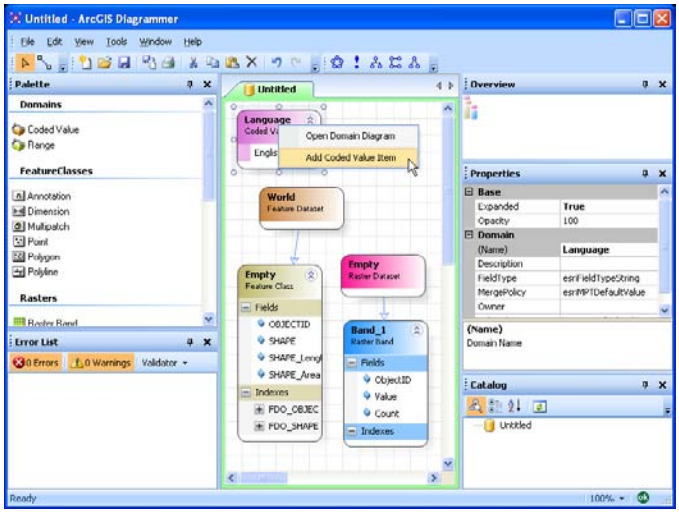
Select the first coded value item in Language domain.



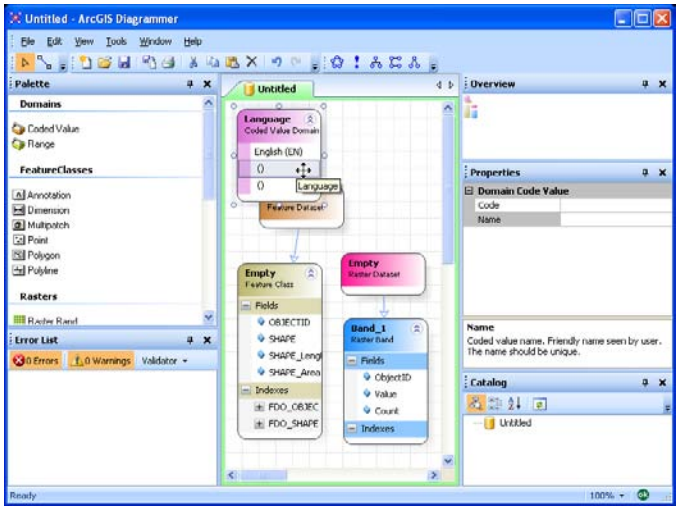
In the properties window set *code* to **EN** and *name* to **English**.



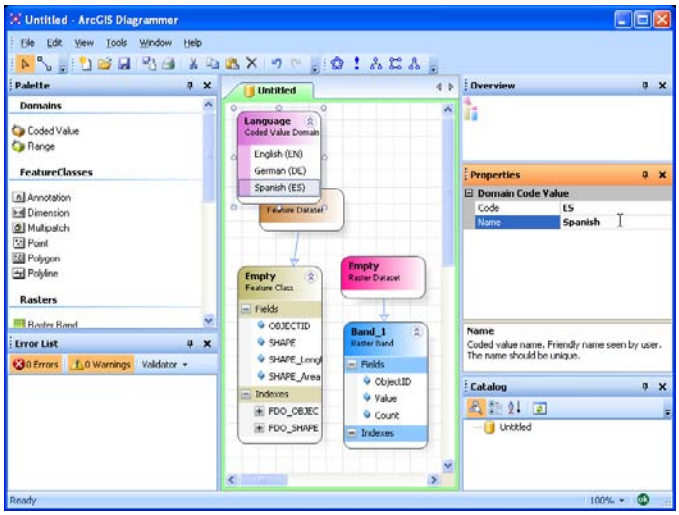
To add other coded value items right click on the domain and select **Add Coded Value Item**. Repeat this so that there are two new blank coded value itmes.



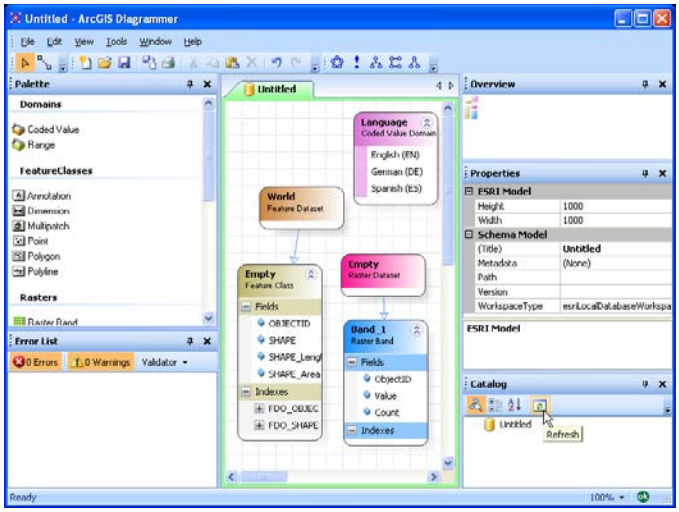
Select the second coded value item in the Language domain.



Set the *code* and *name* for the second coded value item to **DE** and **German** respectively. Likewise, assign **ES/Spanish** to the third and last coded value item.

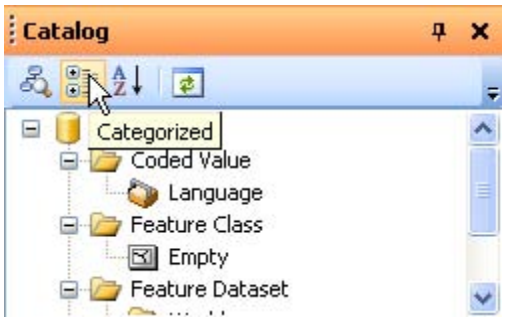


The easiest way to browse the objects in your diagram is to use the Catalog Window. If the catalog window is not visible then click **View > Catalog**. For performance considerations the catalog is not automatically updated when objects are removed, added, linked or unlinked. In the catalog window click the **Refresh** button as shown below.



The catalog window has three view types. The first and default view is similar to the tree structure displayed in ArcCatalog. However unlike ArcCatalog, this view lists domains and other geodatabase object that are not normal shown like subtypes.

Click the **Categorized view** button. This button groups all geodatabase objects based on type. This view allow you to quick answer questions like "Does the geodatabase have a topology dataset?" or "How many geometric networks are there?".

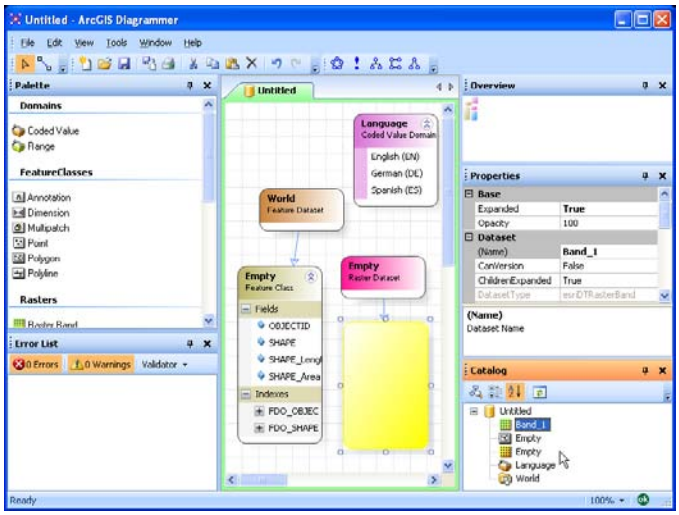


Lastly click the **Alphabetical view** button. This view arranges all geodatabase objects in an alphabetical order irrespective of the geodatabase hierarchy. This view allows you to efficiently locate objects that may be difficult to locate in the catalog view, for example, "Where is the subtype called 'residential'?".

Hint: If the alphabetical view contains hundreds or thousands of objects scrolling may be cumbersome. To quickly locate an object by name, type some or all of the object's name into the window. This will automatically scroll the view to the named object.

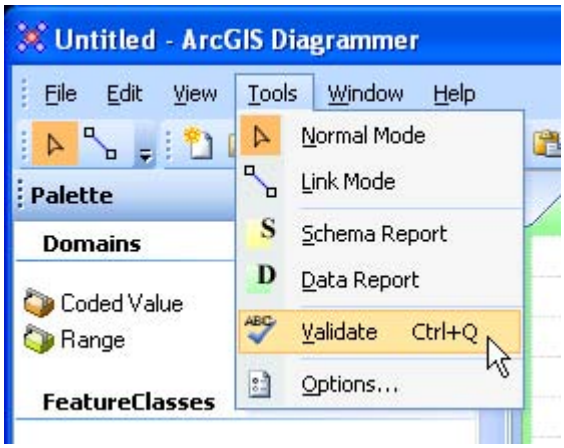
Right clicking on any geodatabase object in any view will display a context menu with the items *Scroll* and *Flash*. Selecting scroll will cause the diagram to pan to the location of the selected object. Scroll will not affect the diagram zoom scale. Flash will cause the object in the diagram to flash yellow three times. To illustrate this, right click on the raster band called *Band_1* and select **Flash**.

Below is a screenshot demonstrating the flashing effect that you will see after selecting *Flash*.



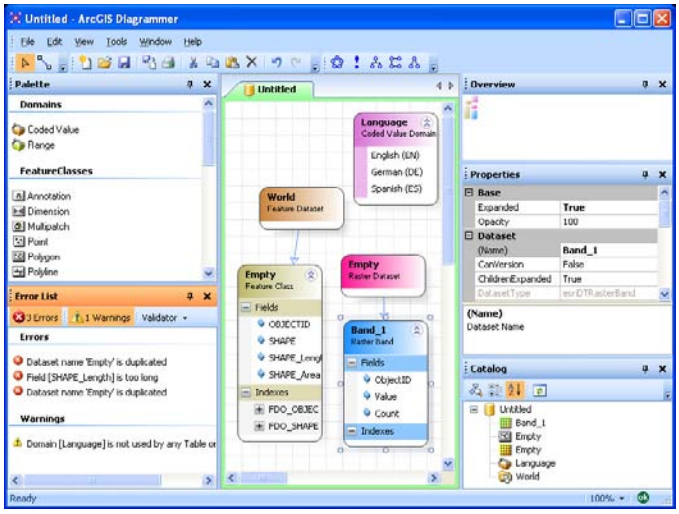
So far you have added a domain, feature dataset, feature class, raster dataset, raster band and made some associations. Before continuing let's validate the diagram. Validate is the process of scanning the diagram for errors and inconsistencies.

Click **Tools > Validate**.

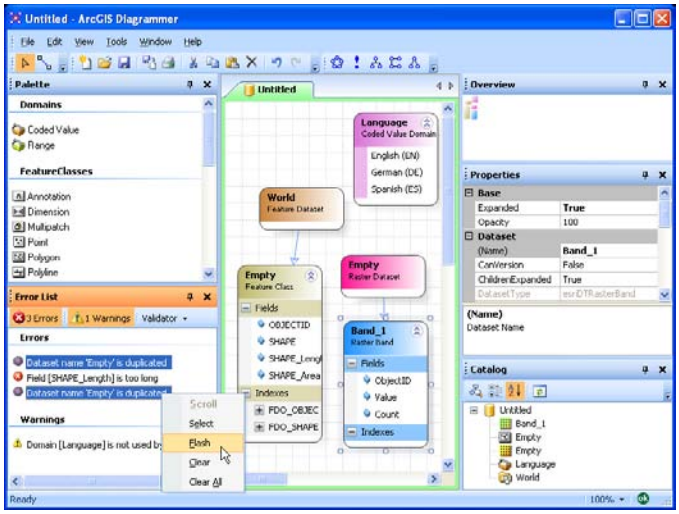


If the Error List window is currently not display then click **View > Error List**. Please ensure that the Errors and Warnings buttons on the toolbar are depressed. Depressed buttons will be colored orange as pictured below.

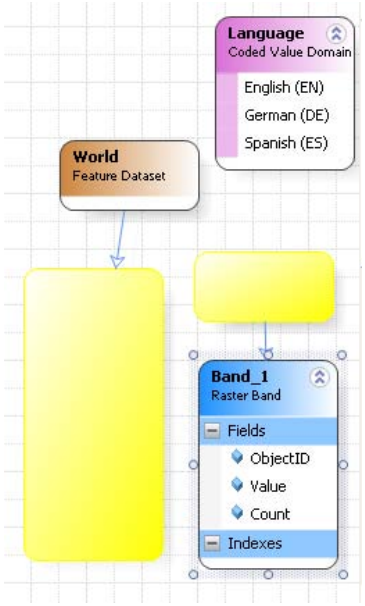
You should see three errors and one warning displayed in the error list window. Over the next few pages we are going to locate and fix these errors.



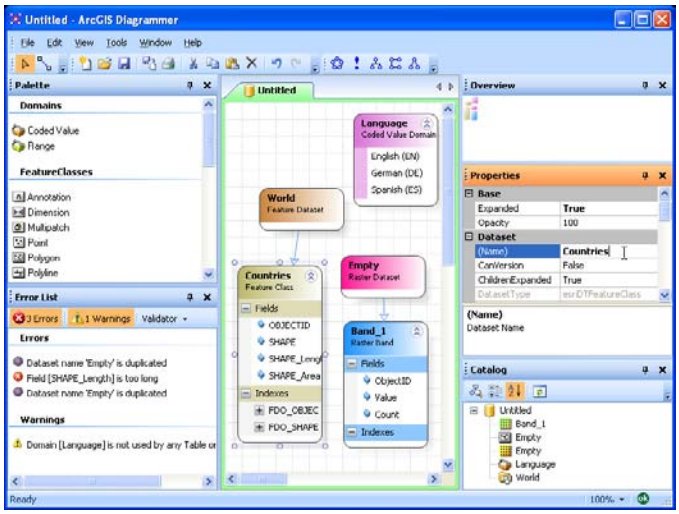
Of the three errors, two have the description "Dataset name 'Empty' is duplicated". Obviously there is a name conflict, let's start by locating the offending objects. Select the two errors. To select more than one error use the CONTROL key. Right click over one of the selected errors and click **Flash**.



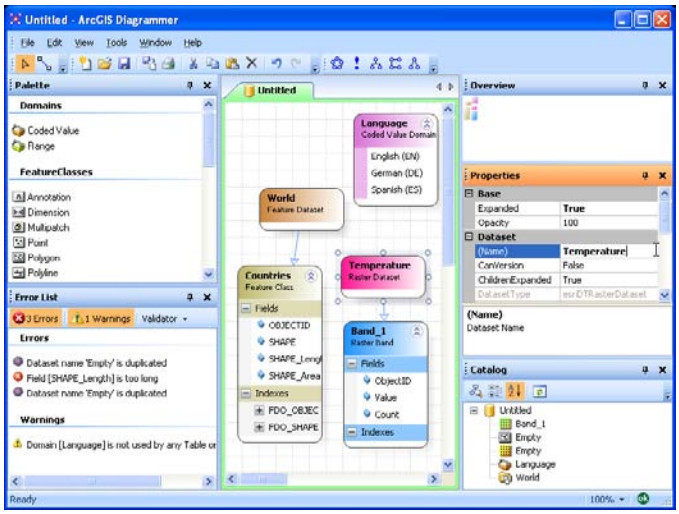
In the diagram you will see both the feature class and the raster dataset flash yellow. One of these objects must be renamed to avoid the naming conflict.



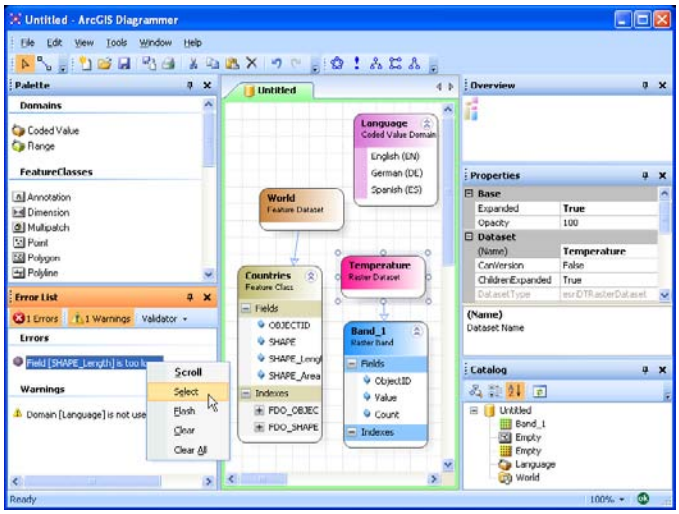
Select the feature class called *Empty* and change its *(Name)* to **Countries**.



Similarly, change the *(Name)* of the raster dataset from *Empty* to **Temperature**.



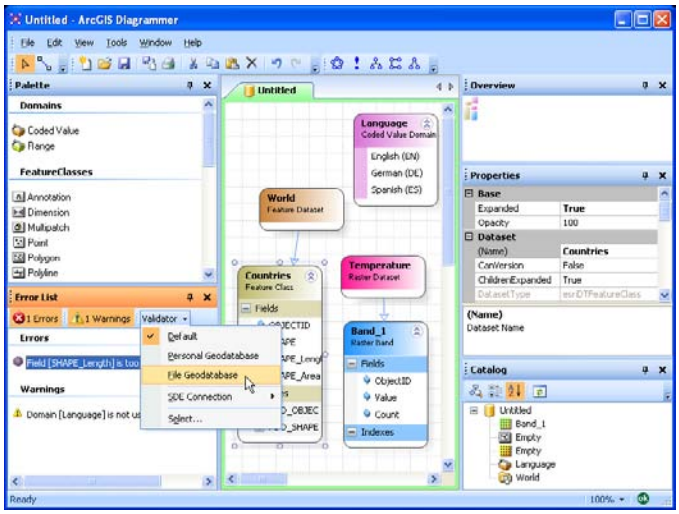
Refresh the list of errors by clicking Tools > Validate. Now, you only have one error and one warning. The error description is "Field [SHAPE_Length] is too long". To find out what table or feature class the field belongs to, right click on the error and click **Select**.



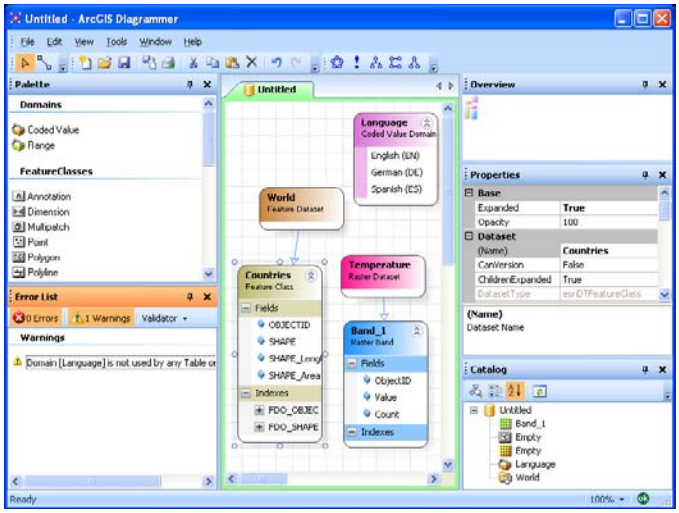
The Countries feature class is selected in the diagram.

To check table and field names the validate command uses a database specific *validator*. In this exercise you will be ultimately applying the schema generated from this diagram to file geodatabase. So, let's select a file geodatabase validator and re-validate the diagram.

Click the validator dropdown button on the error list window toolbar, select **file geodatabase**.



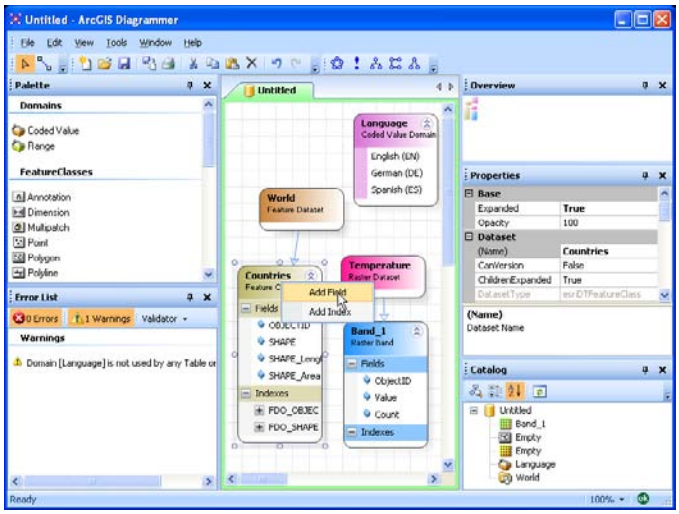
Revalidate the diagram by clicking **Tools > Validate**.



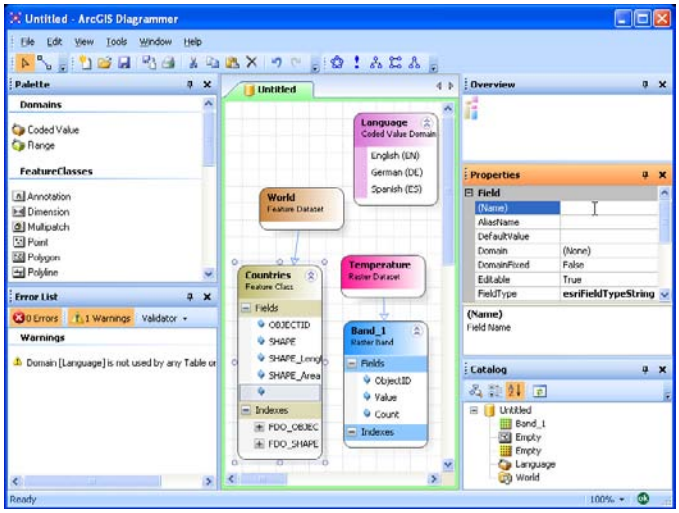
Now, we only have a single warning. All table and field names are valid for file geodatabases.

The warning description explains that the domain *Language* is not used. This is classified as a warning because it will not cause an error in the target geodatabase. For this reason, warnings can be ignored.

In this case, let's create new field in the feature class *Countries* and assign the domain *Languages* to it. To create a new field on Countries, right click on the feature class and select **Add Field**.



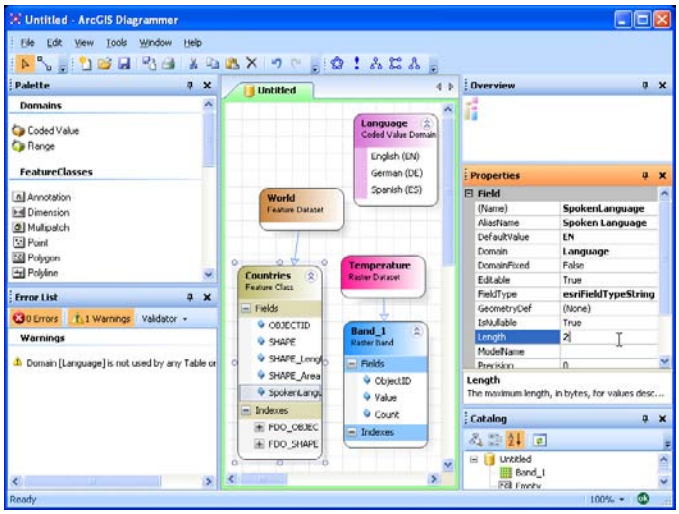
Select the newly added field.



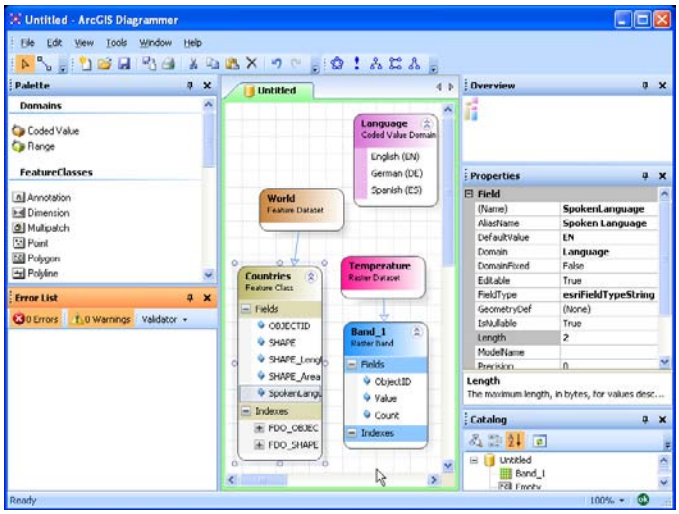
In the property window update the following properties.

Property	Value
(Name)	SpokenLanguage
AliasName	Spoken Language
DefaultValue	EN
Domain	Language
FieldType	esriFieldTypeString
Length	2

Notice that both the Domain and FieldType properties have dropdown menus. This helps eliminate typographical errors.

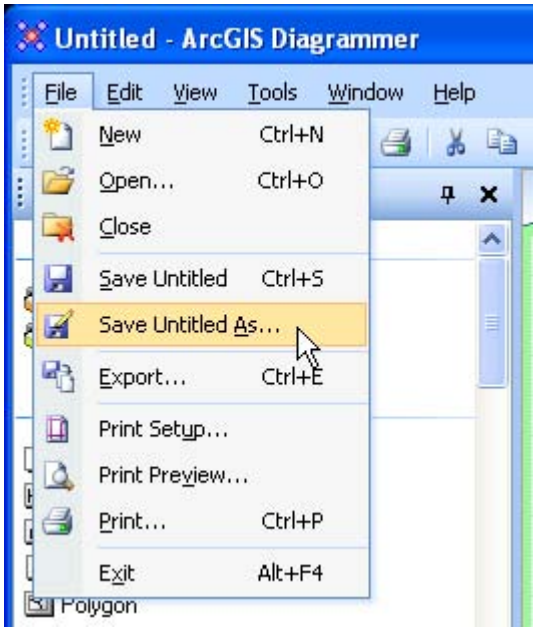


Once again, click Tools > Validate to verify that you have eliminated all errors and warnings.

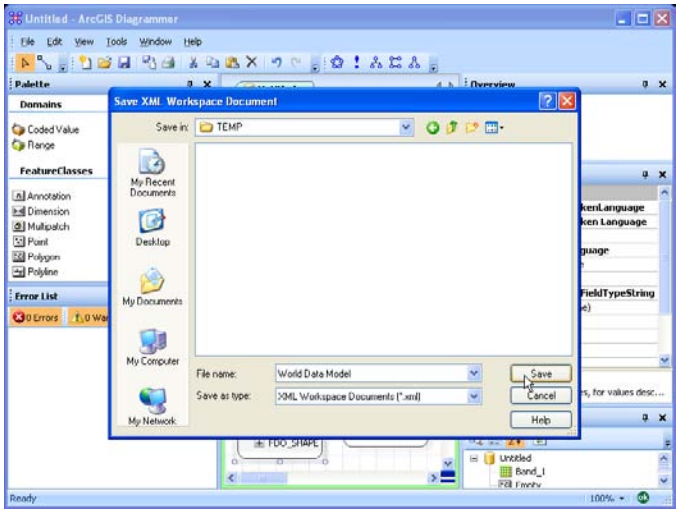


With the three errors and warnings removed we can move on to creating an xml workspace document from this diagram.

