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2. I need to an insert on my map to zoom in to an area that is too hard to see otherwise. How can I do this?
3. Sometimes when I open a project created by someone else, I get an error indicating the printer cannot be found and that a Default Printer will be used instead. What is causing this?
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Tabular data

1. Sometimes the data tables I'm using work just fine when I join to shape files and other times some or all of my columns just have <null> in them. What is causing this and how can I fix it?
2. Can I make changes to the data in the table?
3. I need to connect to a Query that I created in Access. When I open the MDB file using Add Data, I can only see the tables in Access, but not the Queries. How can I connect to the Queries?

4. I need to get a frequency (count) of how many times a value appears in my table. Can I do this in ArcMap?
5. I need to generate statistics from the numeric values in my table. Can I do this in ArcMap?
6. I have a table of latitude and longitude coordinates that I'd like to add to my map. When I try to display them using Display XY, nothing shows up on my map. What am I doing wrong?

Answers To ArcMap FAQ

General

1. I don't know where to begin. Are there some existing maps I can use as a base for my project?

There are several existing maps stored on the GIS server under M:\GISDATA\ArcMapTemplates.

2. Where can I find data for my maps?

Many data layers are available on the GIS server. The data is categorized in broad categories into a series of folders. The most commonly used folders:

- AerialPhoto – black and white aerial photography from the entire state of Missouri, by county.
- BaseLayers – ArcGIS Layer files – predefined layers combined with symbology. There are subfolders within this folder for census, distbnd (districts and boundaries), facility, natural, trans
- Census2000 - census tracts, blocks, block groups and tabular data from the 2000 census.
- District_bounds – political boundaries, district boundaries, city limits, zip codes etc.
- Environ –environmental exposures, such as landfills, hazardous waste sites, pesticide dealers etc.
- Facility – hospitals, daycares, nursing homes, trauma centers, schools, etc
- Natural – basic geology, fault lines, rivers, streams, lakes, land use
- SurroundStates – some really basic information for the United States
- Trans – transportation: airports, railroads, highways, local streets

3. How do I get access to the GIS data library?

If you work for DHSS in Jefferson City, complete an ASAP request to get connected to the GIS data library. When complete, you will have a new folder, M:\GISDATA.

4. I don't work in Jefferson City, how can I get the data updates as they become available?

There is a GIS file transfer site (FTP) available. (*see existing document M:\GISDATA\GISdocumentation\ftp.doc*)

5. I have a map that has a red exclamation (!) next to some of the layer, and the layer doesn't draw. What is this and can I fix it?

The ArcMap MXD file cannot find the file in the directory specified. Several things can cause the data source path to be lost, but the most common are: 1) the file has been moved or renamed since the MXD file was last opened; 2) the user does not have access to the directory where the file is stored.

In order to restore a broken link, open the layer's Properties, and select the Source tab. Click on the Set Data Source button. Navigate to the location of the file and click Add. This is also known as repairing a layer.

6. What are relative path names, and when would I use them?

By default, all data layers added into ArcMap are stored with the full path of the layer (i.e. H:\GIS\myProject\myShape.shp). If you need to share your project with another user, and that user decides to put the project folder and all the data files on another drive (for instance C:\), the ArcMap (MXD) file when opened will show a series of red exclamation points. This indicates that the map cannot find the source (path) for that data layer. The MXD file is still looking for data that is stored on the H:\ drive.

Relative paths store the location of the data source relative to the location of the map document. So instead of looking in the H:\GIS\myProject folder, the MXD file simply looks for data 'within the same folder as the MXD file', regardless of what the folder name might be. Files can also be stored in subfolders under the same project folder.

If you change your map to store the paths of the data sources to relative path names, the project no longer looks for the data using the entire path (starting the with drive letter). The user who is CREATING the file, not the user who has received the file, must make the change from full to relative paths. If the map also has data layers that do not meet the criteria (falling within the folders or subfolders of the MXD file location), those data layers continue to be stored with their full path names.

7. What is a spatial bookmark?

Spatial bookmarks store a geographic location, so you can refer to it at a later time. For example, you may want to set a spatial bookmark for the metropolitan area around St. Louis. You can then pan and zoom and still return back to the same area. This is an excellent way to make sure your layout always has the exact extent for each printing.

To set a spatial bookmark, first position your window you wish to save. Then select View > Bookmarks > Create. Be sure to give your bookmark a name that you will be able to remember later. To refer back to the same location again, select View > Bookmarks. A list of all the bookmarks you have created will be given, select the bookmark you wish to return to. The screen will be positioned to the same location as when it was created.

8. My MXD file is corrupted and won't open anymore. Can it be fixed?

Yes, but it will require some help from the GIS administrative staff. There is a utility called MXD Doctor that is provided as part of the sample scripts. These sample scripts may or may not have been installed as part of your ArcGIS installation. If not already installed on your computer, the installation can be done by a GIS administrative staff member. Once the MXD Doctor is installed, you will be able to restore a corrupt MXD file.

A note on prevention: The most common source of a corrupt MXD file is the thumbnail image. Thumbnail sketches are snapshots of your MXD file that are automatically created every time you save your ArcMap projects. Thumbnail sketches allow you to preview your MXD file in ArcCatalog, and for this they are handy. However, the thumbnail sketch is the element most often corrupted in a broken MXD file. The easiest solution is to turn off the thumbnail image.