Click **File > Save Untitled As…**

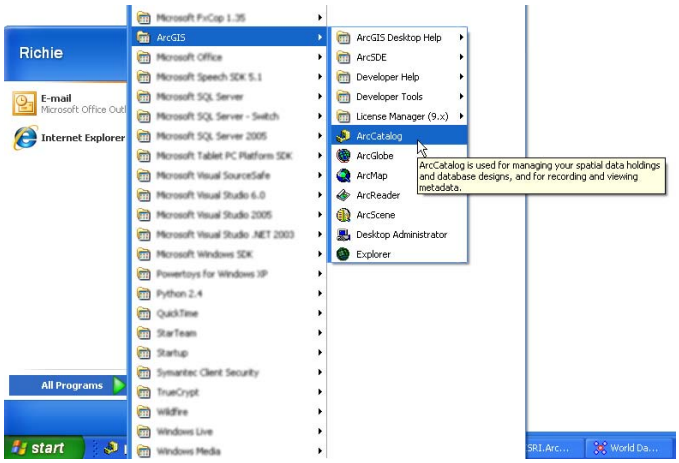


When the save as dialog appears, navigator to the **C:\Temp** folder and enter **World Data Model** as the output file name. Click **Save**.

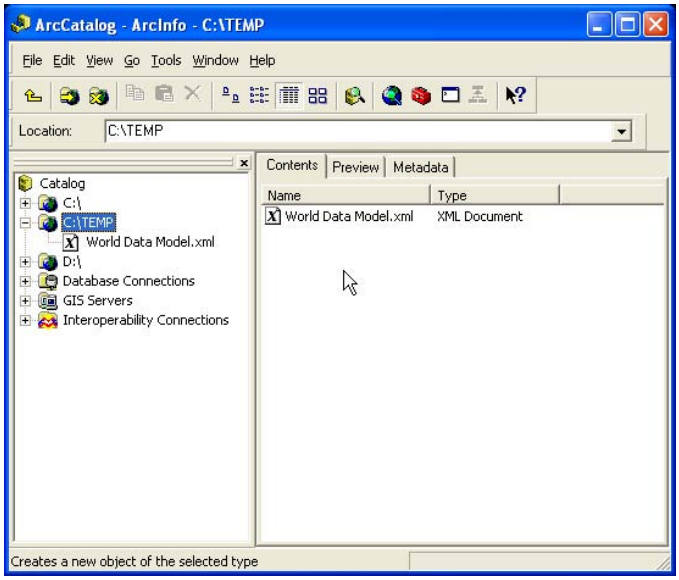


Xml workspace documents can be loaded into new or existing geodatabase using ArcCatalog. In this exercise we will load the document into a new file geodatabase.

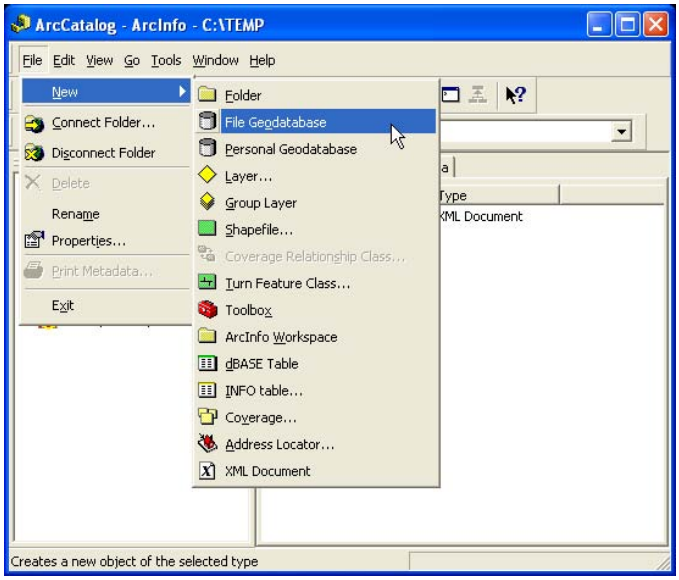
Click **Start > All Programs > ArcGIS >ArcCatalog** to start ArcCatalog.



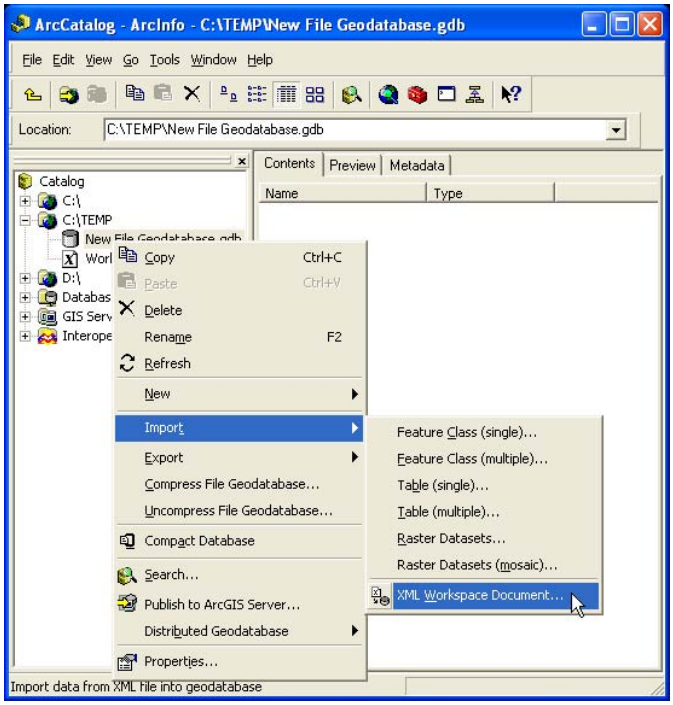
In ArcCatalog, navigate to the C:\Temp folder as shown below. You will see the Xml file created in the previous step.



Create a new file geodatabase by clicking **File > New > File Geodatabase**.



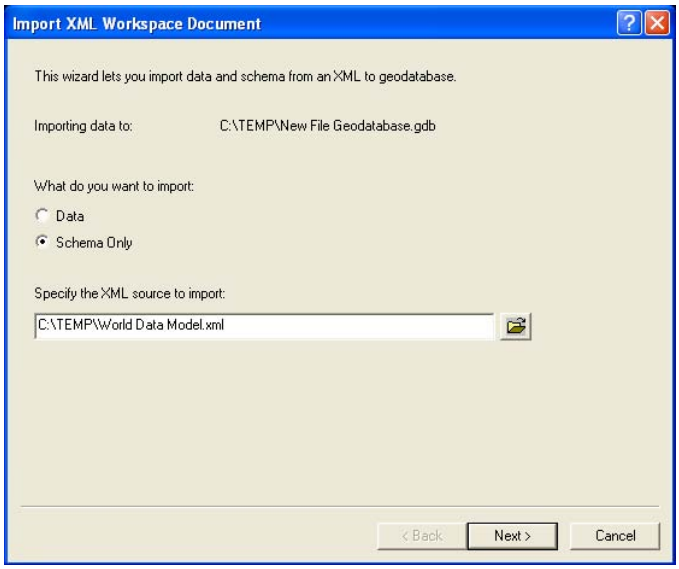
Select the new file geodatabase in the ArcCatalog table of contents. Right click and select **Import > XML Workspace Document**.



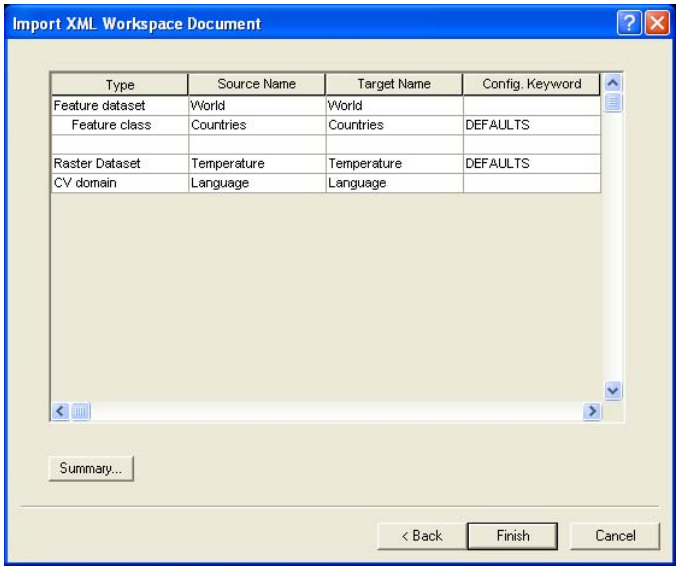
Xml Workspace Documents can contain schema, data or both. When the Import Xml Workspace Document window appears click **Schema Only** to indicate that no data will be imported.

Enter the full file name of the Xml Workspace Document created by AD, for example, **C:\Temp\World Data Model.xml**.

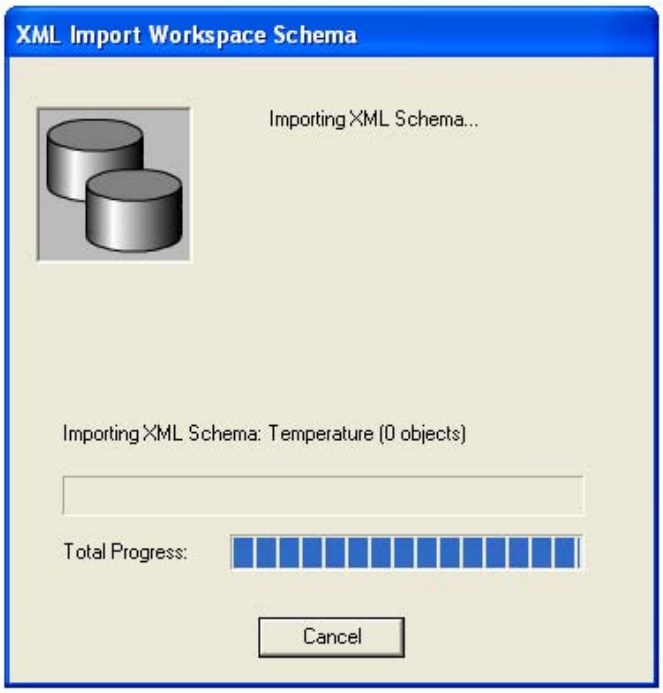
Click **Next >**.



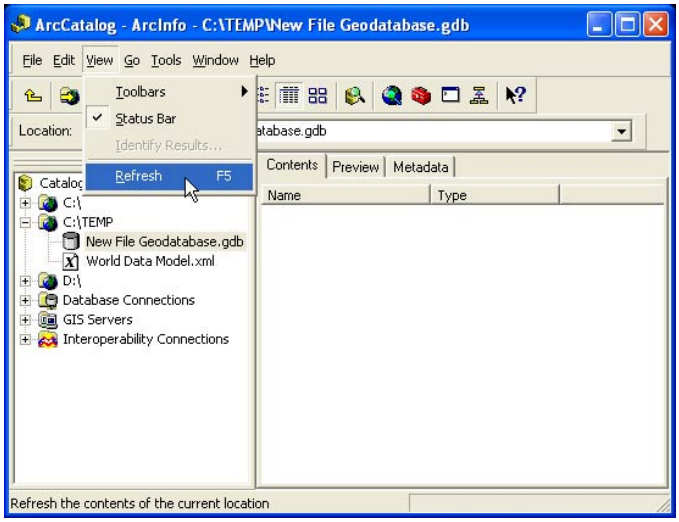
The next dialog will summarize the datasets and domains in the xml workspace document. Click **Finish** to start the schema loading process.



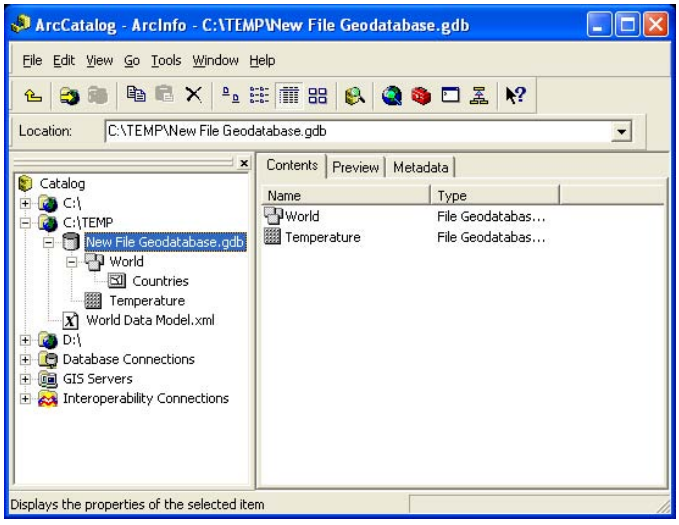
As the dataset and domains are loaded the following progress dialog will appear.



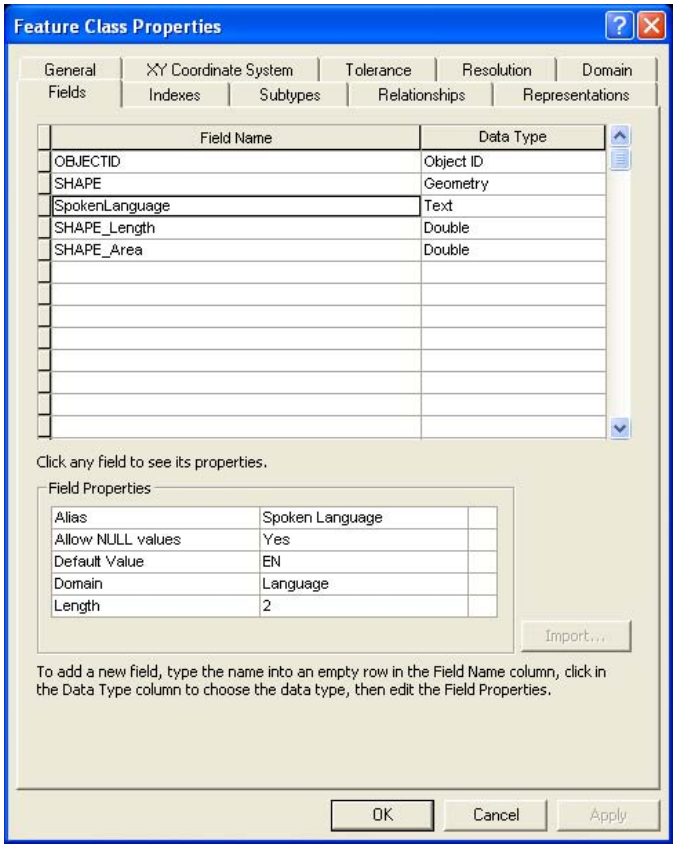
When the progress dialog disappears click **View > Refresh** in ArcCatalog to refresh the contents of the file geodatabase.



In the ArcCatalog, examine the geodatabase structure. Confirm that the *Countries* feature class was created in the *World* feature dataset.

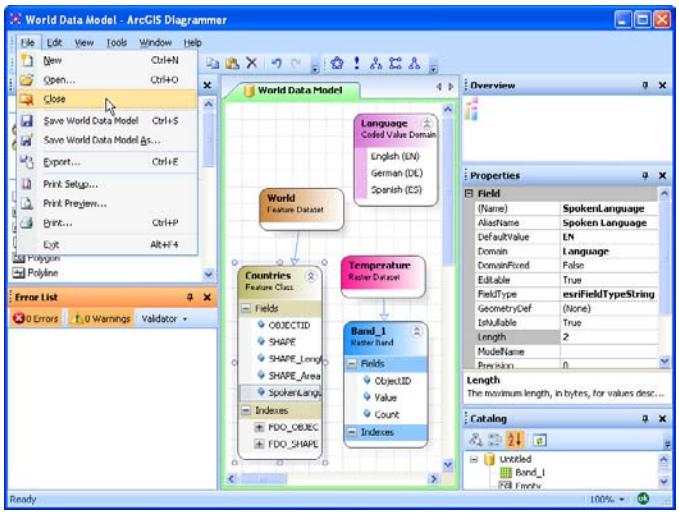


Right click on the Countries feature class and select **Properties**. Click the **Fields** tab and **SpokenLanguage** field list. Verify that the alias, default value, domain and length are correct and identical to the properties assigned in AD.

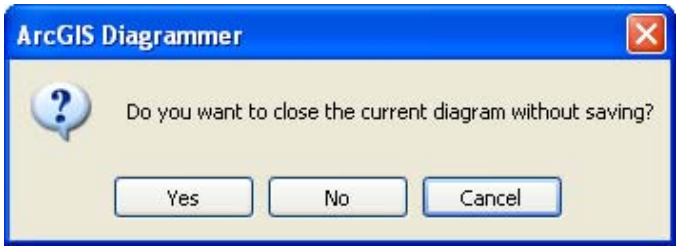


Click **Cancel** to dismiss the Feature Class Properties window.

Returning to the AD application, click **File > Close**.



When prompted to close the current diagram without saving click **No**.



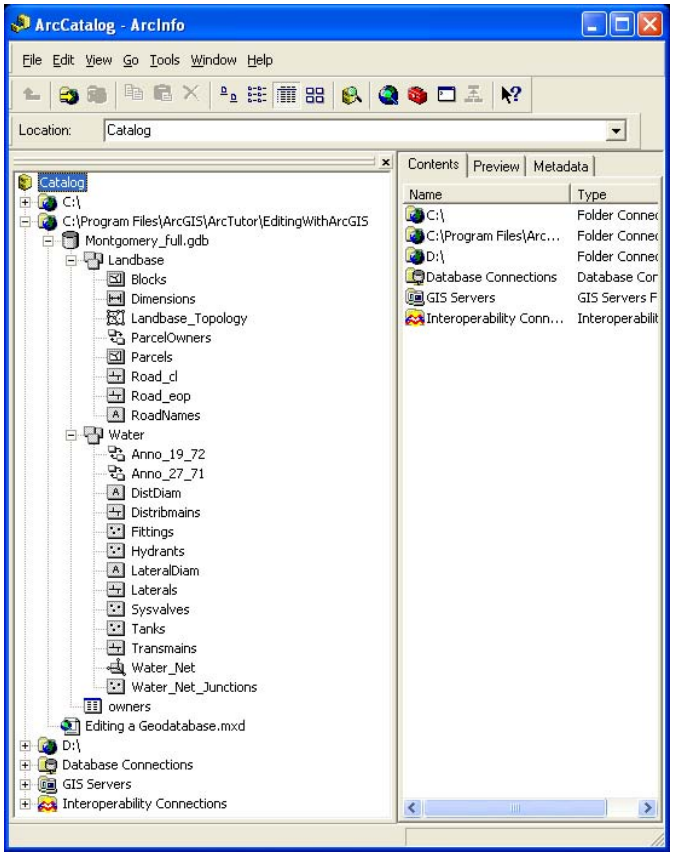
Congratulations. You have just designed a geodatabase using ArcGIS Diagrammer.

EXERCISE TWO: MODIFYING THE SCHEMA OF AN EXISTING GEODATABASE

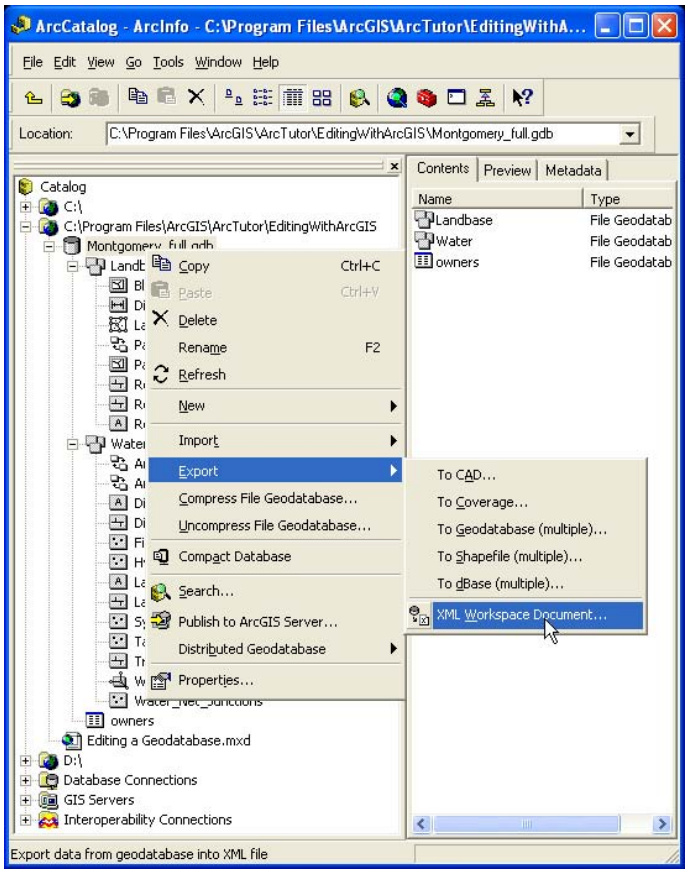
In the previous exercise you started with a blank diagram and authored new geodatabase schema by adding items from the palette. In this exercise you will take the schema from an existing geodatabase, modify it in AD and then apply it to a new geodatabase.

This exercise assumes you have ArcTutor installed. The screenshots and instructions below are based on an ArcTutor installation folder of *C:\Program Files\ArcGIS\ArcTutor*, but this may be different on your computer.

In ArcCatalog navigate to the **EditingWithArcGIS** sub-folder in the ArcTutor installation folder.

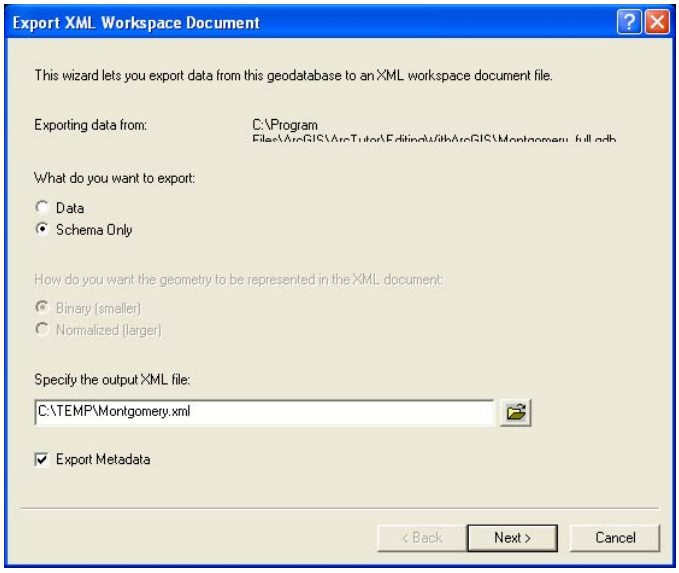


Right click on the **Montgomery_full.gdb** geodatabase and select **Export > XML Workspace Document**.

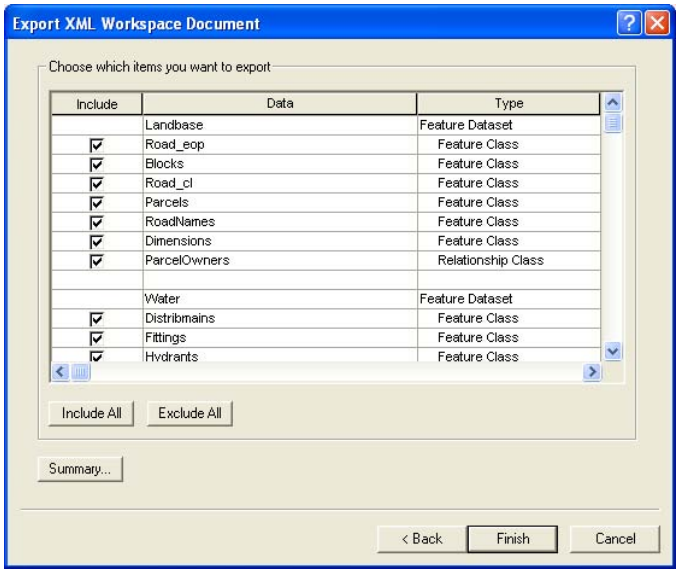


When the Export XML Workspace Document window appears check **Schema Only** so that no data is exported. In the output XML file box, enter **C:\Temp\Montgomery.xml**. By default, metadata (if any) will be included in the xml workspace document.

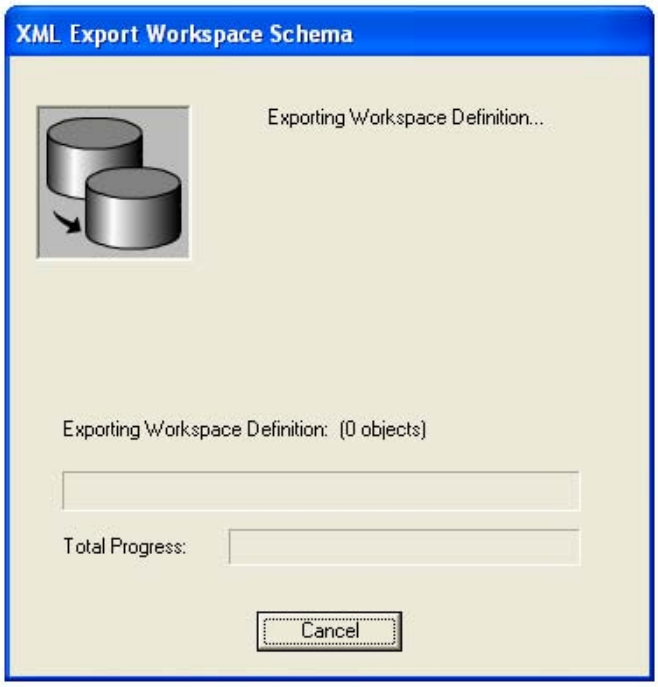
Click **Next** to proceed to the next step.



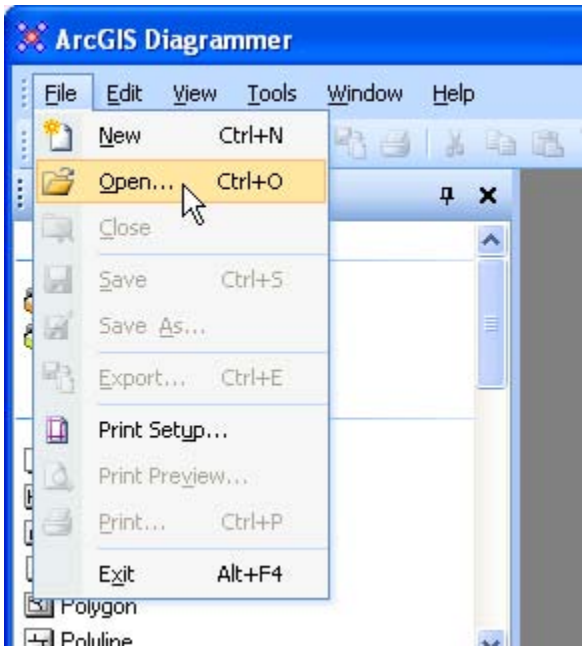
The next dialog will summarize the geodatabase objects that will be exported to the XML file. By default, all geodatabase objects are selected for export. Click **Finish** to commence the export.



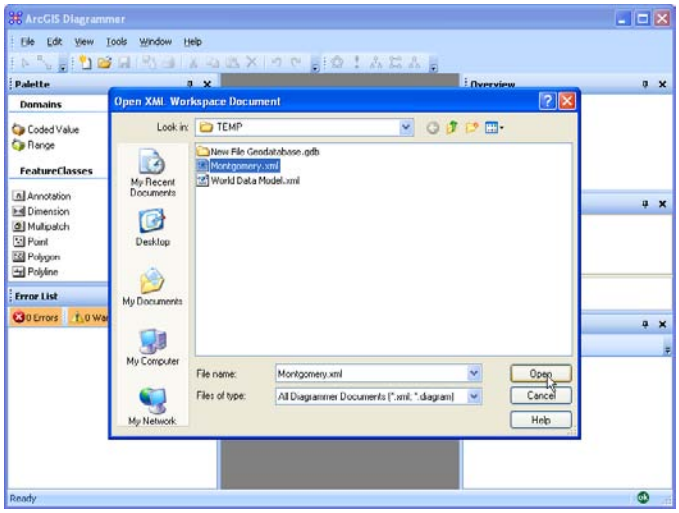
During the export operation the following progress dialog will appear.



When the export operation has completed the progress dialog will disappear. Returning to AD, select **File > Open** from the main menu.



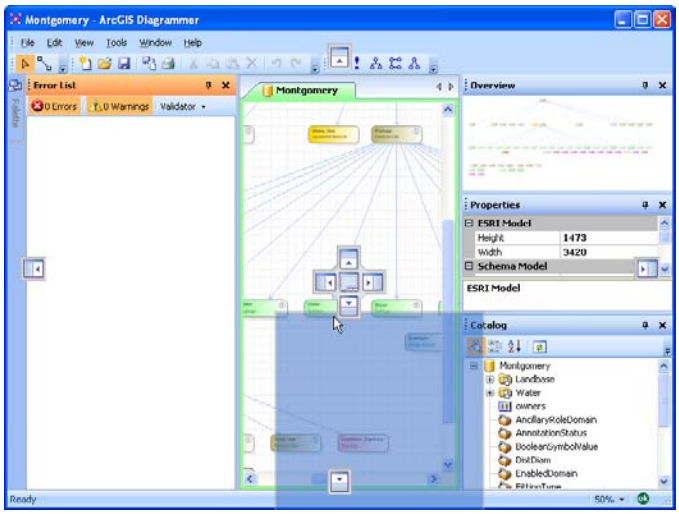
An open file dialog will appear. Navigate to the **C:\Temp** folder and select the export XML workspace document **Montgomery.xml**. Click **OK** to load XML workspace document.



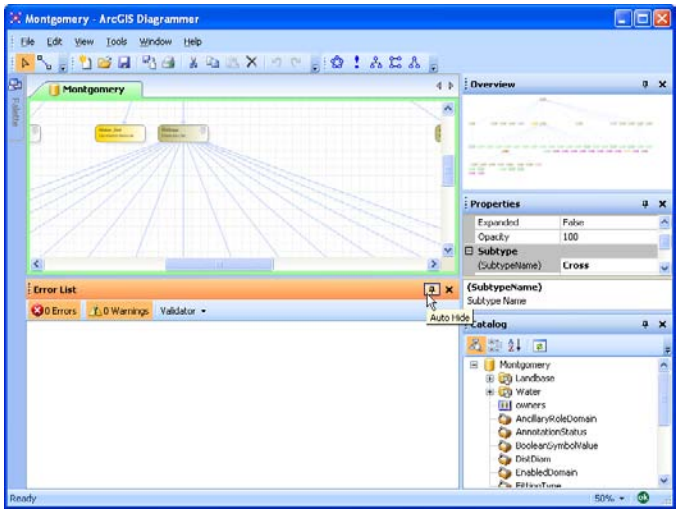
When AD has finished loading the XML workspace document a new tab will added to application. The intial title on the tab is taken from the filename of the source XML workspace document.

AD features a docking environment very similar to Microsoft Visual Studio 2005. Take some time to famialize yourself. First click the pushpin icon on the Palette window, this collapses the window to the side of the application. Next, click and drag the Error List window, as you commerce dragging you will see docking prompts appear around the application as shown below.

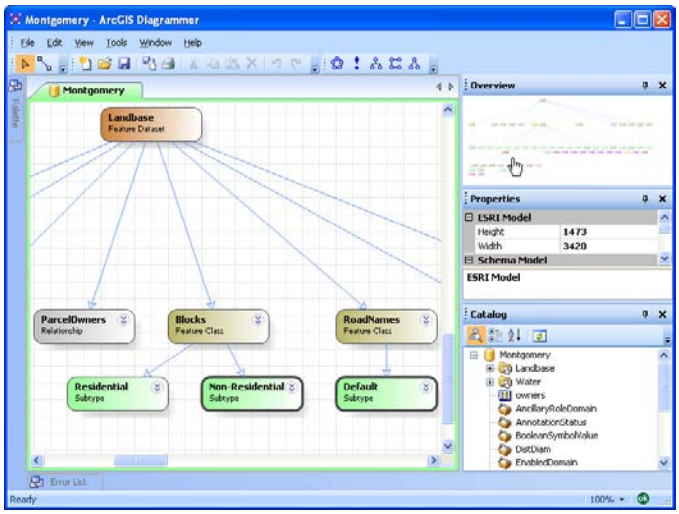
The docking prompts are drop targets for dragged windows. In the center of the application there are five docking prompts, drop the Error List window on the bottom prompt.



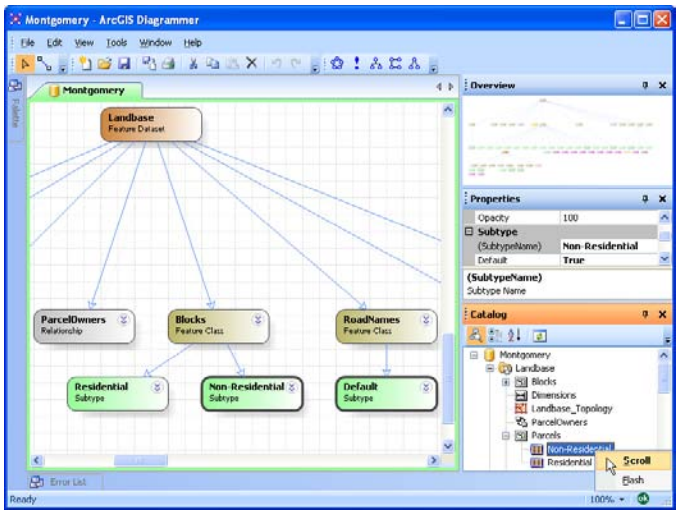
The Error List window will not be used in this exercise, for now, collapse the window to the bottom of the application by clicking the pushpin icon in the title bar.



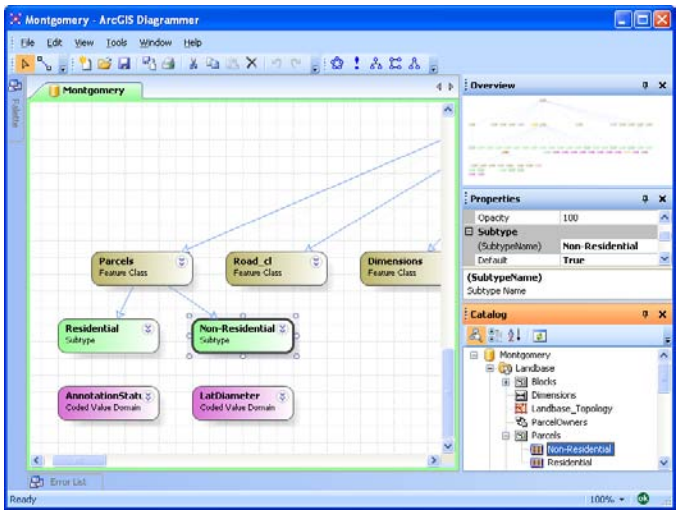
Diagrams are often much larger than your screen. AD provides three ways to navigate diagrams, the first and most obvious is to use the scroll bars on the right and bottom of the diagram. The second way, shown below, is to click in the Overview window. If the Overview window is not displayed then click **View > Overview**. Clicking in the Overview window will center the diagram around the location without changing the diagram scale.



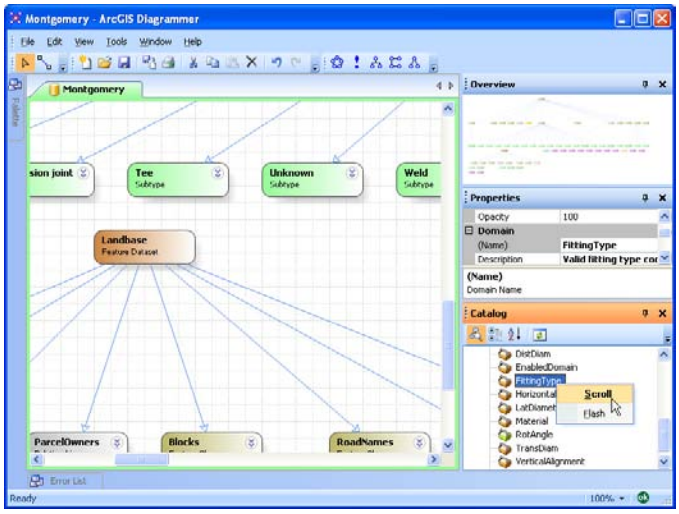
When the diagrams are large, objects in the Overview widnow may be difficult to recognize. The third and last way to navigate diagrams is to use the Catalog window. If the Catalog window is not displayed then click **View > Catalog**. This is easily the most efficient way to navigate your diagram. Let's locate *Parcel's Non-Residential* subtype. In the Catalog window, expand the **Landbase** feature dataset and **Parcels** feature class. Right click on **Non-Residentia**l and select **Scroll**.



The diagram will center around the Non-Residential subtype belonging to the Parcels feature class. Notice that it is selected in the diagram and its properties are displayed in the Properties window.

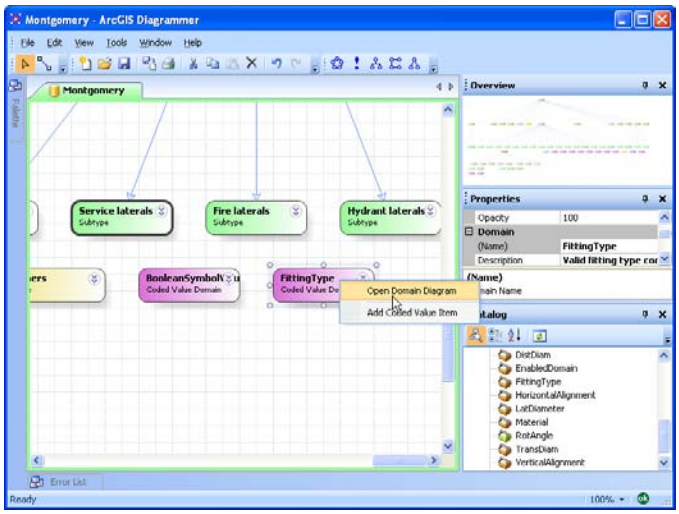


Next, let's locate the domain called *FittingType*. In the Catalog window, right click on **FittingType** and select **Scroll**.



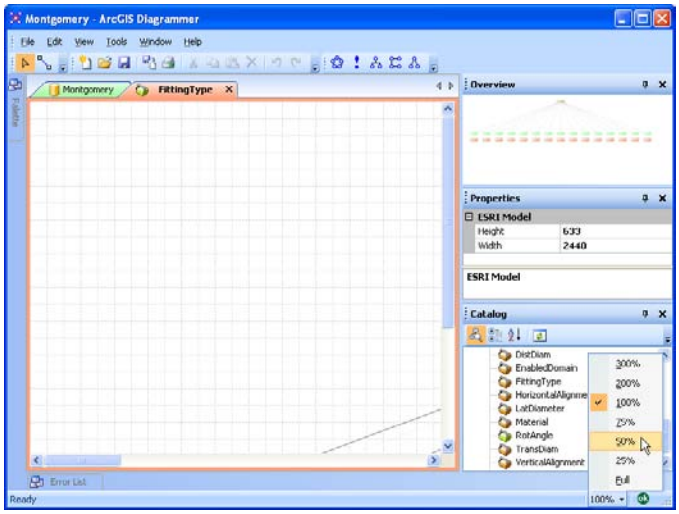
Until now we have been interacting with the main diagram. However AD allow the creation of additional sub-diagrams for analyzing or modifying complex objects. Domains, relationships, geometric networks and topology datasets all have sub-diagrams.

Right click on the **FittingType** domain and select **Open Domain Diagram**.

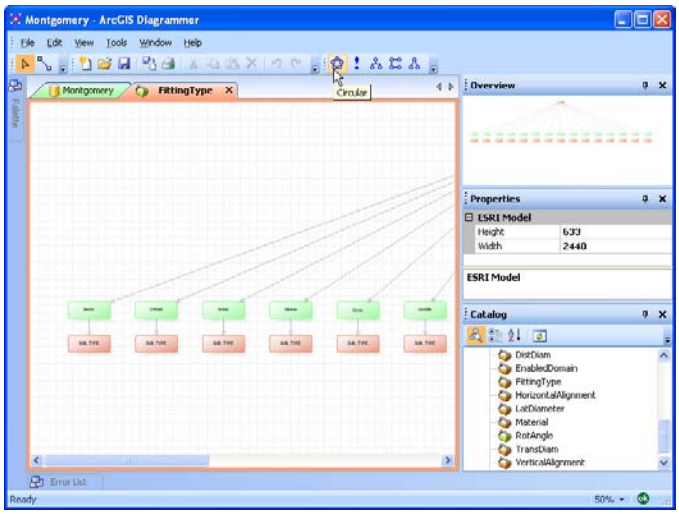


A new tab will be added to AD with the name of the selected domain in the title. A domain diagram is not editable, its primary use is to show what tables and/or feature classes are using the domain, if any.

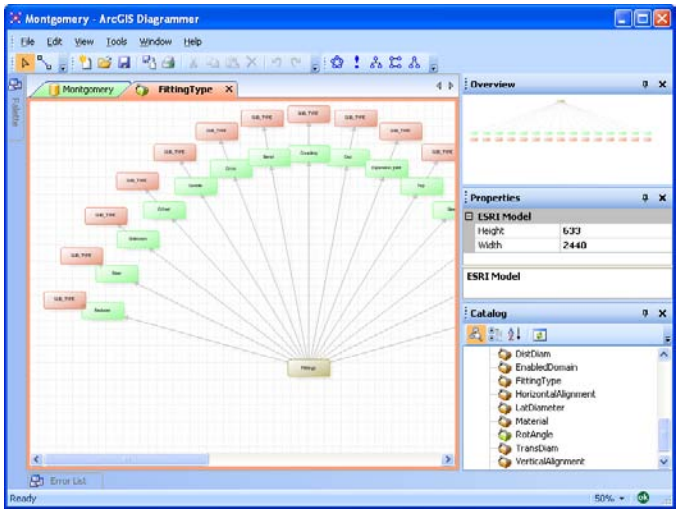
By default, the diagram scale is 100% or actual size. Because the domain diagram is quite large let's change the diagram scale to 50% so that more is visible. In the lower right hand corner of the application, click the left mouse button on the **scale dropdown menu** and select **50%**.



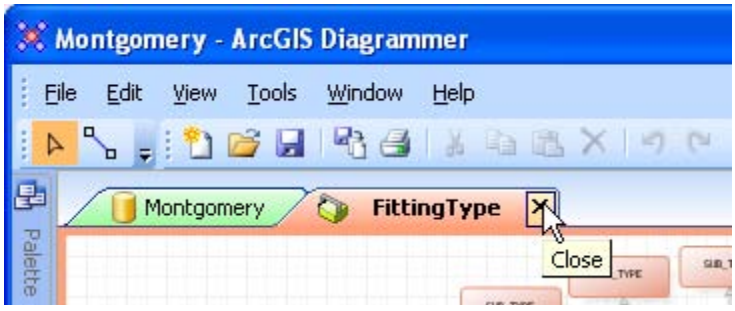
Domain diagrams only displays objects fields and subtypes fields that directly reference the selected domain. By default, AD uses a hierarchical layouts for new diagrams. Click the **Circular button** on the Layout toolbar.



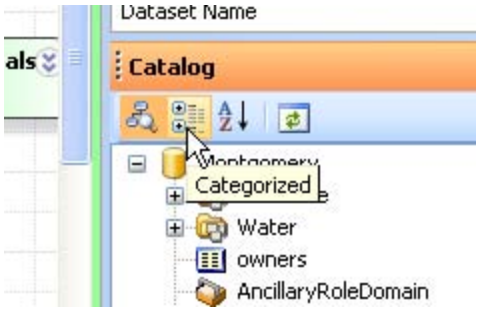
The shapes in the domain diagram will be displayed in a circular pattern as shown below. Feel free to experiment with the other layouts like *Forced Direct* and *Orthogonal*.



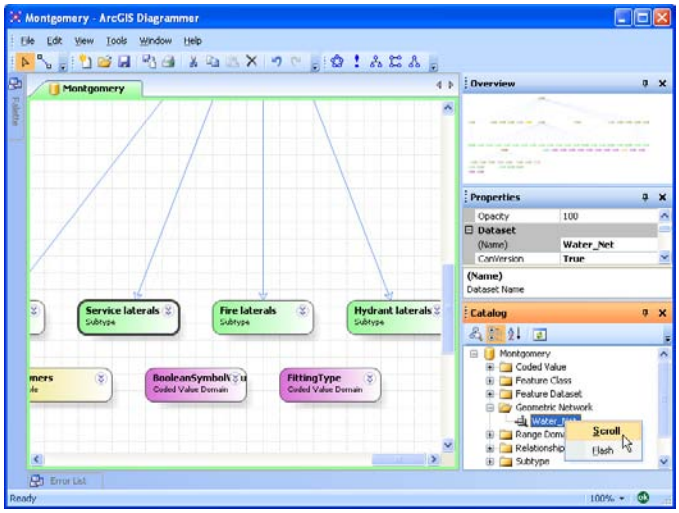
Close the domain diagram for *FittingType* by click the close button on the tab.



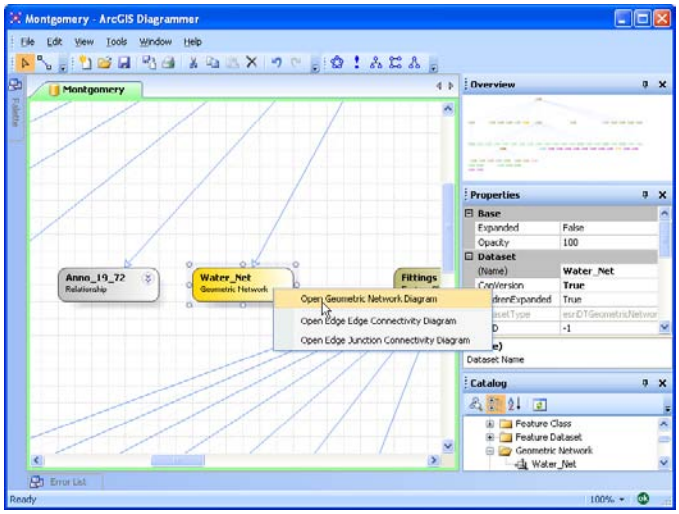
We have now returned to the main diagram. Next we want to make some changes to the *Water_Net* geometric network. It may take some time to locate the geometric network in the diagram so let's use the catalog window. Click the **Categorized** button in the Catalog window.



The categorized view is great for finding geodatabase objects if you are unsure of the exact name or its location. Expand the Geometric Network node, we can see that this xml workspace document only has one geometric network called *Water_Net*. Right click on the geometric network and select **Scroll**. This will move the horizontal and vertical scrollbars so that the geometric network is located in the center of the application.

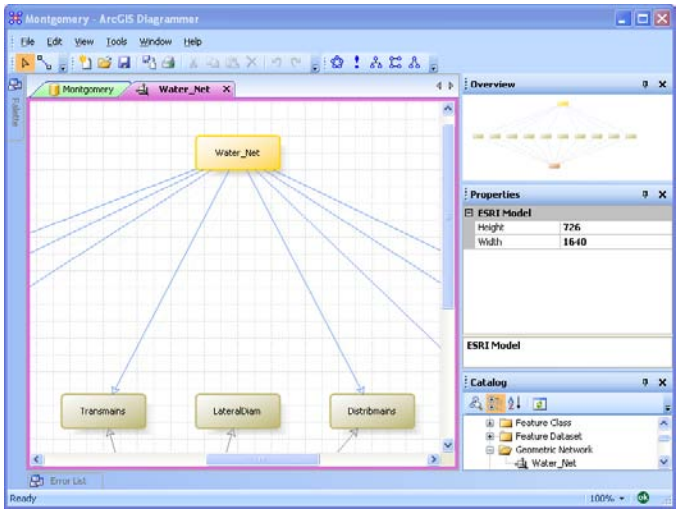


Right click on the geometric network and select **Open Geometric Network Diagram**.

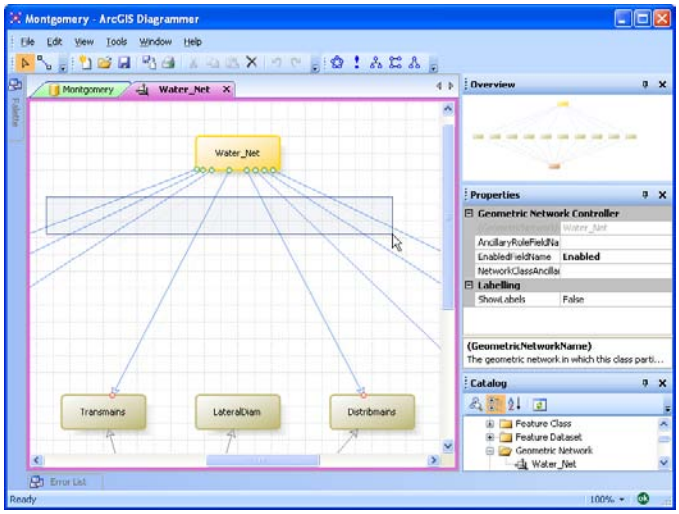


A new geometric network diagram will be added to AD. The geometric network is located near the top of the diagram and its parent feature dataset at the bottom. All feature classes that belong to the feature dataset are located in the middle of the diagram. Participating feature classes will have a blue link

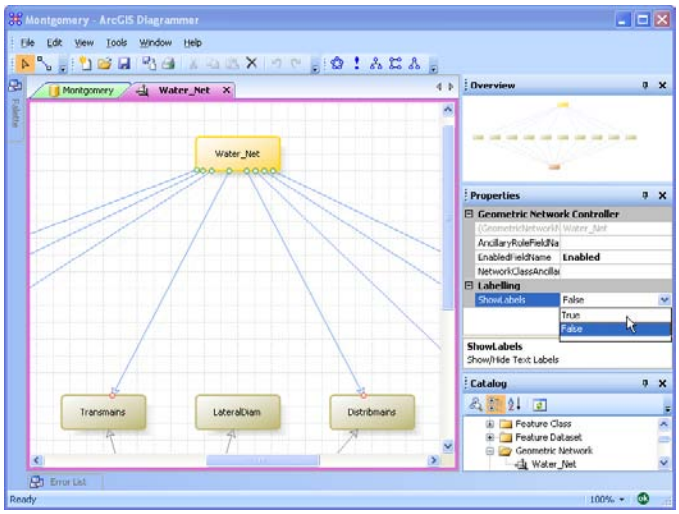
connecting them to the geometric network. In the screenshot below we can see that *LaterialDiam* does not participate in the geometric network.



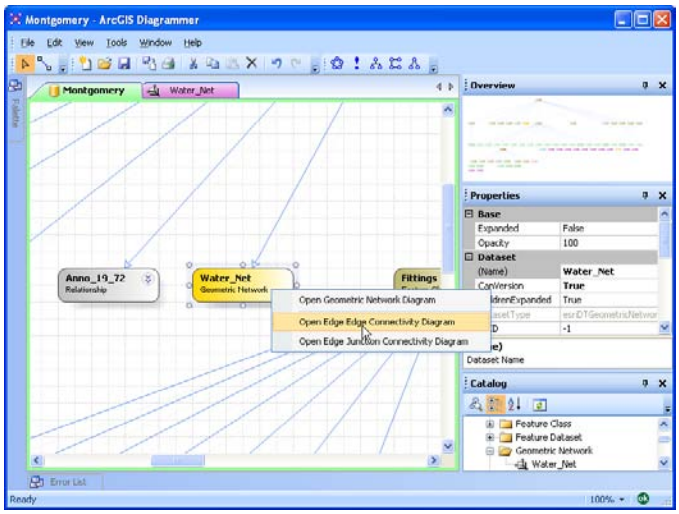
With the left mouse button drag a box over the blue links to select them.



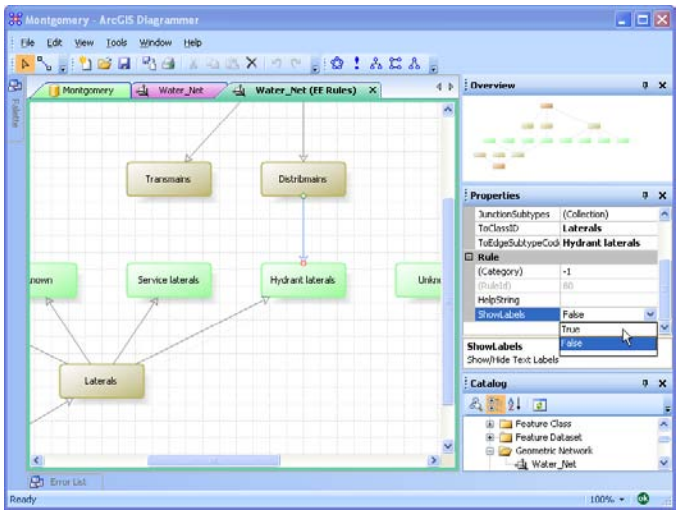
After selecting the links change the **ShowLabels** property in the property window to **True**.



The link labels will display the network ancillary role which can be either *Normal* or *Source/Sink*. Click the Montgomery tab to return to the main diagram. Right click on the Water_Net geometric netwok and select **Open Edge Edge Connectivity Diagram**.

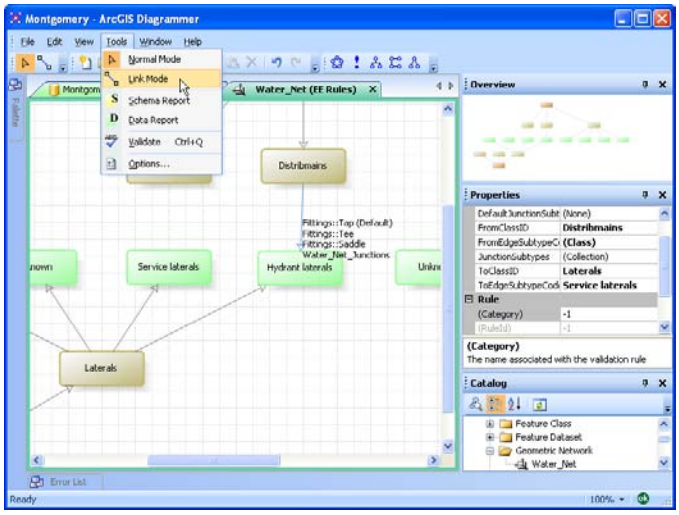


The edge edge connectivity diagram allows the visualization and modification of edge edge connectivity rules. The *from* and *to* edge feature classes are positioned at the top and bottom of the diagram respectively. Each blue link represents an edge edge connectivity rule. Locate the rule that connects the *Distmains* feature class to the *Hydrant Laterals* subtype. Select the link (or rule) with your mouse, in the properties window change the **ShowLabels** property to **True**.

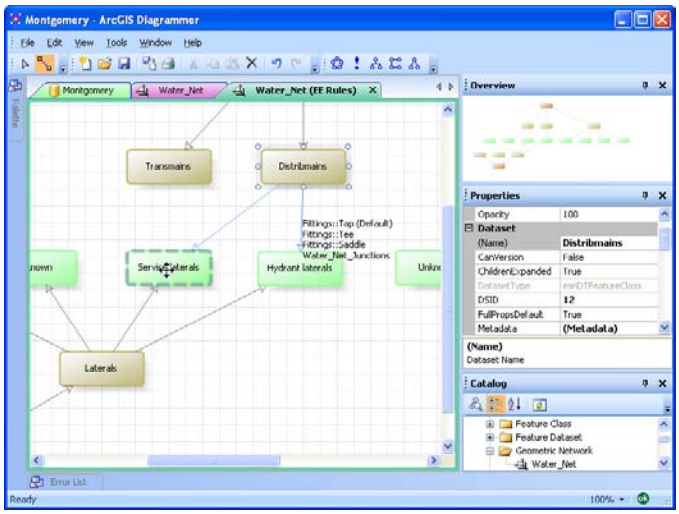


The rule label shows a list of valid junctions for this edge edge connectivity rule. There must always be at least one junction for a rule and one of which must be the default.

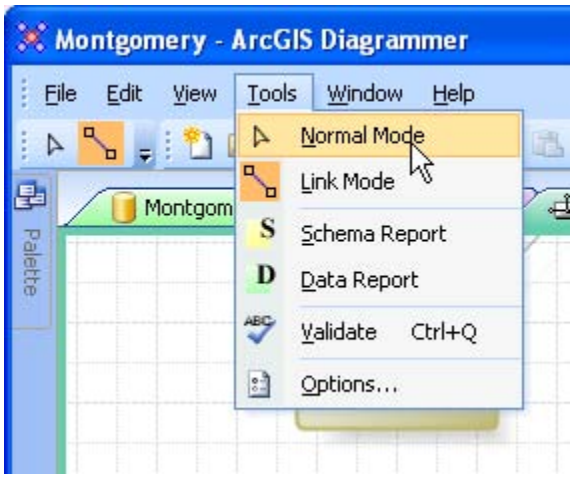
Now lets add a new edge edge connectivity rule. Click **Tools > Link** mode from the main menu.



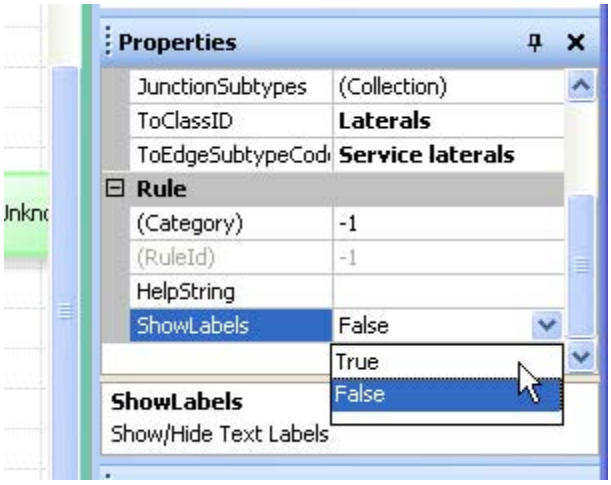
In the diagram, click the *Distmains* with the left mouse button and drag to *Service Laterals* subtype.



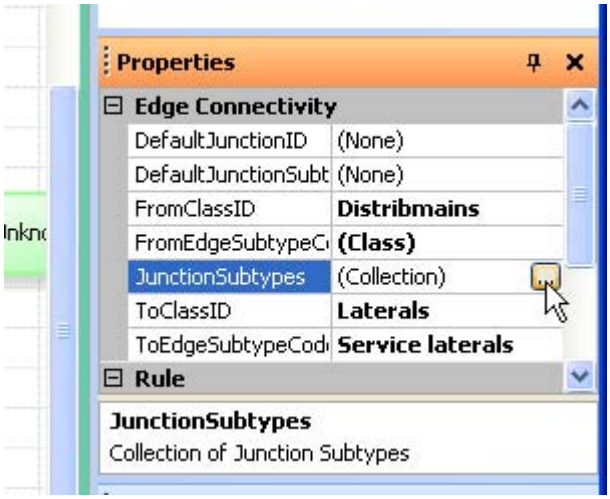
When you release the left mouse button over Service Lateral a new connectivity rule will be added. Before continuing restore the interactive mode back to normal by clicking **Tools > Normal Mode** from the main menu.



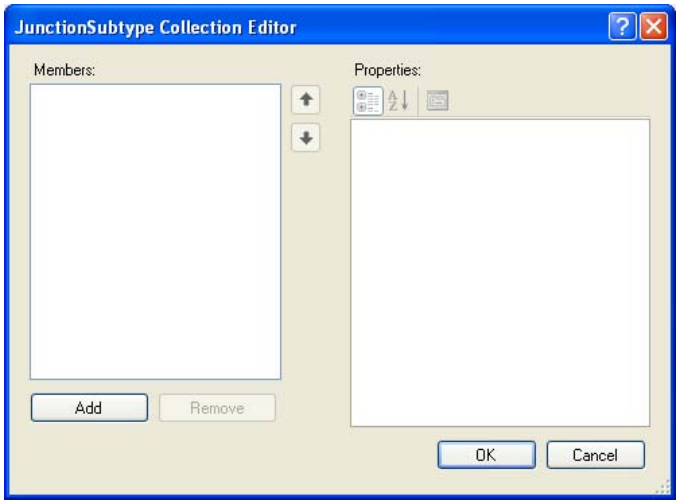
Select the new connectivity in the diagram. Change the **ShowLabels** properties to **True**.



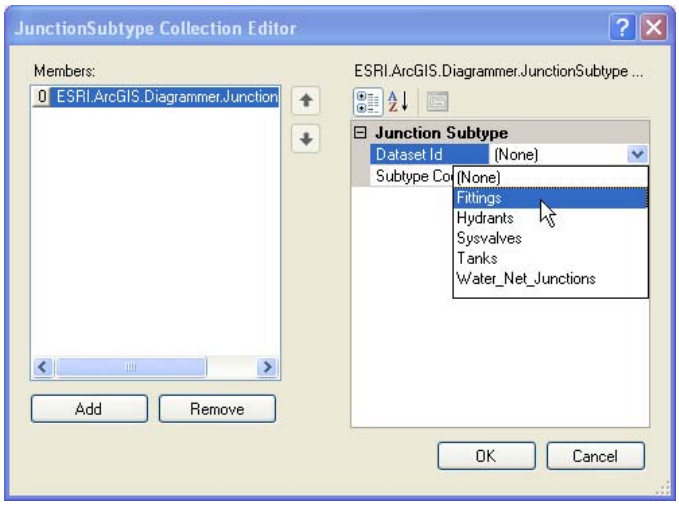
At present the new rule does not have any junctions defined. Click the ellipse button next to the JunctionSubtypes property as shown below.



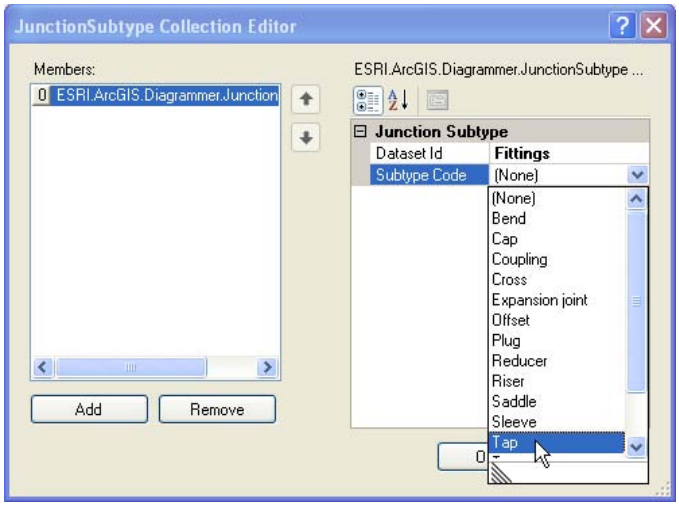
The ellipse button will launch a generic collection editor dialog.



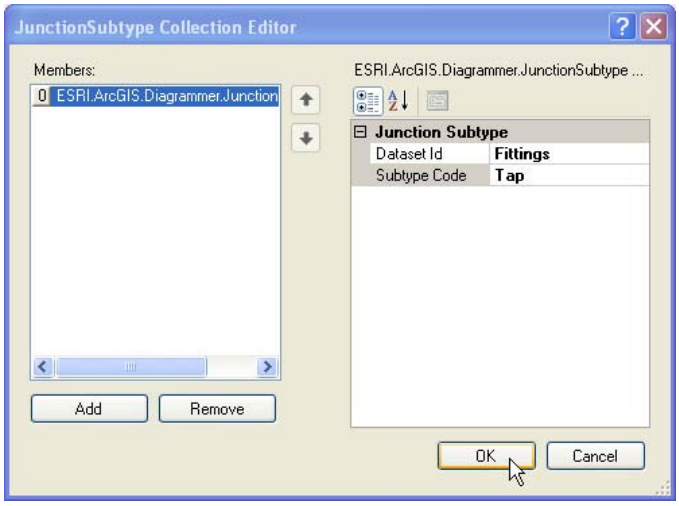
Click the **Add** button to add a new junction to the collection. For the **Dataset Id** property, click the dropdown menu and select **Fittings**.



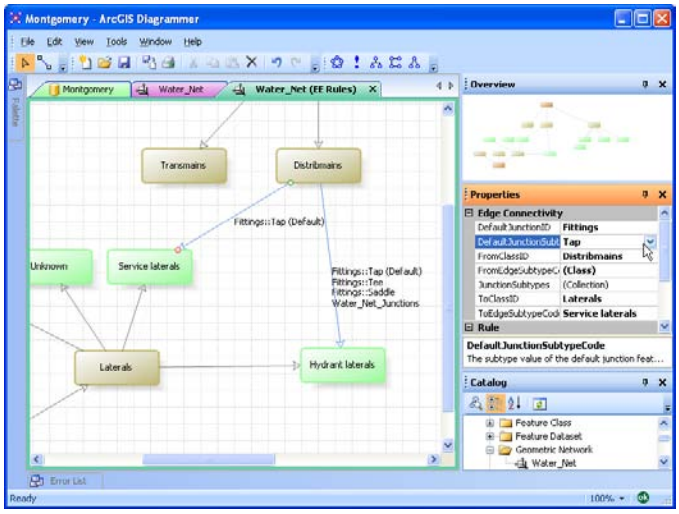
Set the Subtype Code to **Tap**.



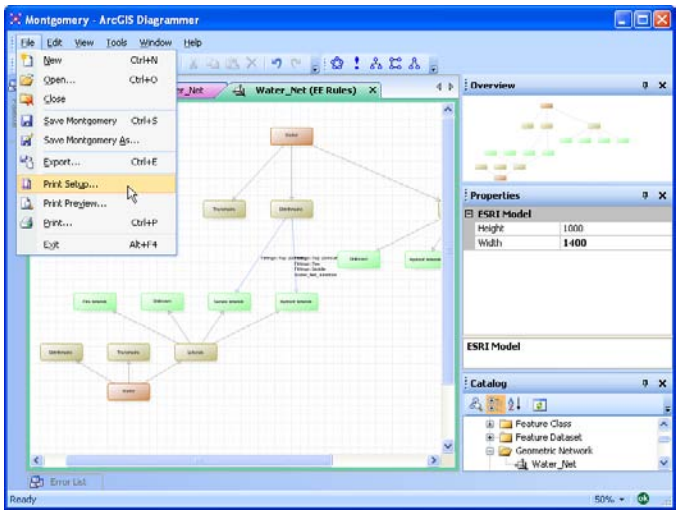
Click **OK** to update the junction collection.



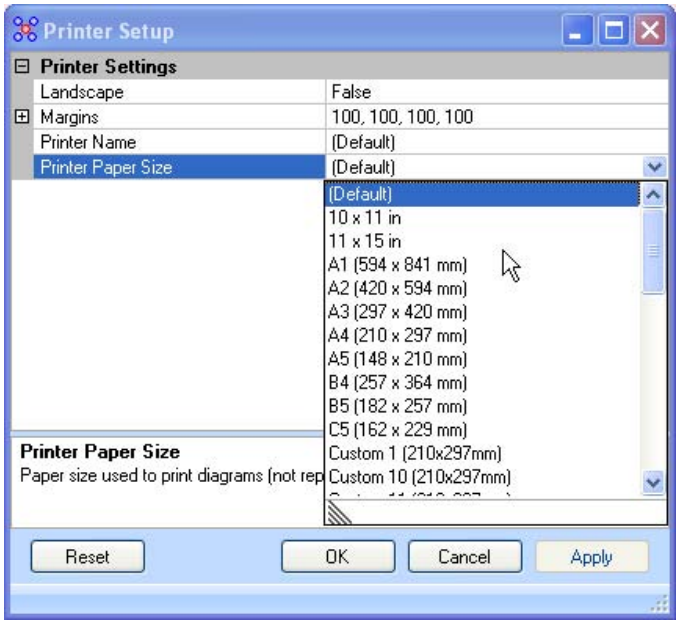
There are two more properties that need to be updated. Set the **DefaultJunctionId** to **Fittings** and the **DefaultJunctionSubtype** to **Tap**.



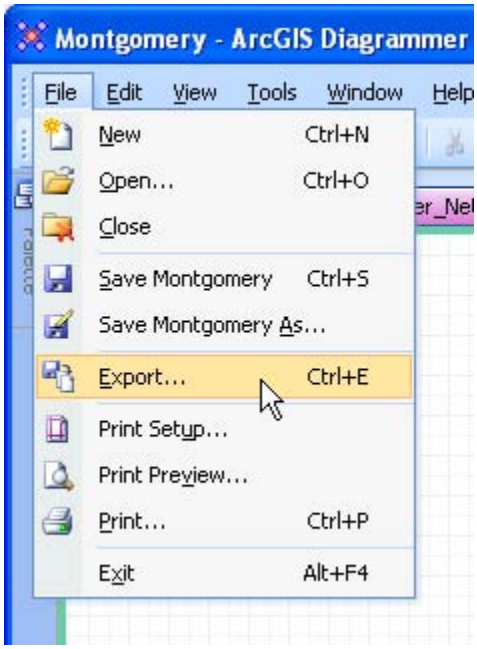
To print the contents of the currently selected tab click File > Print. By default, AD uses the default printer and page size. To change either of these click **File > Print Setup**.



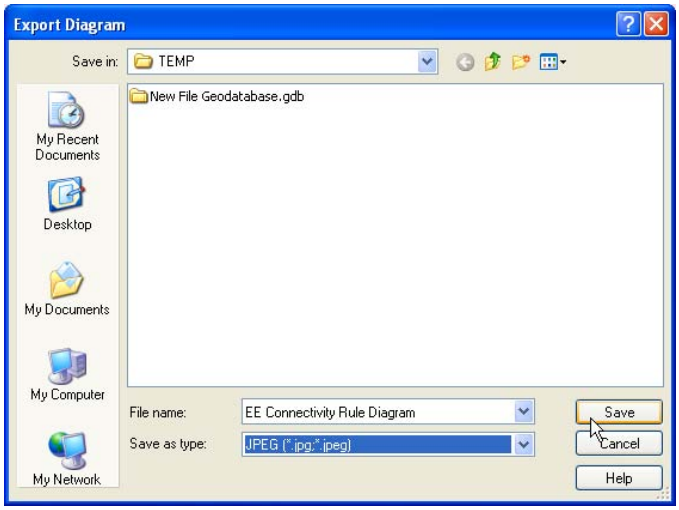
In the screenshot below, shows the printer setup dialog for changing printer properties.



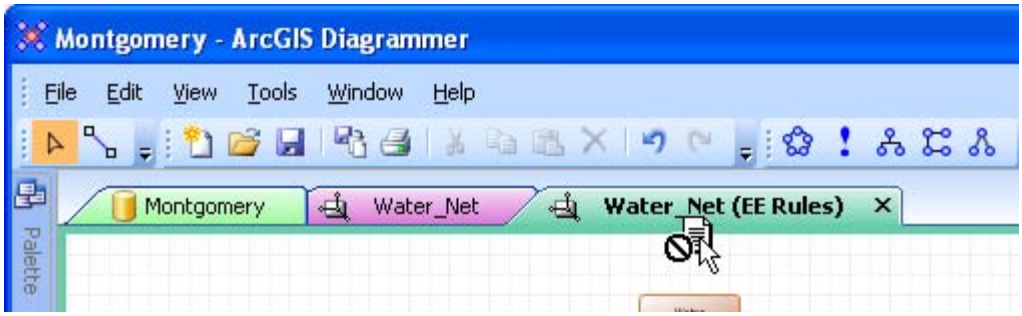
However, in some cases you may want to export a diagram to an image for inclusion in a report or email message. To export a diagram click **File > Export**.



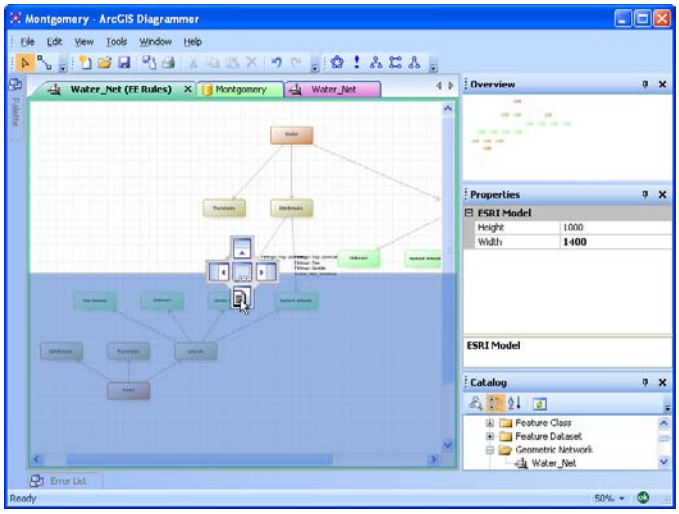
The default output image type is JPEG. To choose an alternative image type click the Save as type dropdown menu.

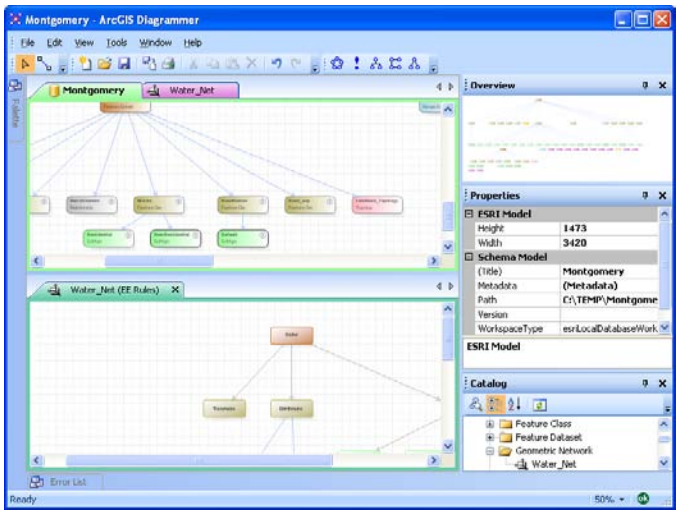


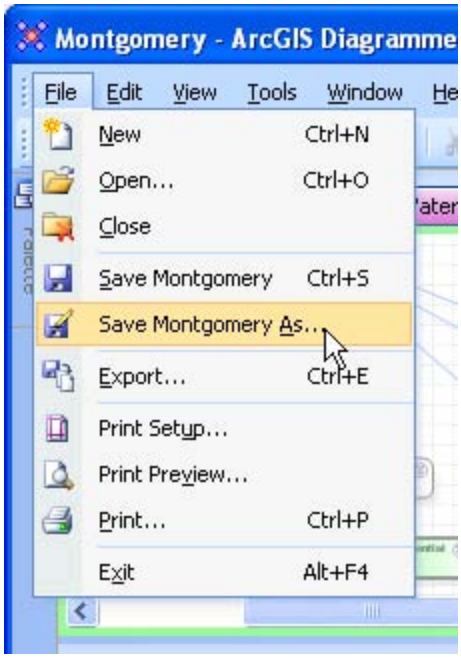
Sometimes it may be necessary to view two or more diagrams simultaneously. To commence a docking operation start dragging the tab towards the center of the application.

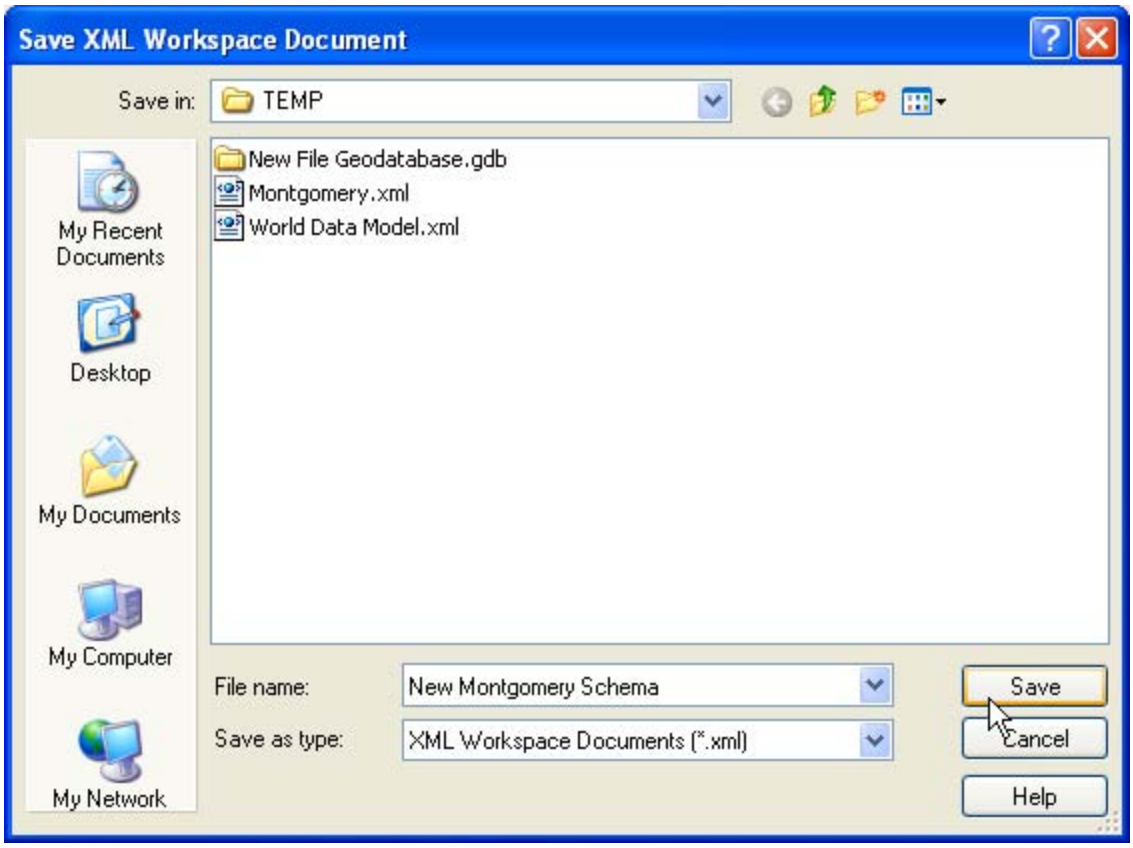


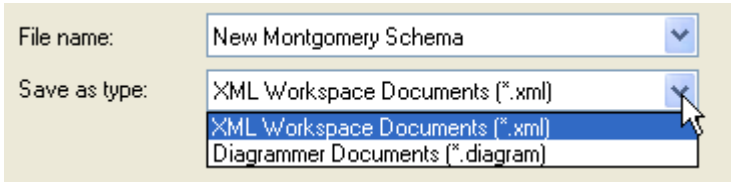
To dock the tab in the lower half of the application drop the tab on the lower docking hint as shown below.

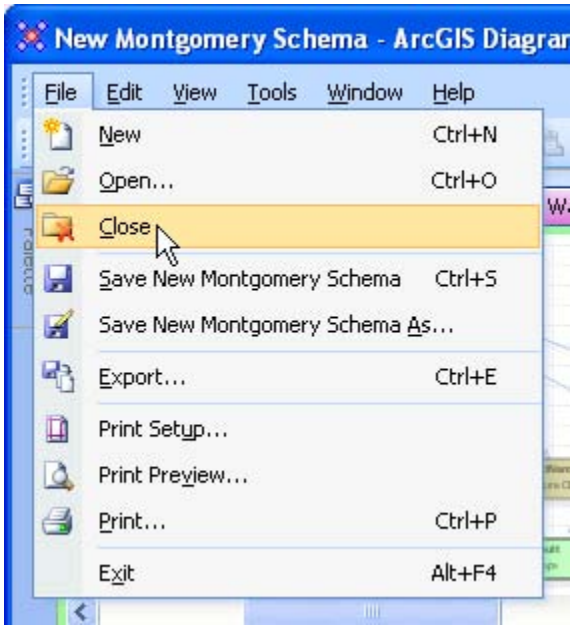


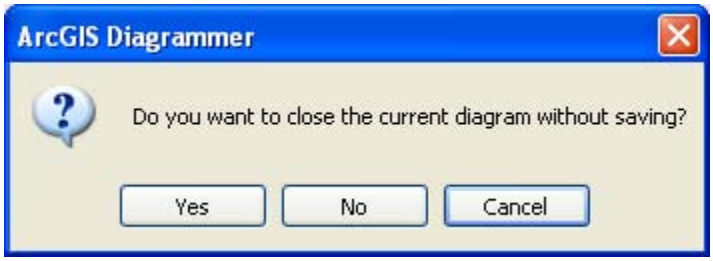

Montgomery - ArcGIS Diagrammer
File Edit View Tools Window Help
Montgomery
Water_Net
Overview
Properties
ESRI Model
Height 1473
Width 3420
Schema Model
(Title) Montgomery
Metadata (Metadata)
Path C:\TEMP\Montgome
Version
WorkspaceType esriLocalDatabaseWork
ESRI Model
Catalog
Feature Class
Feature Dataset
Geometric Network
Water_Net
Water_Net (EE Rules)
Error List
Ready
50%

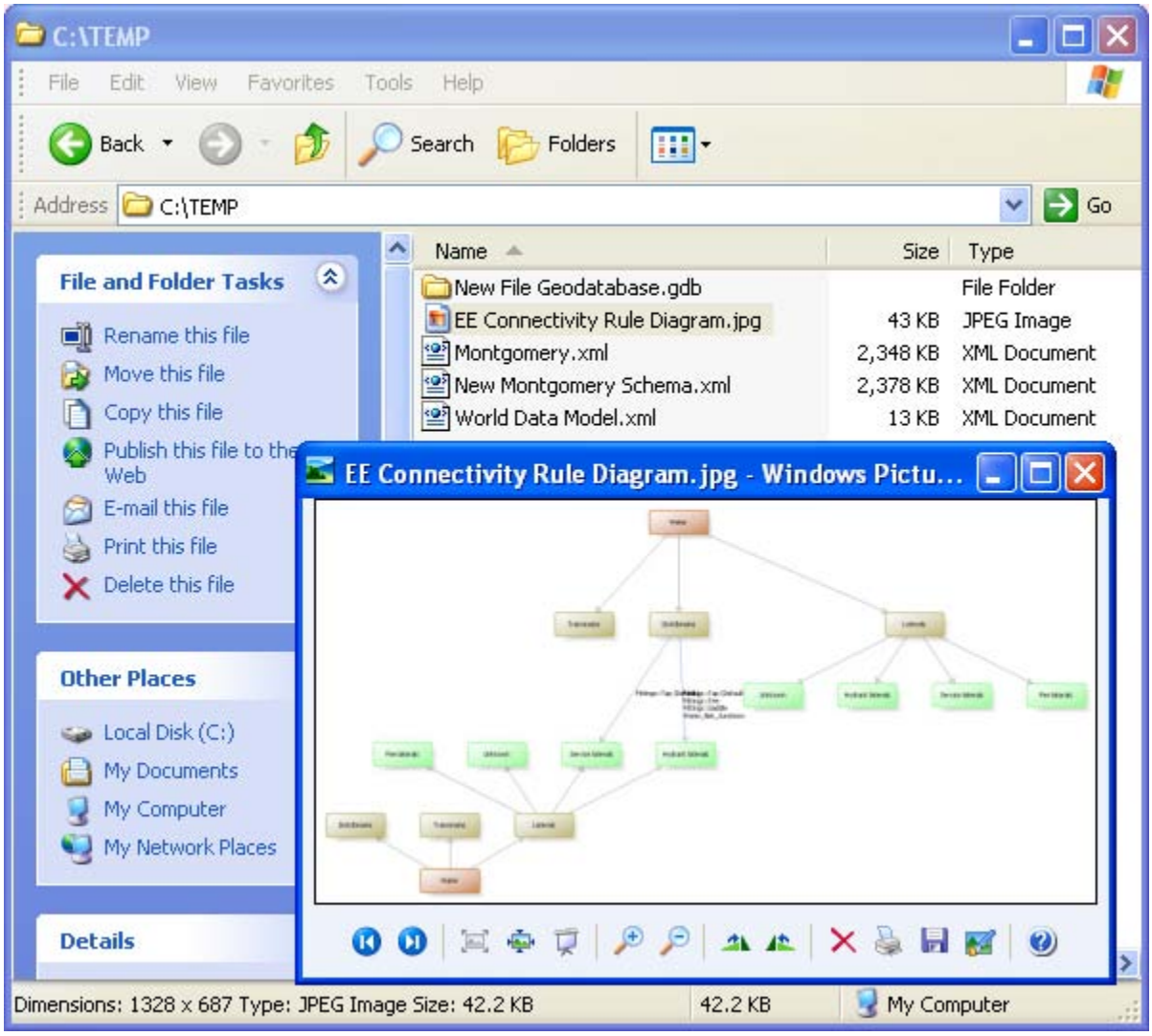

Montgomery - ArcGIS Diagramme
File Edit View Tools Window He
New Ctrl+N
Open... Ctrl+O
Close
Save Montgomery Ctrl+S
Save Montgomery As...
Export... Ctrl+E
Print Setup...
Print Preview...
Print... Ctrl+P
Exit Alt+F4

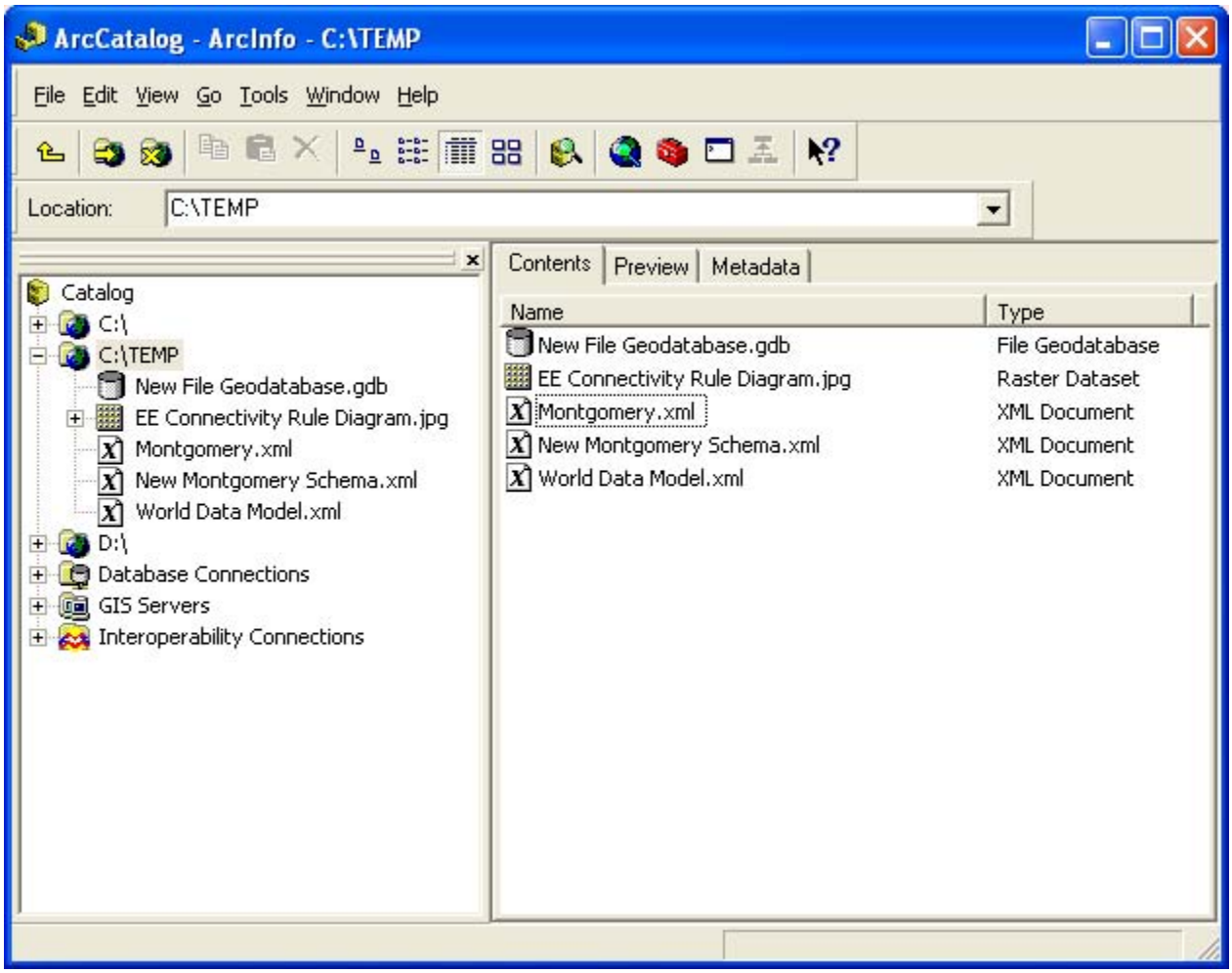

Save XML Workspace Document
Save in:
TEMP
New File Geodatabase.gdb
Montgomery.xml
World Data Model.xml
My Recent Documents
Desktop
My Documents
My Computer
My Network
File name:
New Montgomery Schema
Save as type:
XML Workspace Documents (*.xml)
Save
Cancel
Help

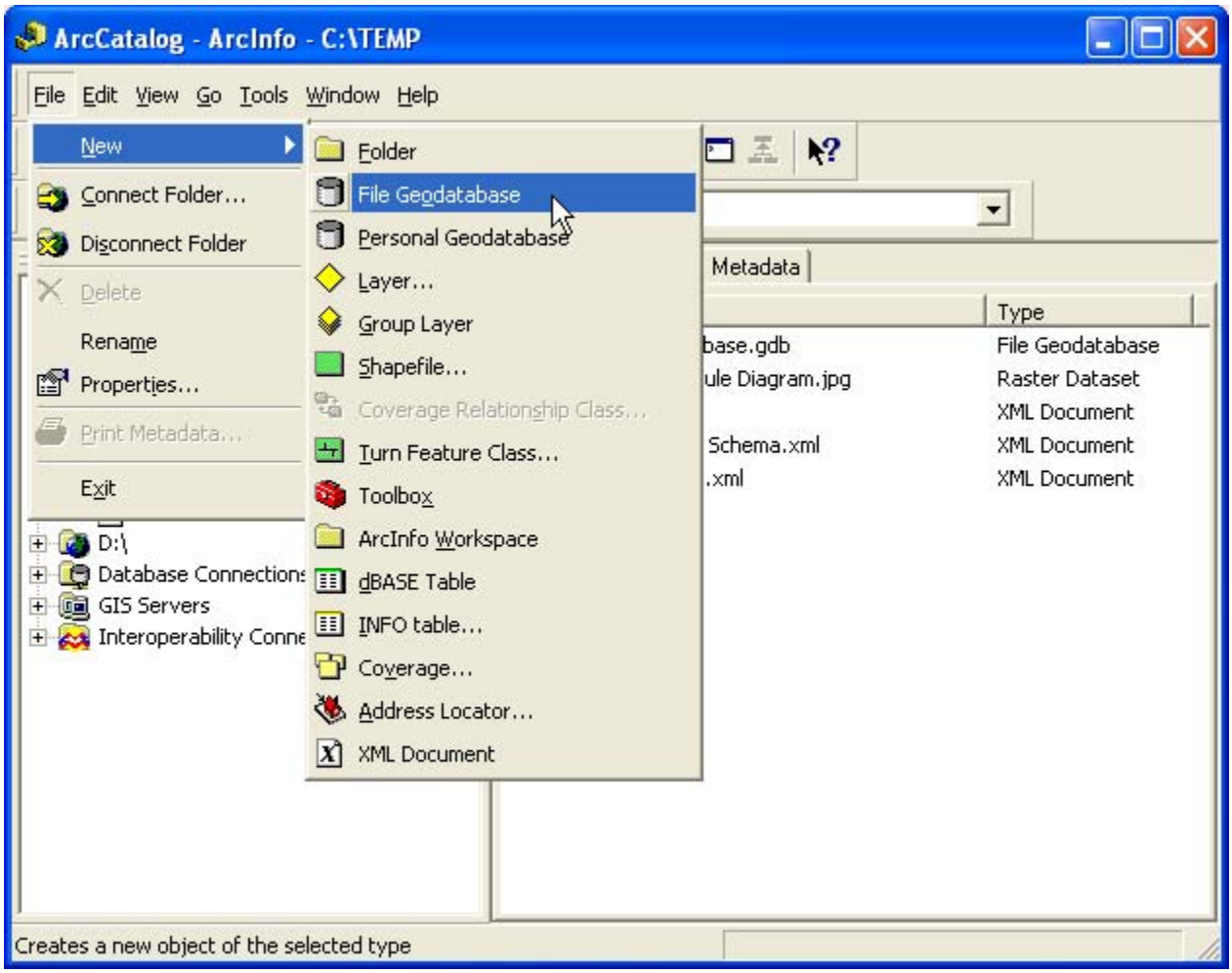

File name:
New Montgomery Schema
Save as type:
XML Workspace Documents (*.xml)
XML Workspace Documents (*.xml)
Diagrammer Documents (*.diagram)

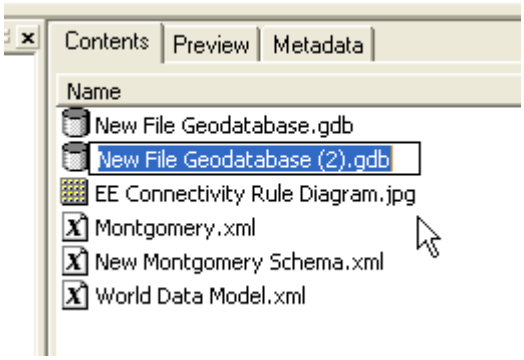

New Montgomery Schema - ArcGIS Diagrar
File
Edit
View
Tools
Window
Help
New Ctrl+N
Open... Ctrl+O
Close
Save New Montgomery Schema Ctrl+S
Save New Montgomery Schema As...
Export... Ctrl+E
Print Setup...
Print Preview...
Print... Ctrl+P
Exit Alt+F4

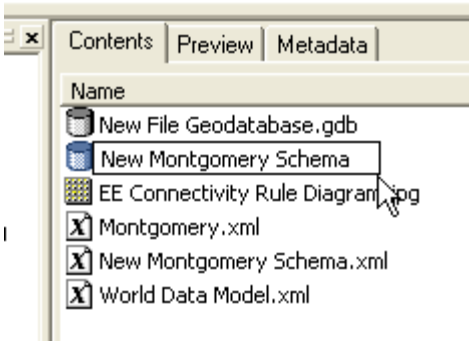

ArcGIS Diagrammer
Do you want to close the current diagram without saving?
Yes
No
Cancel

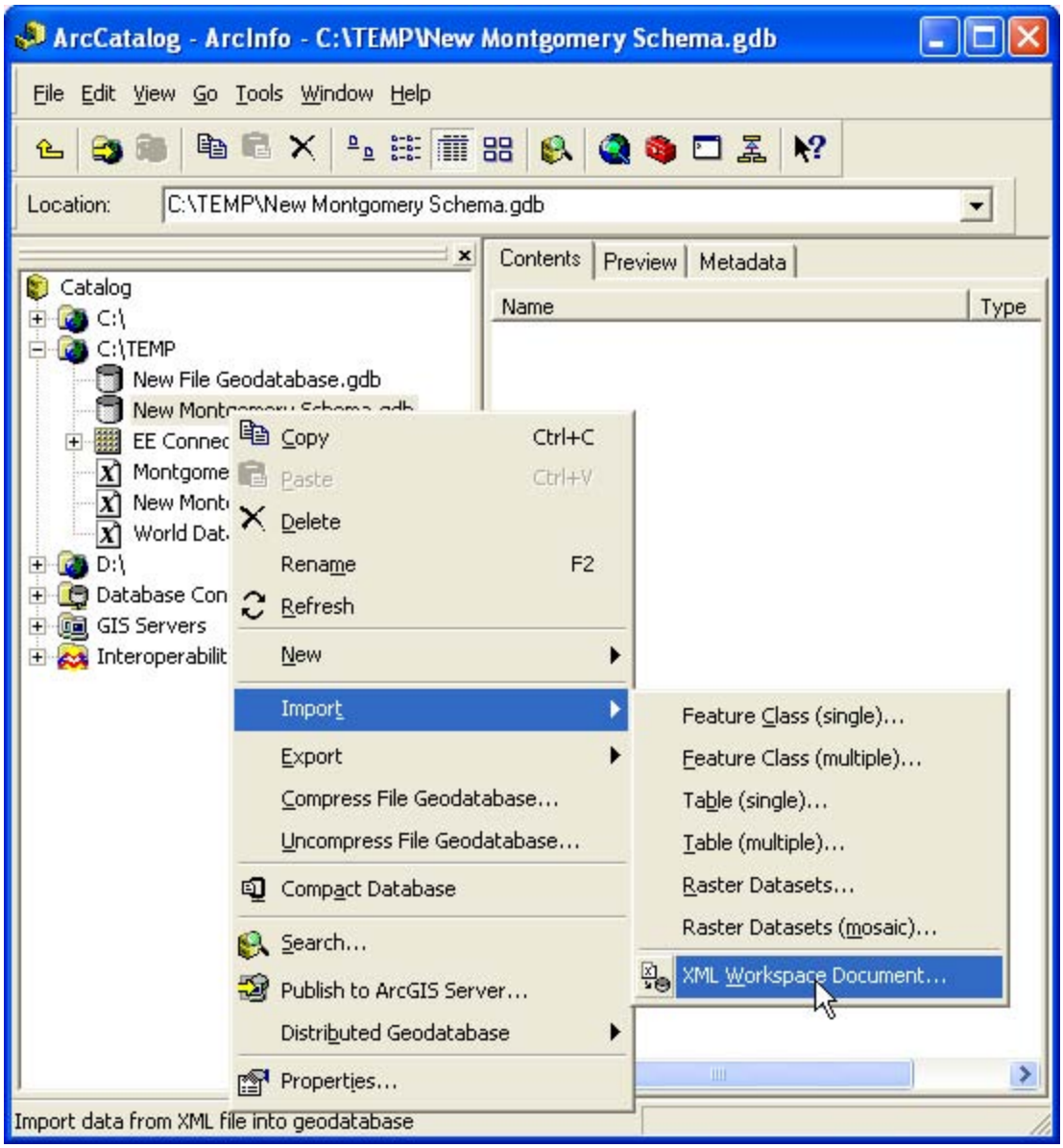

C:\TEMP
File Edit View Favorites Tools Help
Back Search Folders
Address C:\TEMP
Go
File and Folder Tasks
Rename this file
Move this file
Copy this file
Publish this file to the Web
E-mail this file
Print this file
Delete this file
Other Places
Local Disk (C:)
My Documents
My Computer
My Network Places
Details
Name
Size
Type
New File Geodatabase.gdb
File Folder
EE Connectivity Rule Diagram.jpg
43 KB
JPEG Image
Montgomery.xml
2,348 KB
XML Document
New Montgomery Schema.xml
2,378 KB
XML Document
World Data Model.xml
13 KB
XML Document
EE Connectivity Rule Diagram.jpg - Windows Pictu...
Dimensions: 1328 x 687 Type: JPEG Image Size: 42.2 KB
42.2 KB
My Computer

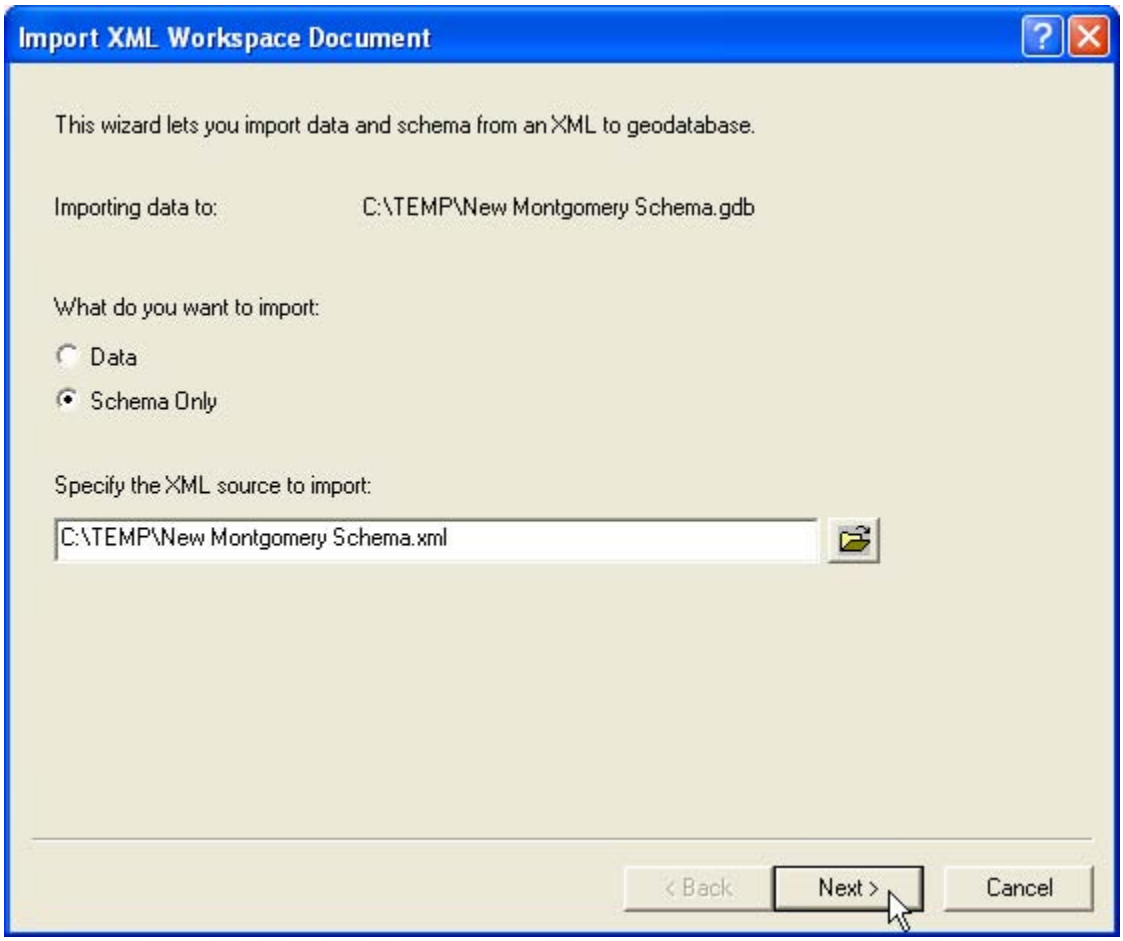

ArcCatalog - ArcInfo - C:\TEMP
File Edit View Go Tools Window Help
Location: C:\TEMP
Catalog
C:\
C:\TEMP
New File Geodatabase.gdb
EE Connectivity Rule Diagram.jpg
Montgomery.xml
New Montgomery Schema.xml
World Data Model.xml
D:\
Database Connections
GIS Servers
Interoperability Connections
Contents
Preview
Metadata
Name
Type
New File Geodatabase.gdb
File Geodatabase
EE Connectivity Rule Diagram.jpg
Raster Dataset
Montgomery.xml
XML Document
New Montgomery Schema.xml
XML Document
World Data Model.xml
XML Document

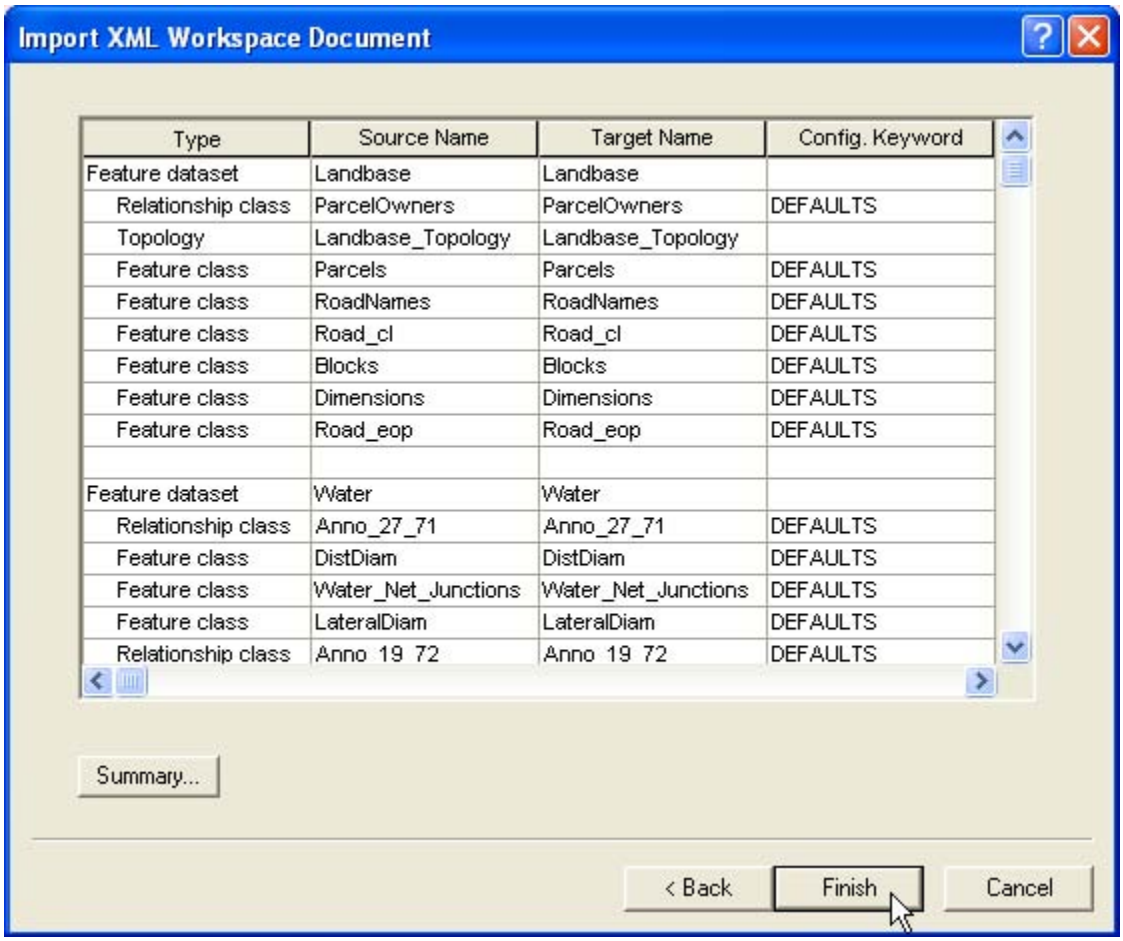

ArcCatalog - ArcInfo - C:\TEMP
File Edit View Go Tools Window Help
New
Connect Folder...
Disconnect Folder
Delete
Rename
Properties...
Print Metadata...
Exit
Folder
File Geodatabase
Personal Geodatabase
Layer...
Group Layer
Shapefile...
Coverage Relationship Class...
Turn Feature Class...
Toolbox
ArcInfo Workspace
dBASE Table
INFO table...
Coverage...
Address Locator...
XML Document
D:\
Database Connections
GIS Servers
Interoperability Conne
Metadata
Type
base.gdb
File Geodatabase
ule Diagram.jpg
Raster Dataset
XML Document
Schema.xml
XML Document
.xml
XML Document
Creates a new object of the selected type

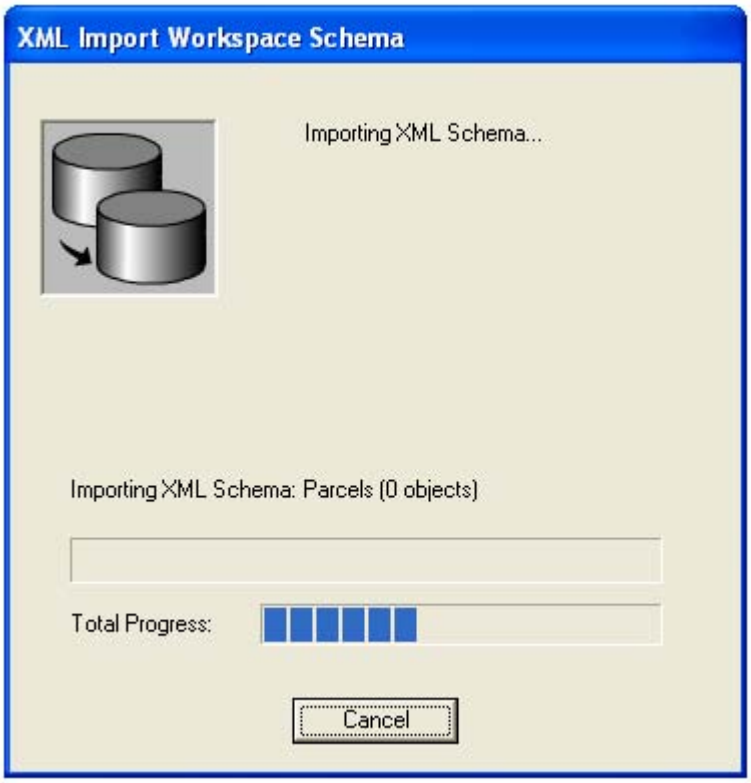

Contents
Preview
Metadata
Name
New File Geodatabase.gdb
New File Geodatabase (2).gdb
EE Connectivity Rule Diagram.jpg
Montgomery.xml
New Montgomery Schema.xml
World Data Model.xml

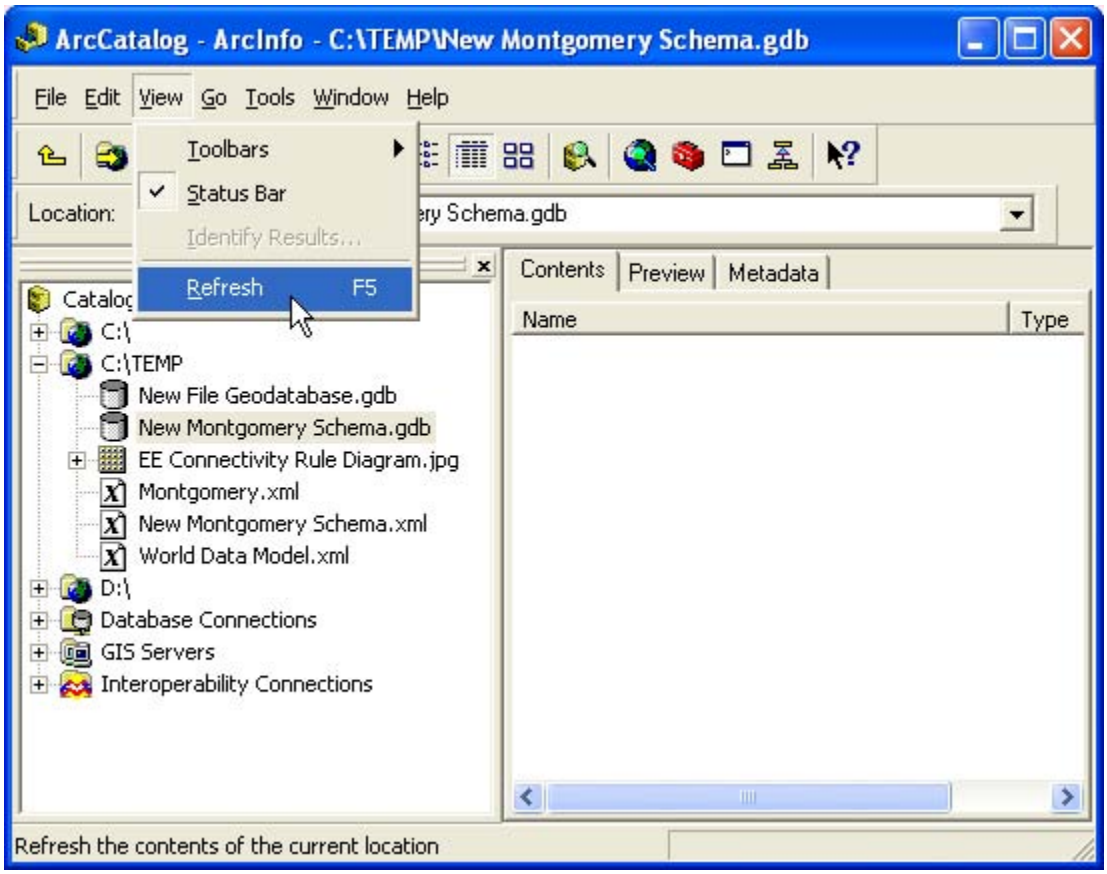

Contents
Preview
Metadata
Name
New File Geodatabase.gdb
New Montgomery Schema
EE Connectivity Rule Diagram.jpg
Montgomery.xml
New Montgomery Schema.xml
World Data Model.xml

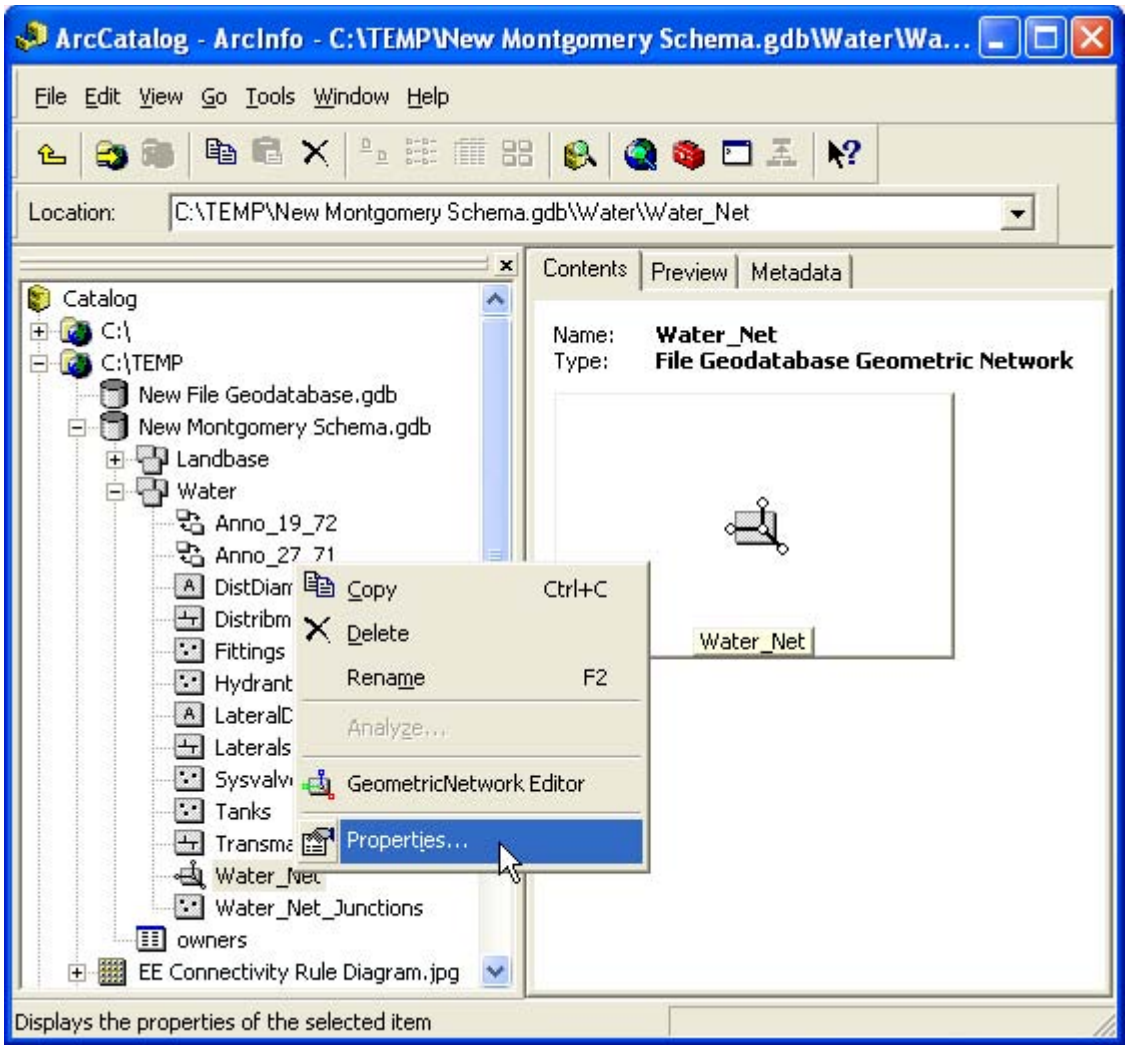

ArcCatalog - ArcInfo - C:\TEMP\New Montgomery Schema.gdb
File Edit View Go Tools Window Help
Location: C:\TEMP\New Montgomery Schema.gdb
Catalog
C:\
C:\TEMP
New File Geodatabase.gdb
D:\
Database Con
GIS Servers
Interoperabilit
Contents
Preview
Metadata
Name
Type
Copy Ctrl+C
Paste Ctrl+V
Delete
Rename F2
Refresh
New
Import
Export
Compress File Geodatabase...
Uncompress File Geodatabase...
Compact Database
Search...
Publish to ArcGIS Server...
Distributed Geodatabase
Properties...
Feature Class (single)...
Feature Class (multiple)...
Table (single)...
Table (multiple)...
Raster Datasets...
Raster Datasets (mosaic)...
XML Workspace Document...
Import data from XML file into geodatabase

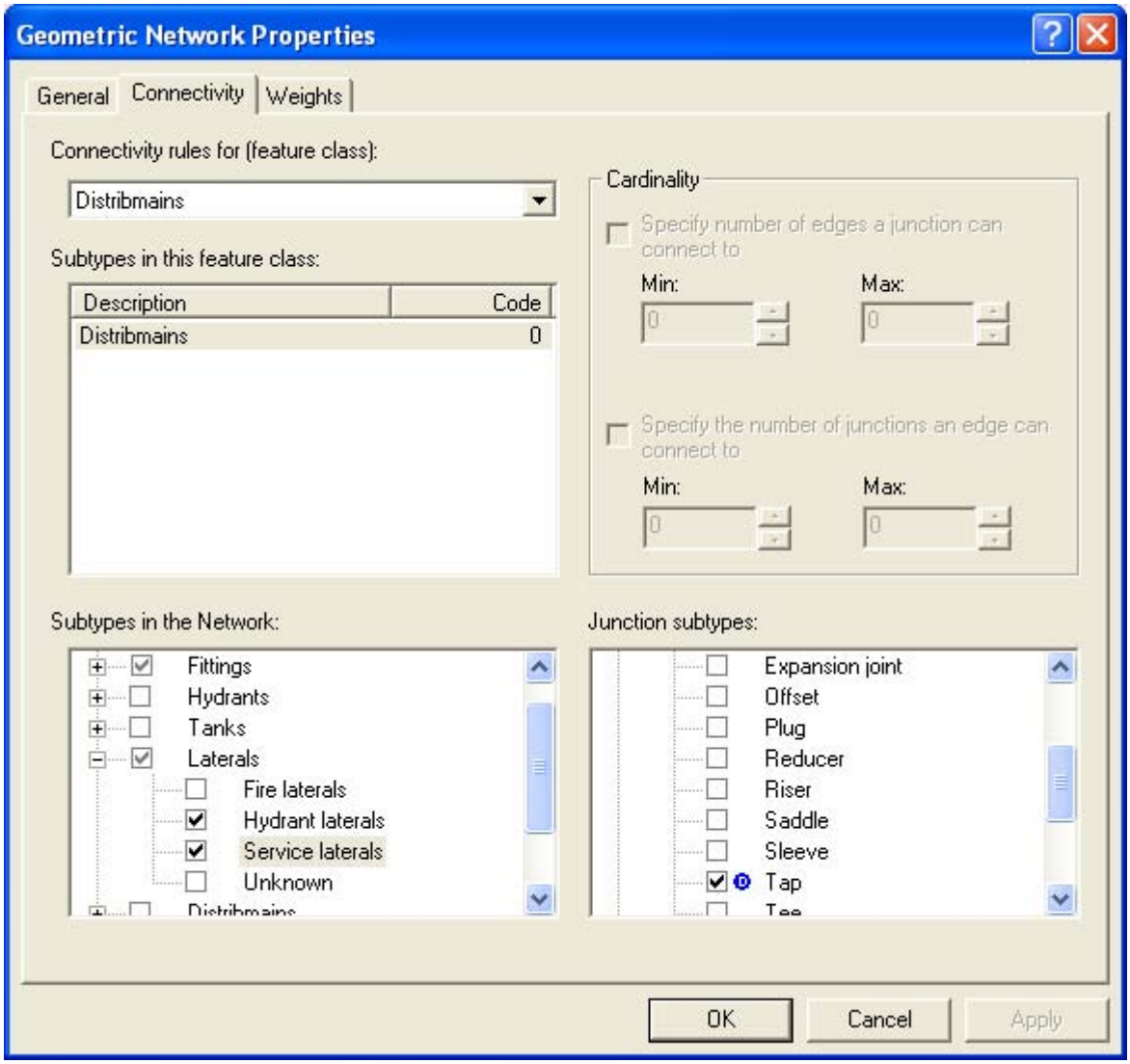

Import XML Workspace Document
This wizard lets you import data and schema from an XML to geodatabase.
Importing data to:
C:\TEMP\New Montgomery Schema.gdb
What do you want to import:
Data
Schema Only
Specify the XML source to import:
C:\TEMP\New Montgomery Schema.xml
< Back
Next >
Cancel

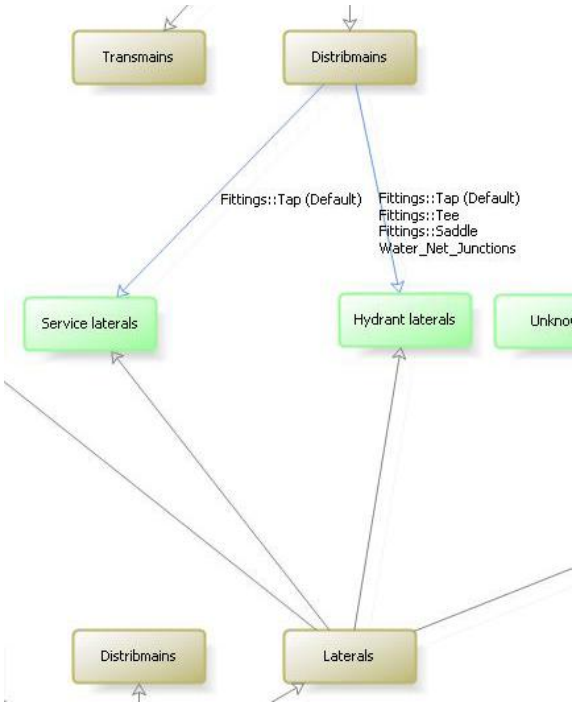

Import XML Workspace Document
Type
Source Name
Target Name
Config. Keyword
Feature dataset
Landbase
Landbase
Relationship class
ParcelOwners
ParcelOwners
DEFAULTS
Topology
Landbase_Topology
Landbase_Topology
Feature class
Parcels
Parcels
DEFAULTS
Feature class
RoadNames
RoadNames
DEFAULTS
Feature class
Road_cl
Road_cl
DEFAULTS
Feature class
Blocks
Blocks
DEFAULTS
Feature class
Dimensions
Dimensions
DEFAULTS
Feature class
Road_eop
Road_eop
DEFAULTS
Feature dataset
Water
Water
Relationship class
Anno_27_71
Anno_27_71
DEFAULTS
Feature class
DistDiam
DistDiam
DEFAULTS
Feature class
Water_Net_Junctions
Water_Net_Junctions
DEFAULTS
Feature class
LateralDiam
LateralDiam
DEFAULTS
Relationship class
Anno 19 72
Anno 19 72
DEFAULTS
Summary...
< Back
Finish
Cancel

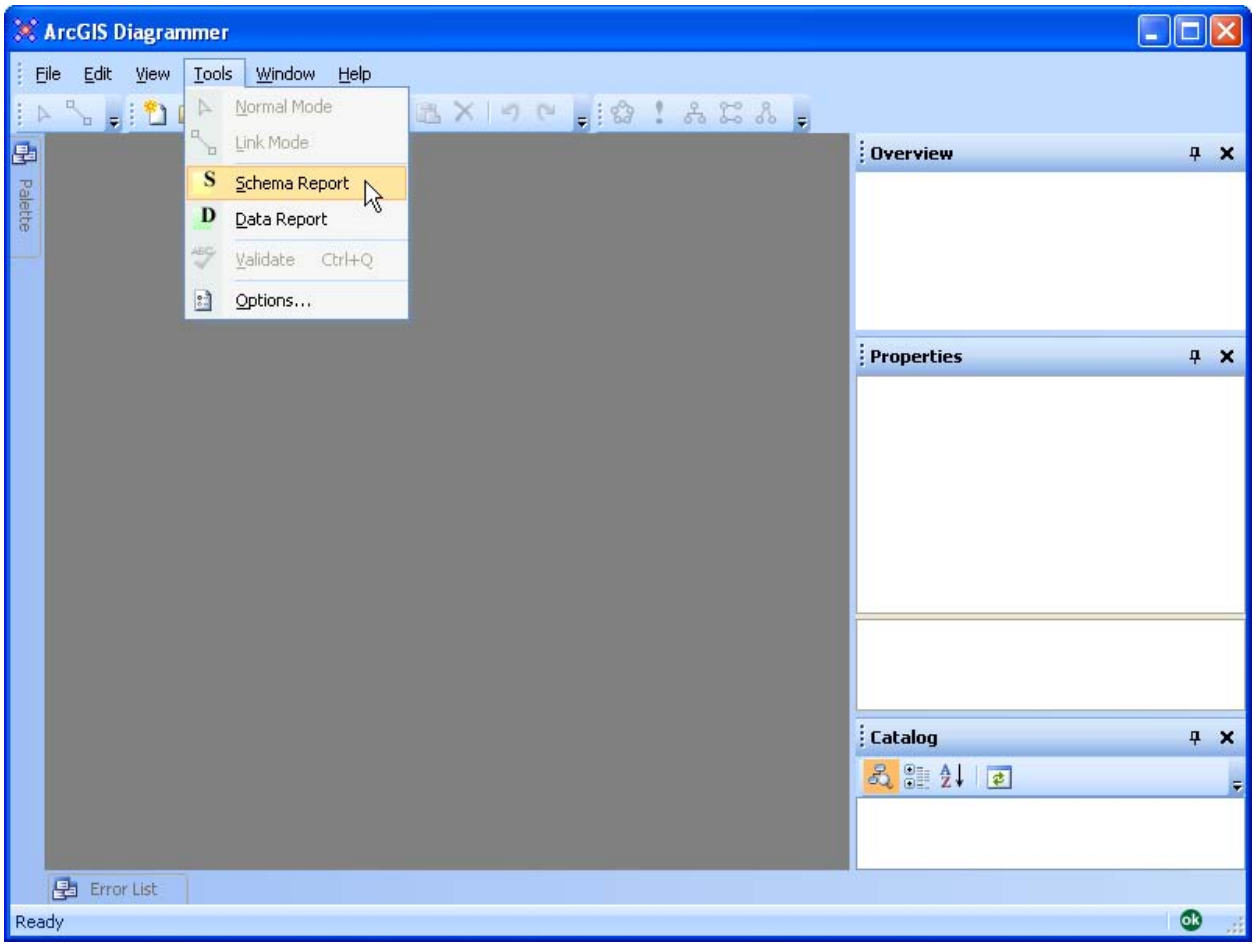

XML Import Workspace Schema
Importing XML Schema...
Importing XML Schema: Parcels (0 objects)
Total Progress:
Cancel

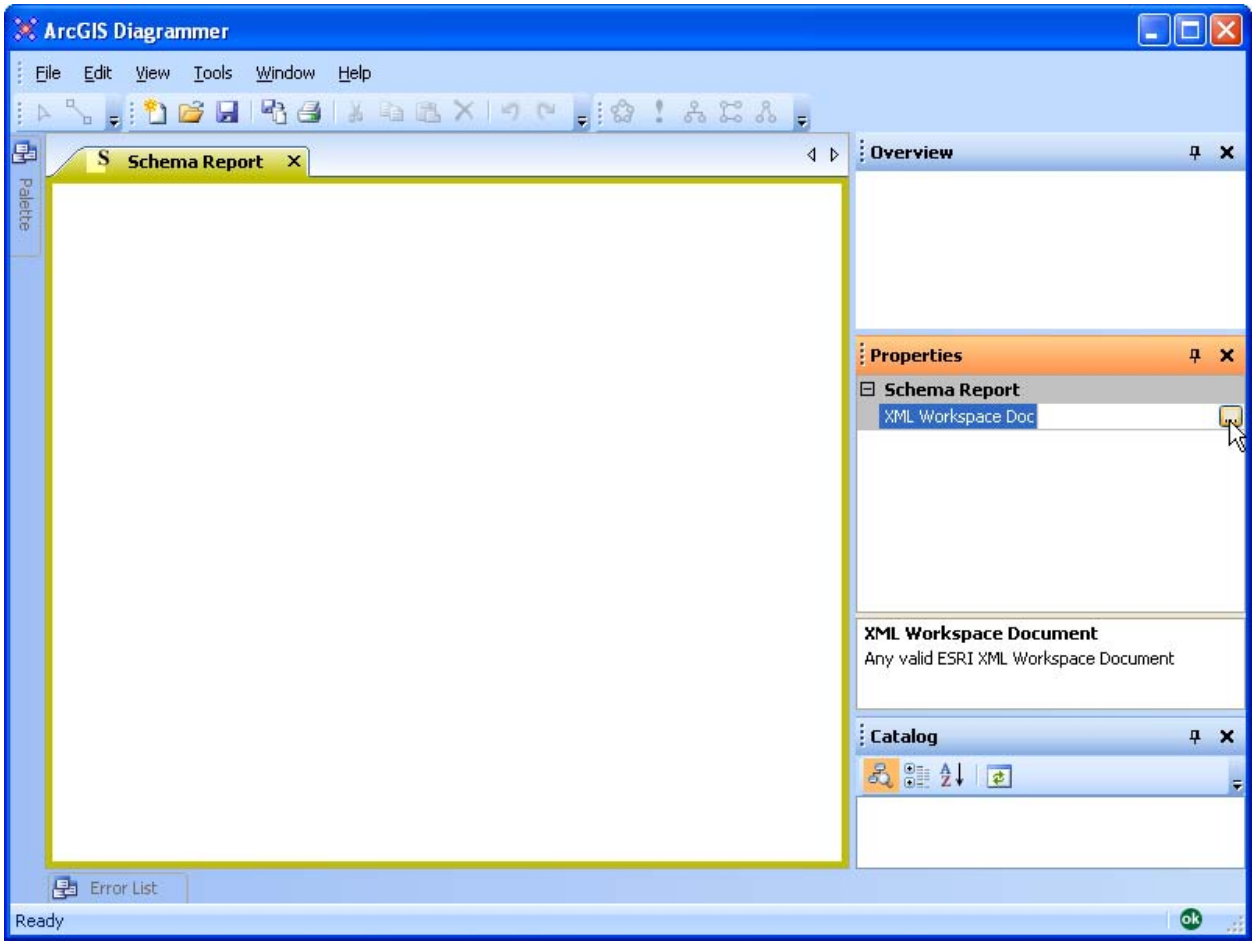

ArcCatalog - ArcInfo - C:\TEMP\New Montgomery Schema.gdb
File Edit View Go Tools Window Help
Toolbars
Status Bar
Identify Results...
Refresh F5
Location:
Schema.gdb
Contents Preview Metadata
Name Type
C:\
C:\TEMP
New File Geodatabase.gdb
New Montgomery Schema.gdb
EE Connectivity Rule Diagram.jpg
Montgomery.xml
New Montgomery Schema.xml
World Data Model.xml
D:\
Database Connections
GIS Servers
Interoperability Connections
Refresh the contents of the current location

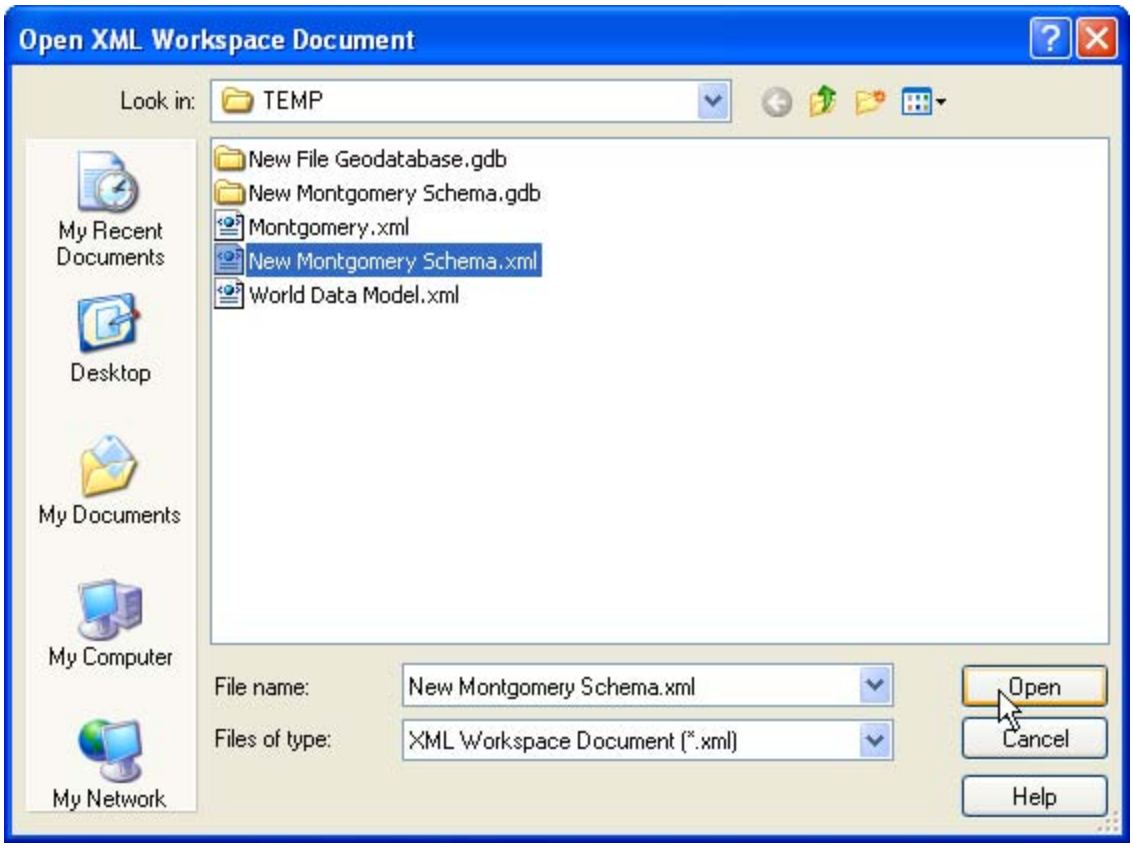

ArcCatalog - ArcInfo - C:\TEMP\New Montgomery Schema.gdb\Water\Wa...
File Edit View Go Tools Window Help
Location: C:\TEMP\New Montgomery Schema.gdb\Water\Water_Net
Catalog
C:\
C:\TEMP
New File Geodatabase.gdb
New Montgomery Schema.gdb
Landbase
Water
Anno_19_72
Anno_27_71
DistDiam
Distribm
Fittings
Hydrant
LateralD
Laterals
Sysvalv
Tanks
Transma
Water_Net
Water_Net_Junctions
owners
EE Connectivity Rule Diagram.jpg
Copy Ctrl+C
Delete
Rename F2
Analyze...
GeometricNetwork Editor
Properties...
Contents Preview Metadata
Name: Water_Net
Type: File Geodatabase Geometric Network
Water_Net
Displays the properties of the selected item

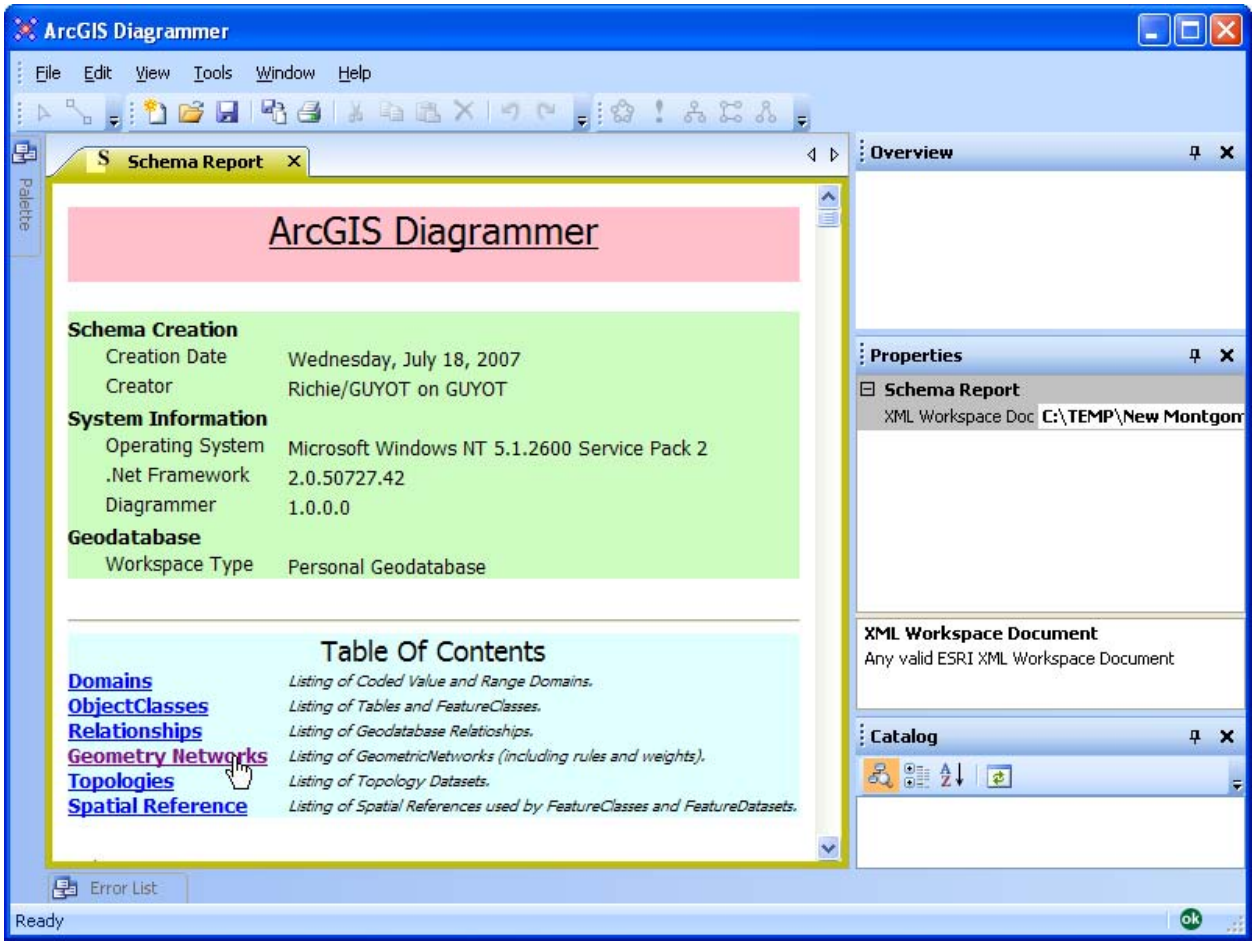

Geometric Network Properties
General
Connectivity
Weights
Connectivity rules for (feature class):
Distribmains
Subtypes in this feature class:
Description
Code
Distribmains
0
Cardinality
Specify number of edges a junction can connect to
Min:
Max:
0
0
Specify the number of junctions an edge can connect to
Min:
Max:
0
0
Subtypes in the Network:
Fittings
Hydrants
Tanks
Laterals
Fire laterals
Hydrant laterals
Service laterals
Unknown
Distribmains
Junction subtypes:
Expansion joint
Offset
Plug
Reducer
Riser
Saddle
Sleeve
Tap
Tee
OK
Cancel
Apply

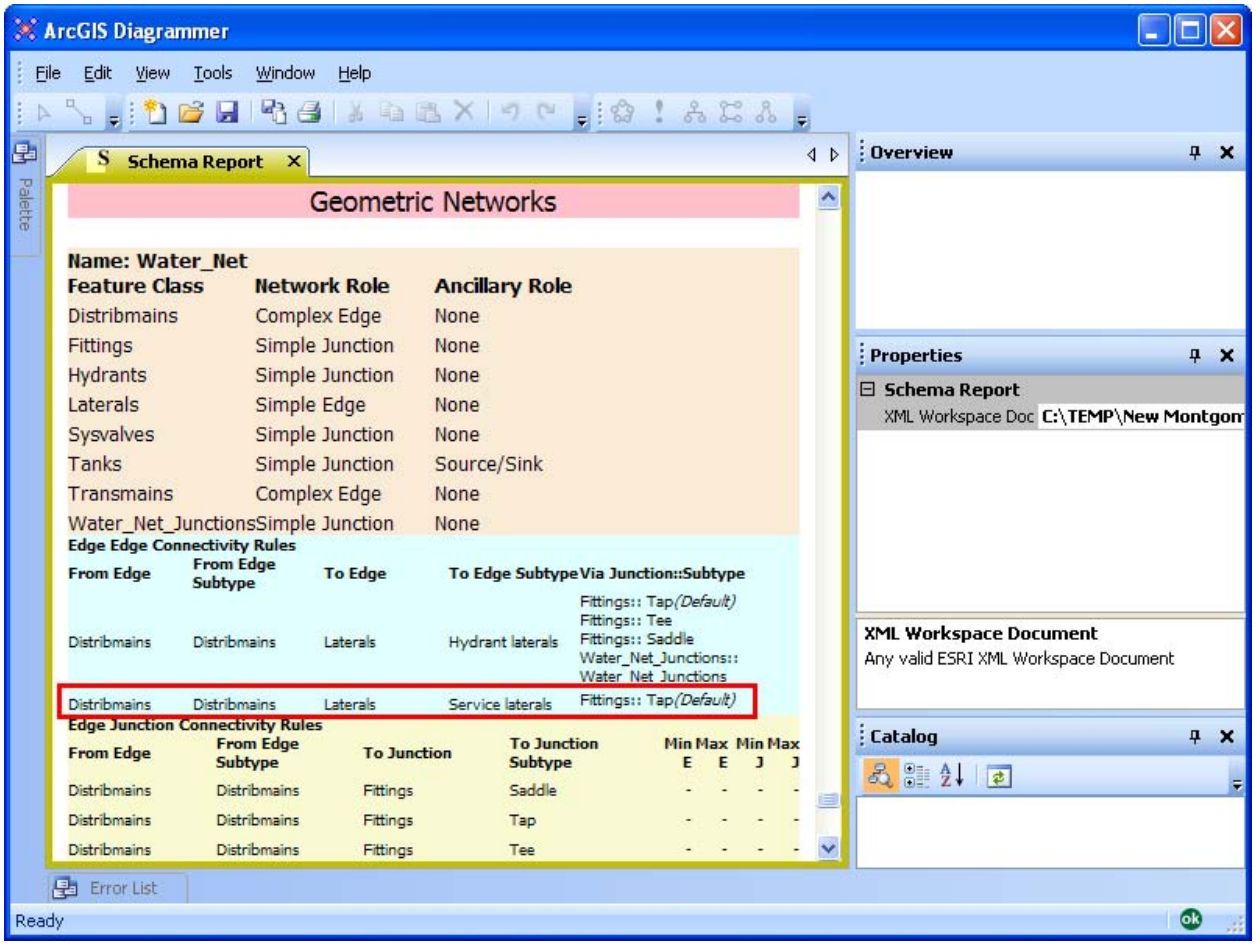

Transmains
Distribmains
Fittings::Tap (Default)
Fittings::Tap (Default)
Fittings::Tee
Fittings::Saddle
Water_Net_Junctions
Service laterals
Hydrant laterals
Distribmains
Laterals

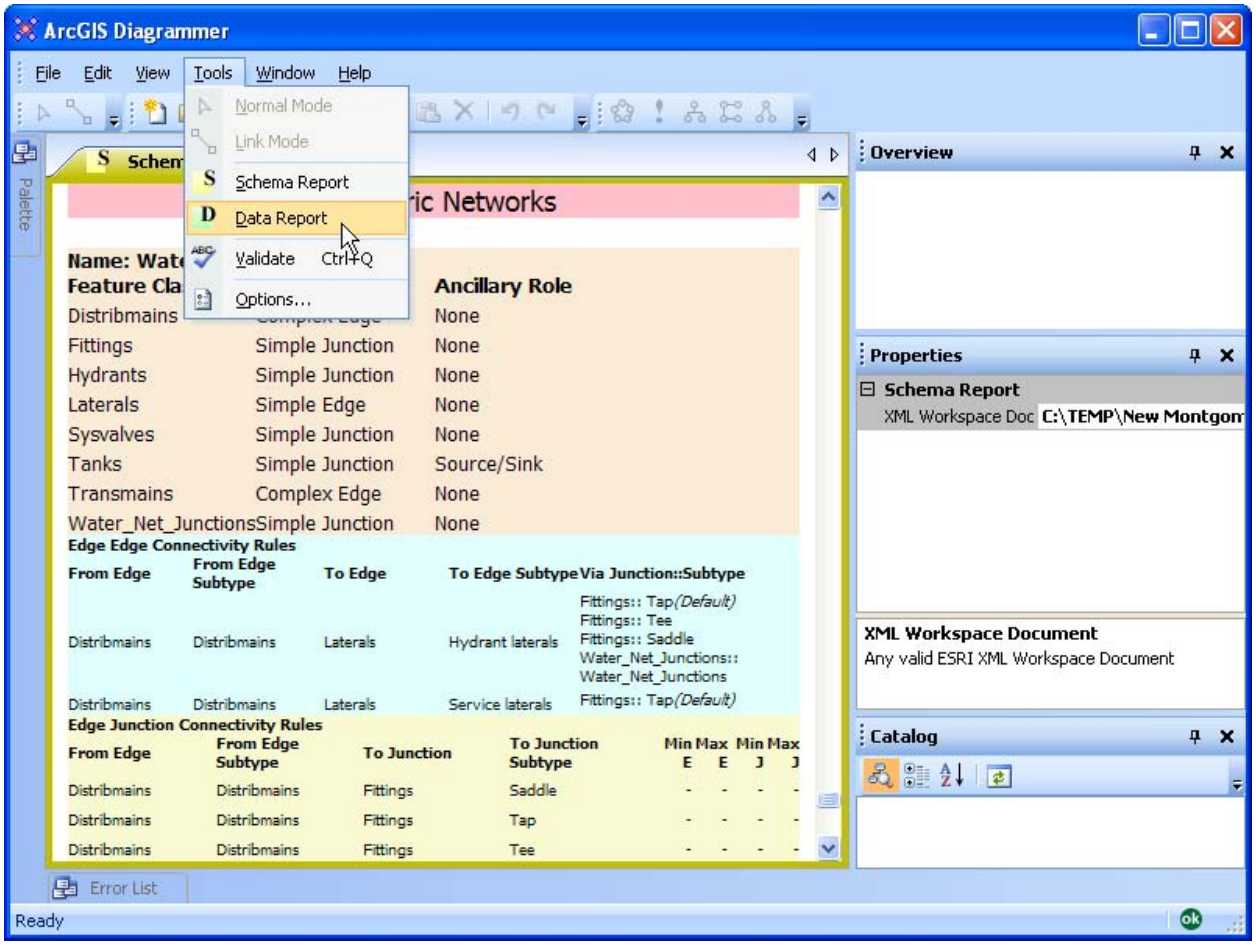

ArcGIS Diagrammer
File
Edit
View
Tools
Window
Help
Normal Mode
Link Mode
Schema Report
Data Report
Validate Ctrl+Q
Options...
Palette
Overview
Properties
Catalog
Error List
Ready

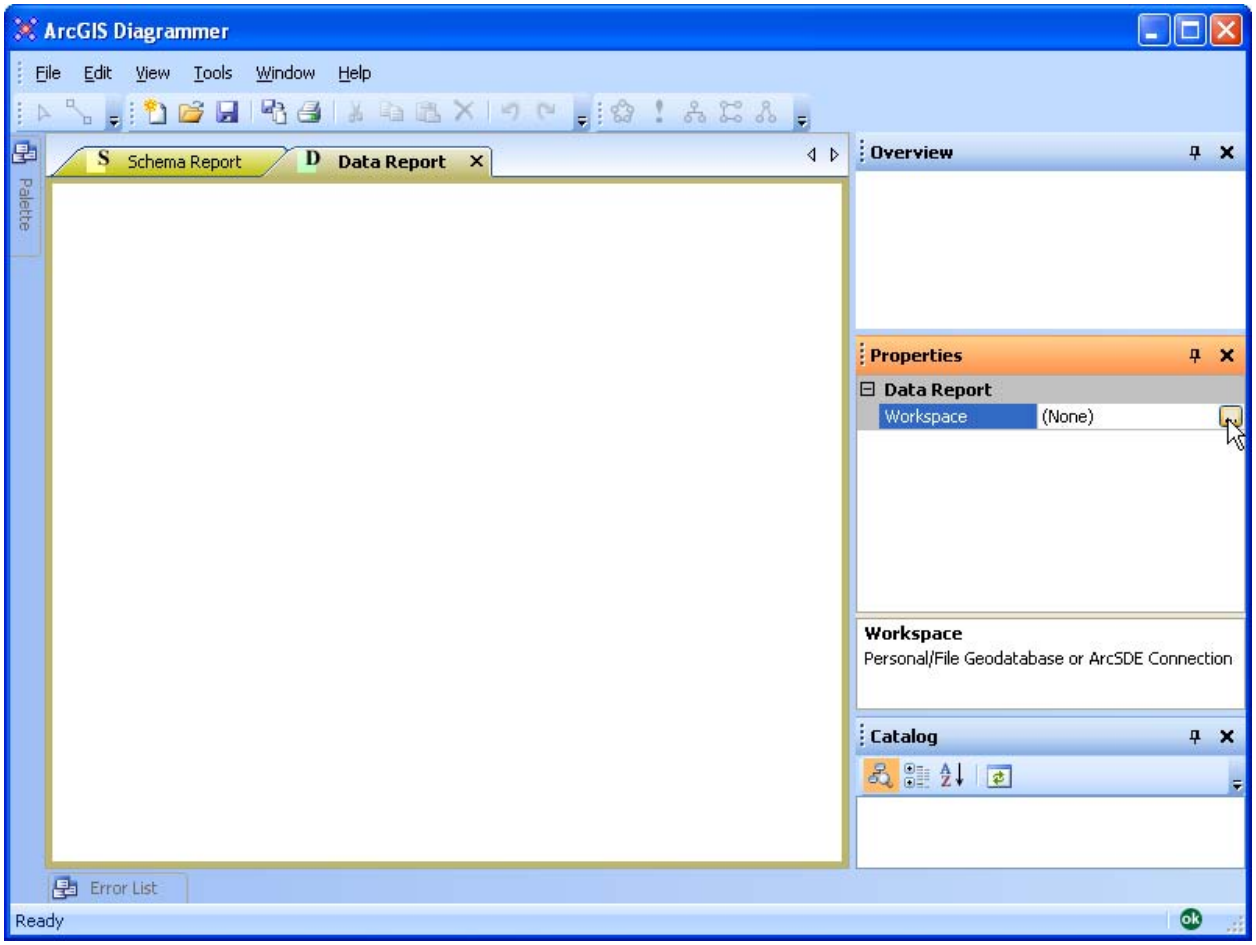

ArcGIS Diagrammer
File
Edit
View
Tools
Window
Help
Palette
Schema Report
Overview
Properties
Schema Report
XML Workspace Doc
XML Workspace Document
Any valid ESRI XML Workspace Document
Catalog
Error List
Ready
ok

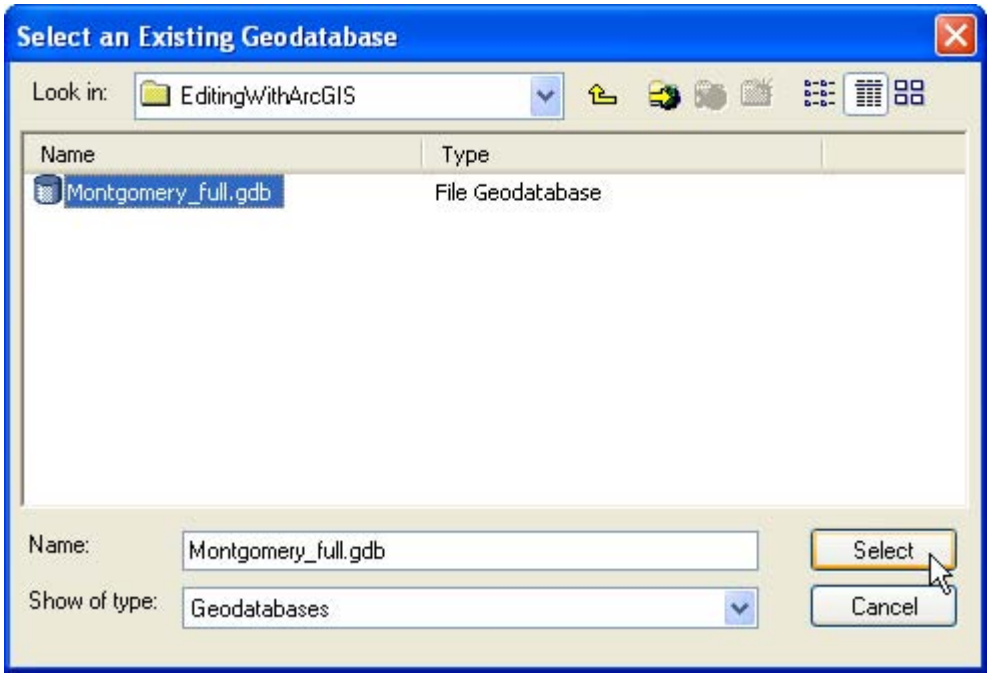

Open XML Workspace Document
Look in:
TEMP
New File Geodatabase.gdb
New Montgomery Schema.gdb
Montgomery.xml
New Montgomery Schema.xml
World Data Model.xml
My Recent Documents
Desktop
My Documents
My Computer
My Network
File name:
New Montgomery Schema.xml
Files of type:
XML Workspace Document (*.xml)
Open
Cancel
Help

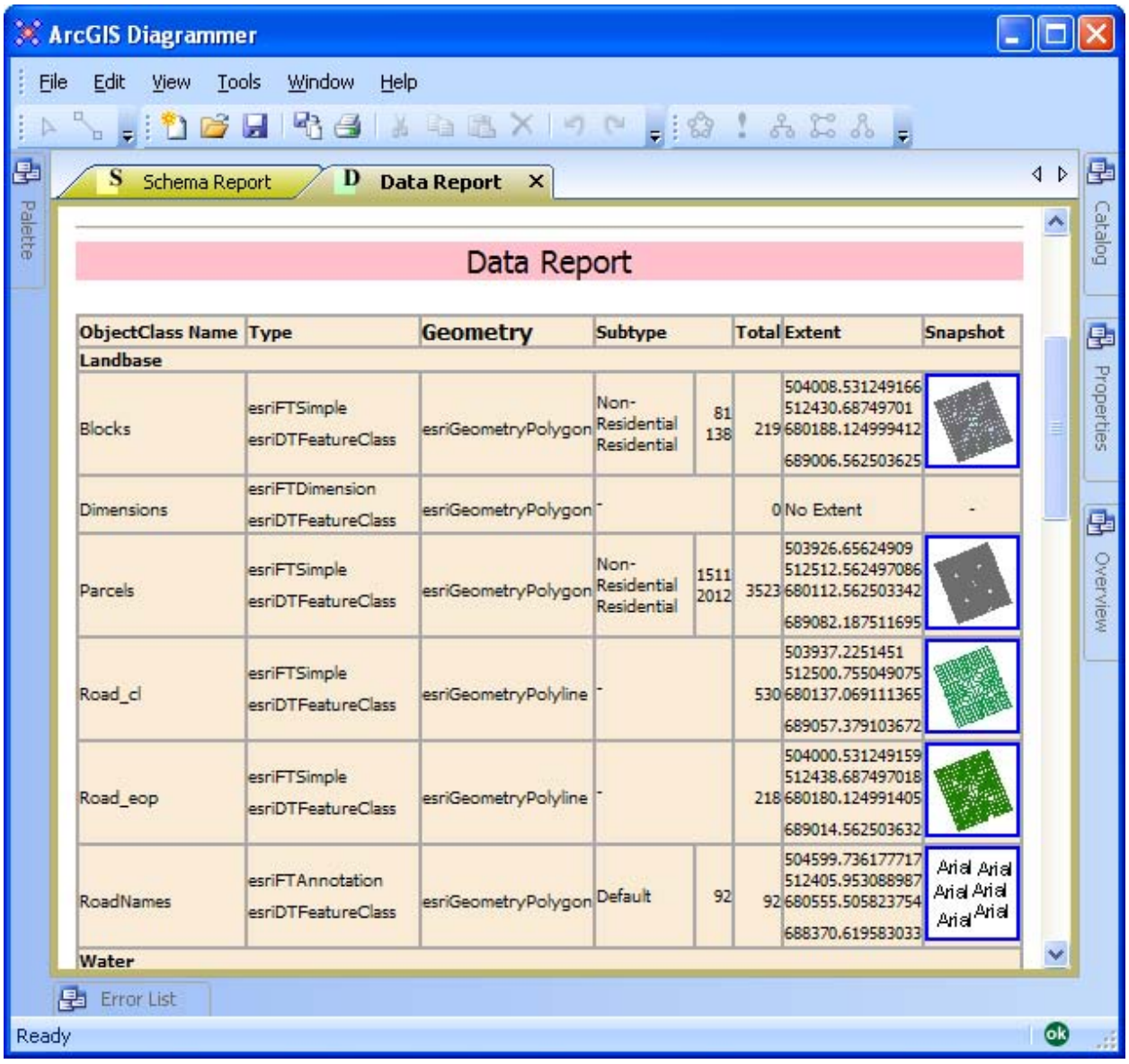

ArcGIS Diagrammer
File Edit View Tools Window Help
Palette
Schema Report
ArcGIS Diagrammer
Schema Creation
Creation Date Wednesday, July 18, 2007
Creator Richie/GUYOT on GUYOT
System Information
Operating System Microsoft Windows NT 5.1.2600 Service Pack 2
.Net Framework 2.0.50727.42
Diagrammer 1.0.0.0
Geodatabase
Workspace Type Personal Geodatabase
Table Of Contents
Domains Listing of Coded Value and Range Domains.
ObjectClasses Listing of Tables and FeatureClasses.
Relationships Listing of Geodatabase Relationships.
Geometry Networks Listing of GeometricNetworks (including rules and weights).
Topologies Listing of Topology Datasets.
Spatial Reference Listing of Spatial References used by FeatureClasses and FeatureDatasets.
Overview
Properties
Schema Report
XML Workspace Doc C:\TEMP\New Montgom
XML Workspace Document
Any valid ESRI XML Workspace Document
Catalog
Error List
Ready


ArcGIS Diagrammer
File Edit View Tools Window Help
Palette
Schema Report
Geometric Networks
Name: Water_Net
Feature Class Network Role Ancillary Role
Distribmains Complex Edge None
Fittings Simple Junction None
Hydrants Simple Junction None
Laterals Simple Edge None
Sysvalves Simple Junction None
Tanks Simple Junction Source/Sink
Transmains Complex Edge None
Water_Net_Junctions Simple Junction None
Edge Edge Connectivity Rules
From Edge
From Edge Subtype
To Edge
To Edge Subtype
Via Junction::Subtype
Distribmains Distribmains Laterals Hydrant laterals
Fittings:: Tap(Default)
Fittings:: Tee
Fittings:: Saddle
Water_Net_Junctions:: Water_Net_Junctions
Distribmains Distribmains Laterals Service laterals Fittings:: Tap(Default)
Edge Junction Connectivity Rules
From Edge
From Edge Subtype
To Junction
To Junction Subtype
Min Max Min Max E E J J
Distribmains Distribmains Fittings Saddle
Distribmains Distribmains Fittings Tap
Distribmains Distribmains Fittings Tee
Overview
Properties
Schema Report
XML Workspace Doc C:\TEMP\New Montgom
XML Workspace Document
Any valid ESRI XML Workspace Document
Catalog
Error List
Ready

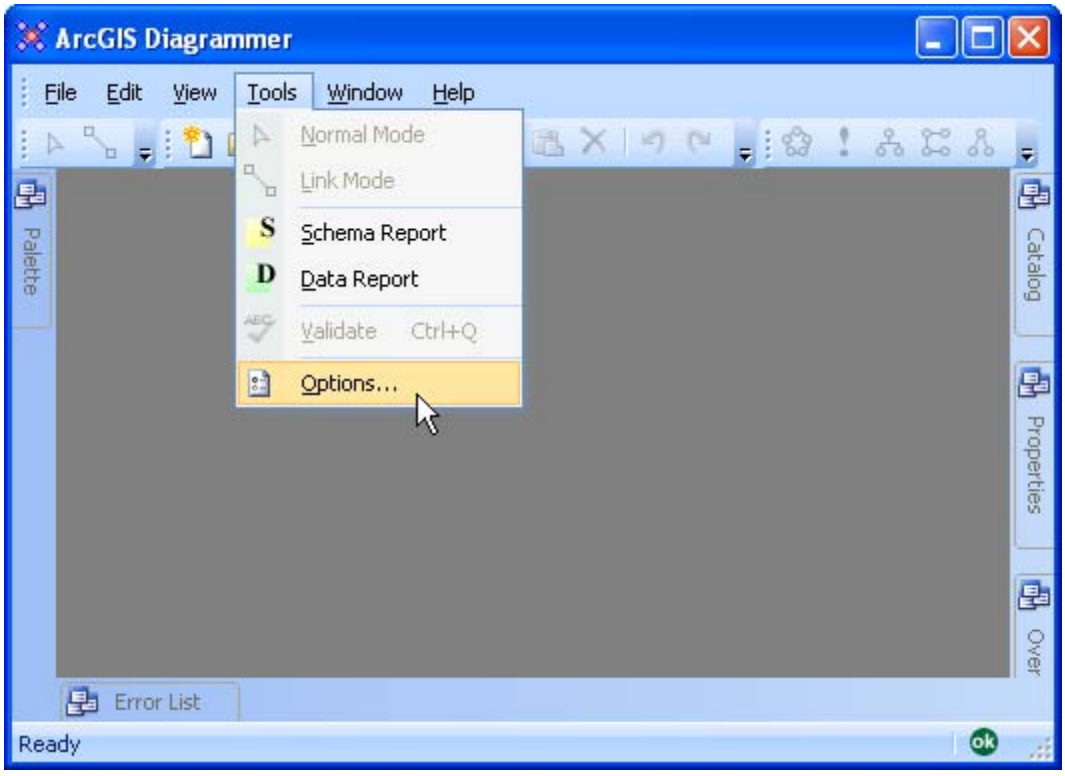

ArcGIS Diagrammer
File
Edit
View
Tools
Window
Help
Normal Mode
Link Mode
Schema Report
Data Report
Validate Ctrl+Q
Options...
Overview
Properties
Schema Report
XML Workspace Doc
C:\TEMP\New Montgom
XML Workspace Document
Any valid ESRI XML Workspace Document
Catalog
Palette
Error List
Ready
Name: Wat
Feature Cla
Ancillary Role
Distribmains None
Fittings Simple Junction None
Hydrants Simple Junction None
Laterals Simple Edge None
Sysvalves Simple Junction None
Tanks Simple Junction Source/Sink
Transmains Complex Edge None
Water_Net_Junctions Simple Junction None
Edge Edge Connectivity Rules
From Edge
From Edge Subtype
To Edge
To Edge Subtype
Via Junction::Subtype
Fittings:: Tap(Default)
Fittings:: Tee
Distribmains Distribmains Laterals Hydrant laterals
Fittings:: Saddle
Water_Net_Junctions::
Water_Net_Junctions
Distribmains Distribmains Laterals Service laterals Fittings:: Tap(Default)
Edge Junction Connectivity Rules
From Edge
From Edge Subtype
To Junction
To Junction Subtype
Min Max Min Max
E E J J
Distribmains Distribmains Fittings Saddle
Distribmains Distribmains Fittings Tap
Distribmains Distribmains Fittings Tee

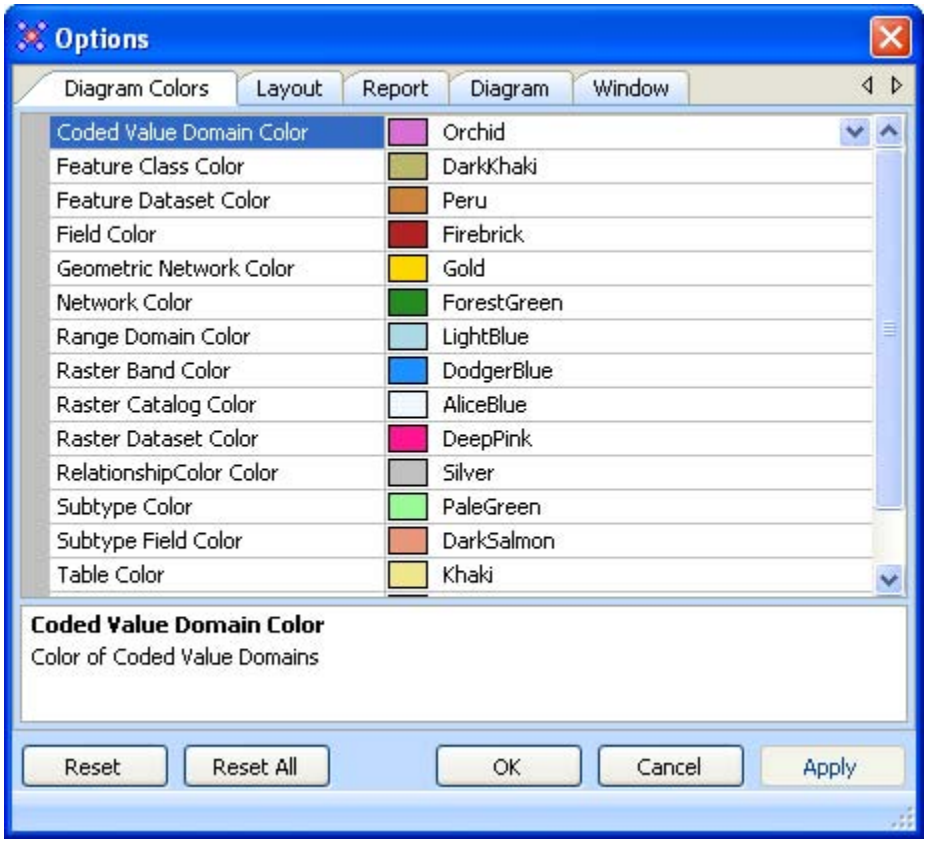

ArcGIS Diagrammer
File Edit View Tools Window Help
Palette
Schema Report
Data Report
Overview
Properties
Data Report
Workspace
(None)
Workspace
Personal/File Geodatabase or ArcSDE Connection
Catalog
Error List
Ready

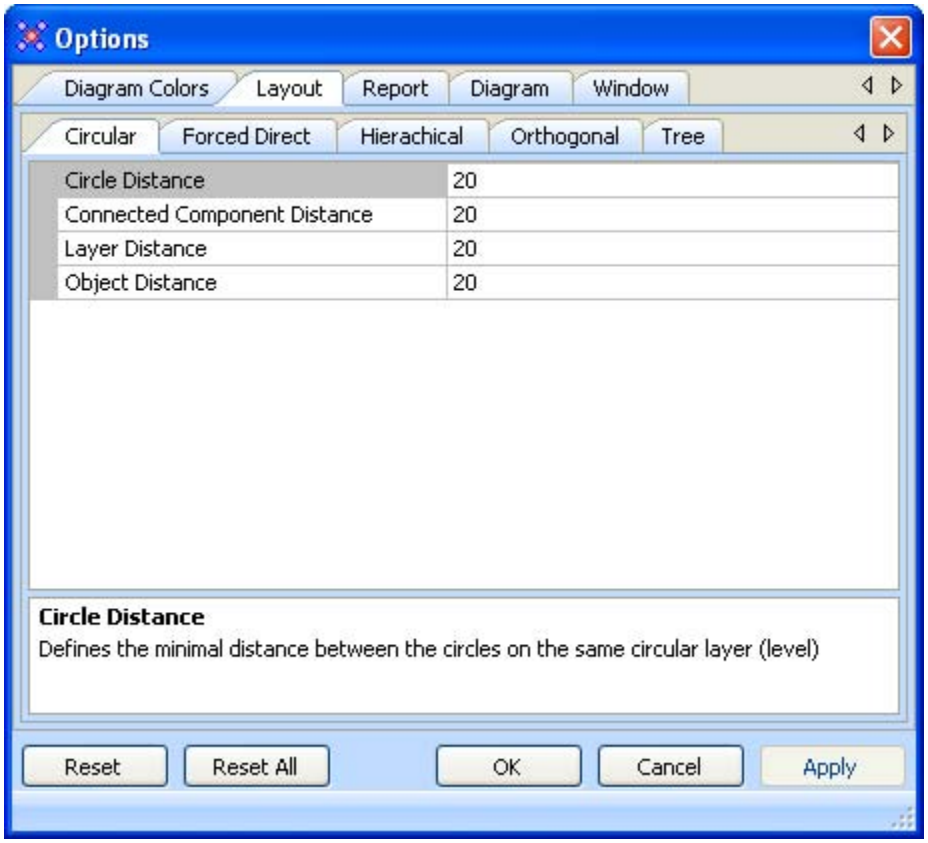

Select an Existing Geodatabase
Look in:
EditingWithArcGIS
Name
Type
Montgomery_full.gdb
File Geodatabase
Name:
Montgomery_full.gdb
Show of type:
Geodatabases
Select
Cancel

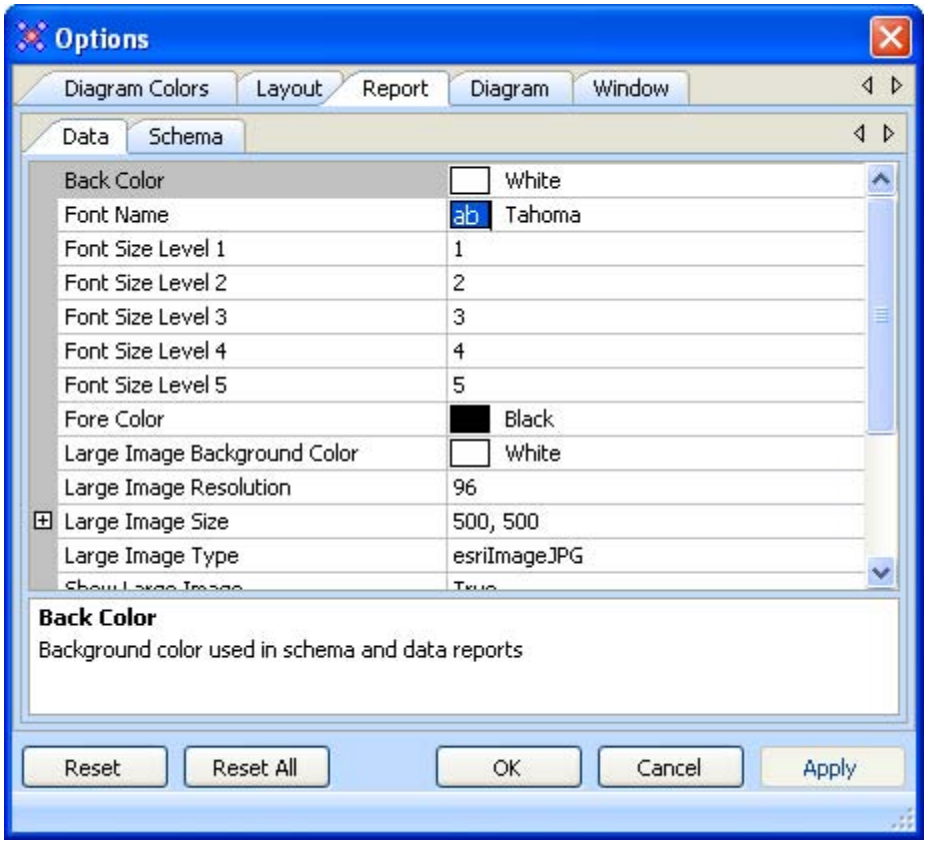

ArcGIS Diagrammer
File Edit View Tools Window Help
Palette
Schema Report
Data Report
Catalog
Properties
Overview
Data Report
ObjectClass Name | Type | Geometry | Subtype | | Total | Extent | Snapshot
Landbase
Blocks | esriFTSimple esriDTFeatureClass | esriGeometryPolygon | Non-Residential Residential | 81 138 | 219 | 504008.531249166 512430.68749701 680188.124999412 689006.562503625
Dimensions | esriFTDimension esriDTFeatureClass | esriGeometryPolygon | - | | 0 | No Extent | -
Parcels | esriFTSimple esriDTFeatureClass | esriGeometryPolygon | Non-Residential Residential | 1511 2012 | 3523 | 503926.65624909 512512.562497086 680112.562503342 689082.187511695
Road_cl | esriFTSimple esriDTFeatureClass | esriGeometryPolyline | - | | 530 | 503937.2251451 512500.755049075 680137.069111365 689057.379103672
Road_eop | esriFTSimple esriDTFeatureClass | esriGeometryPolyline | - | | 218 | 504000.531249159 512438.687497018 680180.124991405 689014.562503632
RoadNames | esriFTAnnotation esriDTFeatureClass | esriGeometryPolygon | Default | 92 | 92 | 504599.736177717 512405.953088987 680555.505823754 688370.619583033
Water
Error List
Ready
ok

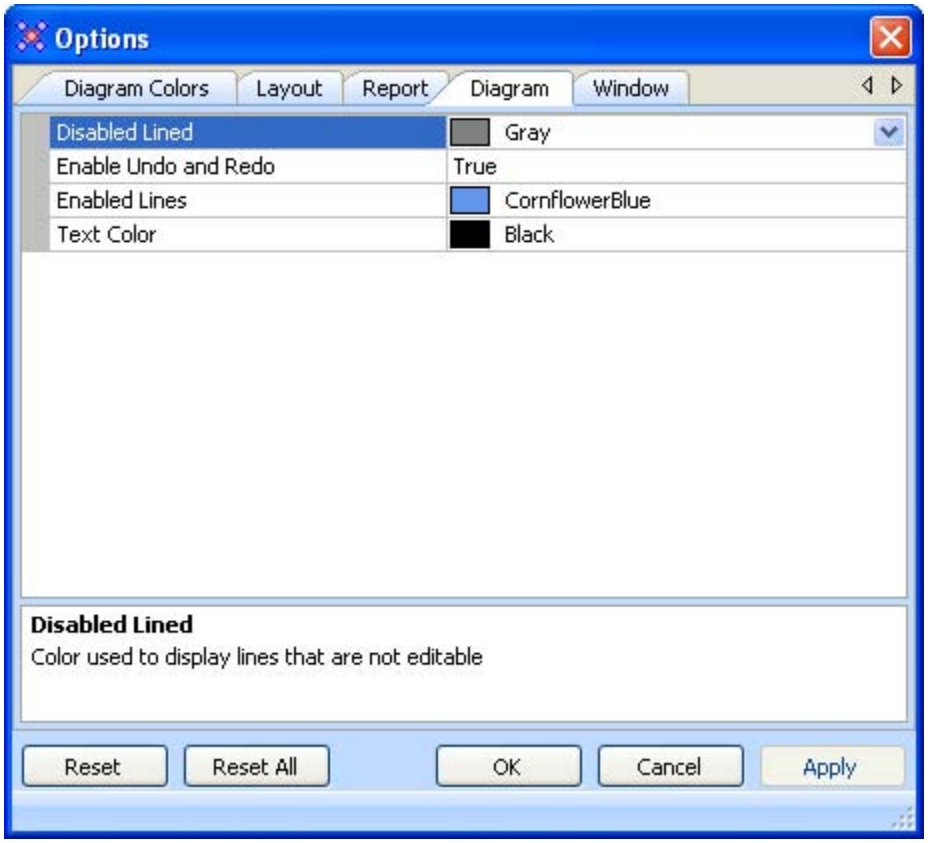
ARCGIS DIAGRAMMER OPTIONS

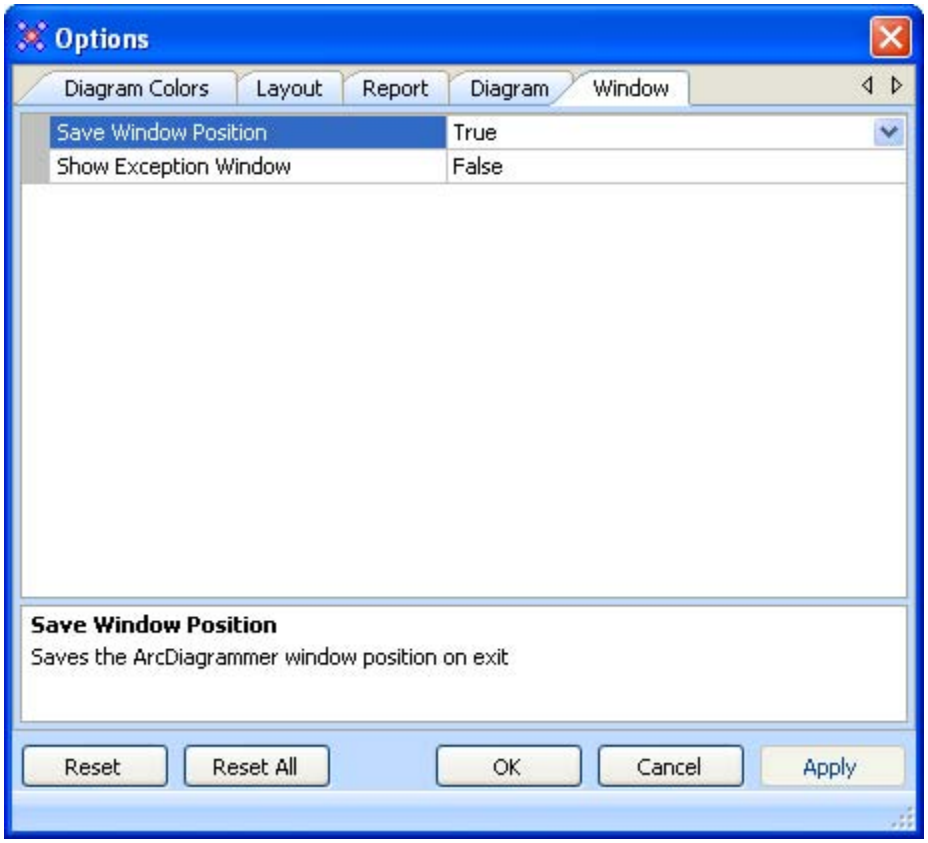




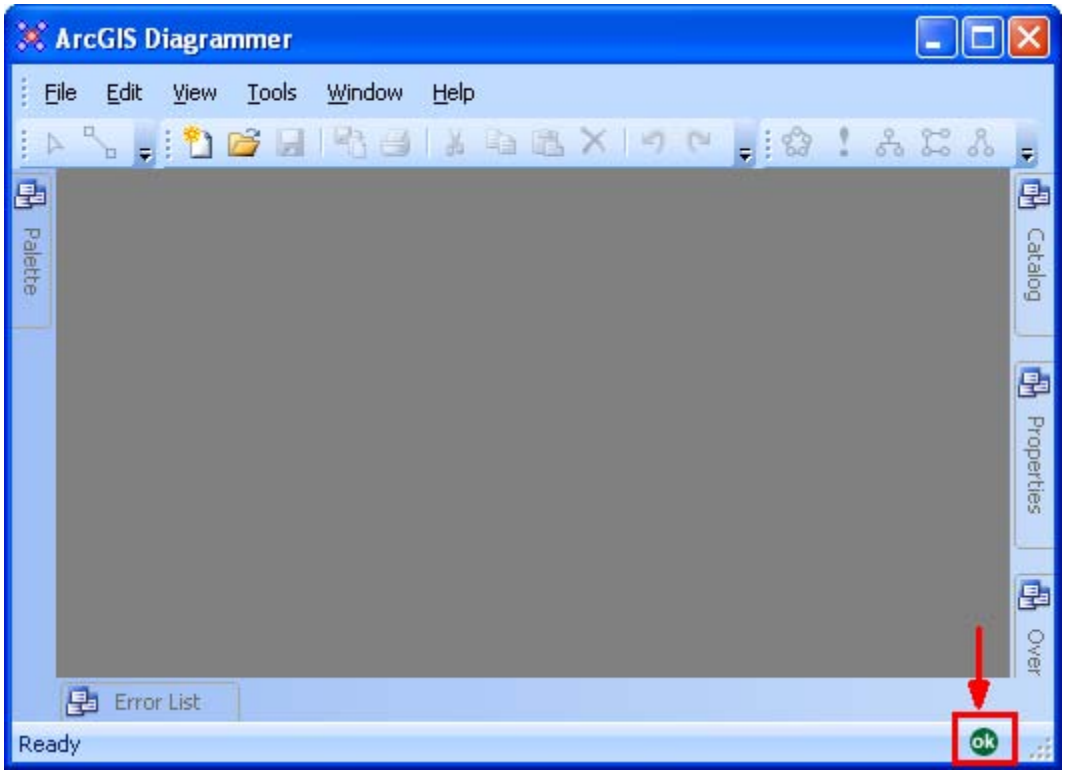

Options
Diagram Colors
Layout
Report
Diagram
Window
Circular
Forced Direct
Hierachical
Orthogonal
Tree
Circle Distance
20
Connected Component Distance
20
Layer Distance
20
Object Distance
20
Circle Distance
Defines the minimal distance between the circles on the same circular layer (level)
Reset
Reset All
OK
Cancel
Apply

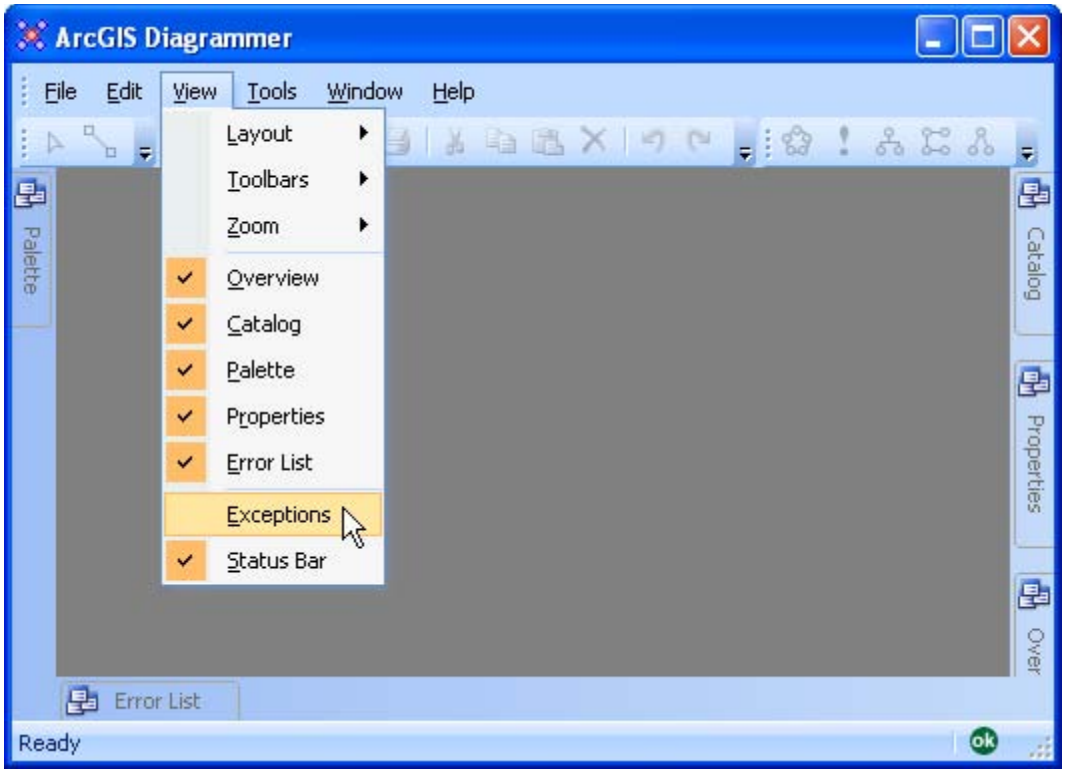

Options
Diagram Colors
Layout
Report
Diagram
Window
Data
Schema
Back Color
White
Font Name
Tahoma
Font Size Level 1
1
Font Size Level 2
2
Font Size Level 3
3
Font Size Level 4
4
Font Size Level 5
5
Fore Color
Black
Large Image Background Color
White
Large Image Resolution
96
Large Image Size
500, 500
Large Image Type
esriImageJPG
Back Color
Background color used in schema and data reports
Reset
Reset All
OK
Cancel
Apply

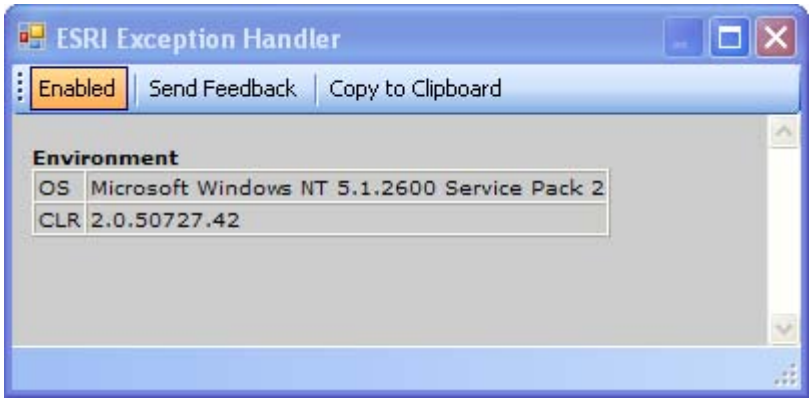

Options
Diagram Colors
Layout
Report
Diagram
Window
Disabled Lined
Gray
Enable Undo and Redo
True
Enabled Lines
CornflowerBlue
Text Color
Black
Disabled Lined
Color used to display lines that are not editable
Reset
Reset All
OK
Cancel
Apply


Options
Diagram Colors
Layout
Report
Diagram
Window
Save Window Position
True
Show Exception Window
False
Save Window Position
Saves the ArcDiagrammer window position on exit
Reset
Reset All
OK
Cancel
Apply

EXCEPTIONS


ArcGIS Diagrammer
File
Edit
View
Tools
Window
Help
Palette
Catalog
Properties
Over
Error List
Ready
ok


ArcGIS Diagrammer
File
Edit
View
Tools
Window
Help
Layout
Toolbars
Zoom
Overview
Catalog
Palette
Properties
Error List
Exceptions
Status Bar
Palette
Catalog
Properties
Over
Error List
Ready
ok


ESRI Exception Handler
Enabled
Send Feedback
Copy to Clipboard
Environment
OS
Microsoft Windows NT 5.1.2600 Service Pack 2
CLR
2.0.50727.42

FAQ

WHAT ARE THE LIMITATION?

WHAT IS NOT SUPPORTED BY ARCGIS DIAGRAMMER?

WHY CAN'T I EXPORT OR IMPORT XML WORKSPACE DOCUMENTS IN ARCCATALOG?

You need either a *ArcEditor* or *ArcInfo* license.

REFERENCES

Geodatabase XML
http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?id=2016&pid=2009&topicname=Geodatabase_XML
ESRI
November 9, 2006

XML Schema of the Geodatabase
http://downloads.esri.com/support/whitepapers/ao_/XML_Schema.pdf
ESRI
February, 2004

FEEDBACK

ENHANCEMENTS OR BUGS?

Please send your comments and/or bugs to us using the following link.
http://groups.google.com/group/arcgis-diagrammer

LEGAL STUFF

THE LICENSE AGREEMENT

Reservation of Ownership and Grant of Rights

This is a license agreement (Agreement) and not an agreement for sale. ESRI and its licensor(s) (hereinafter collectively referred to as "Author") retains exclusive rights, title, and ownership of the copy of the Geochat sample code (hereinafter referred to as "Sample Code") licensed under this Agreement and grants you (hereinafter referred to as "Developer") a personal, nonexclusive, nontransferable, worldwide, royalty-free license to use, copy, edit, modify, merge, incorporate, and/or prepare derivative work(s) of the Sample Code with any new scripting code and/or data, and thereafter the copyright license to demonstrate, reproduce, redistribute, and publicly display the derivative work(s) embedding the Sample Code to Developer's clients for the client's own internal use. All rights not specifically granted in this Agreement are reserved to the Author. In the event Developer transfers a copy of the unmodified Sample Code to another party, Developer expressly agrees to always include this Agreement file with all copies of the unmodified Sample Code.

Copyright

The Sample Code is owned by the Author and is protected by United States copyright laws and applicable international laws, treaties, and/or conventions. The following Author attribution information must be given in comment form in the Sample Code, in a "Help-About" dialog box, in a supporting digital "Read Me" file, and/or provided in digital form for on-line documentation, and at the beginning or end acknowledgment page of any hard-copy documentation:

“Copyright © 2007 ESRI. All rights reserved.

Portions of this work are:
Copyright © 2007 Divelements. All rights reserved.
Copyright © 2007 Crainiate Software. All rights reserved.”

The parties mutually agree that Developer may make an application for copyright registration in the derivative work(s) prepared by Developer based on the preexisting Sample Code so long as Developer identifies and discloses all respective ownership rights in preexisting material(s) that comprise Developer's derivative work(s) in section 6, Derivative or Compilation on Form TX and/or any other applicable form(s) of the United States Copyright Office or the applicable forms in other legal jurisdictions.

Disclaimer of Warranty

Developer expressly acknowledges that the Sample Code is unsupported code and that no technical support shall be provided to Developer by the Author.

THE SAMPLE CODE ARE PROVIDED "AS-IS," WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, BY STATUTE OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. THE AUTHOR DOES NOT WARRANT THAT THE OPERATION OF THE SAMPLE CODE SHALL BE UNINTERRUPTED OR ERROR FREE. DEVELOPER BEARS ALL RISK AS TO THE QUALITY AND PERFORMANCE OF THE SAMPLE CODE.

Exclusive Remedy and Limitation of Liability

The parties expressly agree that the Author's liability hereunder for any damages to Developer, regardless of the form of action, shall not exceed the total amount paid for the license granted herein.

IN NO EVENT SHALL THE AUTHOR BE LIABLE TO DEVELOPER FOR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, LOST PROFITS, LOST SALES OR BUSINESS EXPENDITURES, INVESTMENTS, OR COMMITMENTS IN CONNECTION WITH ANY BUSINESS, LOSS OF ANY GOODWILL, OR FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT OR USE OF THE SAMPLE CODE, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY, AND WHETHER OR NOT THE AUTHOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY.

Governing Law

This Agreement is governed by the laws of the United States of America and the state laws of California without reference to conflict of laws principles.

Entire Agreement

The parties agree that this Agreement constitutes the sole and entire agreement of the parties as to the matter set forth herein and supersedes any previous agreements, understandings, and arrangements between the parties relating hereto when Developer assents to be bound by these terms and conditions by clicking the "I Accept" button below.