Under File > select Map Properties. Uncheck the box 'Save thumbnail image with map'. Save your project. This must be done for all your MXD files, but remains set for each from one session to the next. Incidentally, this makes saving your project run much faster!

9. How do I set my map so the sizes of my labels and marker (point) symbols look right at the final page size I am using?

By default, label and marker symbols stay the same size as you zoom in and out, independent of scale. This results in labels that are frequently too small or too large. This is especially apparent for large format prints.

In order to set a reference scale, first zoom in until you have found a scale that you find satisfactory. Right click the data frame, and choose Set Reference Scale.

(You can clear a reference once it is set but right clicking the data frame and choosing Clear Reference Scale.)

10. How can I print out the table of attributes?

You will be able to print out the attributes using a report. Under Tools > Reports choose Create a Report. (The Crystal Reports Wizard is recommended only if you intend to manipulate the resulting report using Crystal Reports). If you have any elements selected, you will have the option to include only the selected set in the report.

Labels

1. I don't like how my labels are placed. Some are covering up the feature they are labeling. How can I fix this?

There are multiple places where you can specify priorities of features and their labels, as well as setting priorities between other layers and their labels.

Under Layer Properties, choose the Labels tab. Toward the bottom, choose Label Placement Options. Within this dialog, choose the Conflict Detection tab. You can set both the Label Weight and the Feature Weight. Labels and features are weighted as High, Medium or Low. The higher the weight, the more likely the label is to be placed, and the less likely the feature is to be overlapped. You can also determine whether or not you will allow overlapping labels. This will increase the number of features that are labeled, but will create a lot of clutter on the screen.

To review all the labels and features for your map, you can also look at Conflict Detection for the whole data frame. Right click on the data frame, and choose Properties. Select the Labels tab. You can use the arrows on the right to change the order of importance for each layer. Click the Conflict Detection Rules button to review the feature and label weights for all the layers.

2. I want to be able to move the labels myself. How can I do this?

Labels can be converted to annotation. Annotation is a simple graphic element that can then be moved anywhere on the map. Be aware that converting labels to annotation severs the connection with the field generating the label, so any changes in the attributes will not be reflected in the annotation. The annotation will continue to be associated with the layer's on/off properties.

First make sure you are zoomed in to a scale that is appropriate for the feature you are labeling. Once labels are converted to annotation, they are locked to the size

they were at the point they were generated. Right click on the layer, and select Convert Label to Annotation.

Any labels that will not fit on your map at the chosen scale will be placed in an Overflow Window. Select individual items from the overflow list to zoom to, pan, or place the remaining annotation.

3. I only want my labels to turn on when I am zoomed in. Where can I set this?

The scale factor for labels is automatically set to the scale factor of the layer. If you want to define the label scale factor separately from the features they are labeling, go to Layer Properties, select the Labels tab, and choose Scale Range, found at the bottom of the dialog. You can set both the minimum and maximum scale.

4. I'm using a map with Missouri highways on it, but there are "V"s behind all the highway numbers. How can I fix this?

The shields for the Missouri highways are provided by the Missouri Department of Transportation. The shields are based on a font DDVMO14B.TTF. You must have this font already loaded on your computer before opening the ArcMap file.

See M:\GISDATA\GISdocumentation\Missouri Highway Shield Symbol.doc

5. I want to use different size labels within a single layer. How can I do this?

You can create separate labels for features by defining label classes. Criteria can be set for each class using an SQL query. Under the Layer Properties > select the Labels tab. Change the method of labeling from 'Label all features the same way' to 'Define classes of feature and label each class differently'. This activates additional options in the dialog.

You must create a class for each different label by first adding a new class with the Add button. The user creates a name for each class. After the class name is assigned, use the 'SQL Query' button to define the specific criteria for the class. (This SQL Query dialog works the same as all other query dialogs within ArcMap.)

There will be a class designated as 'Default', which you may want to turn off by un-checking the box 'Label features in this class' to avoid multiple labels for each feature.

Symbology

1. I don't see any symbols in the Symbology Selector. Are there more symbols that I can pick from?

Yes. The symbols you see are all part of the default ESRI symbol set. Additional symbols can be found by selecting 'More Symbols' while in any symbol selector dialog. A drop down list will appear, with all currently loaded symbol sets listed at the top, designated with a check mark. Choose additional symbol sets from the list to add them. Additional symbols will appear at the end of the previously loaded symbols, so you must scroll down to see them.

2. What is a layer file and how does it differ from a shape file, coverage or geodatabase?

The generic term layer is used to mean any geographic file. In addition, ArcView allows for the creation of a *.lyr file, also called a layer file. These *.lyr files store symbology, definition queries, and label settings in addition to the standard data source paths. This means that when you load an *.lyr file, the symbology will already be set. Once you load a *.lyr file, you can still make changes to the symbology from within ArcMap; this won't change the *.lyr file on the server.

Several *.lyr files exist on the GIS server under M:\GISDATA\BaseLayers. There are subfolders within this folder for census, distbnd (districts and boundaries), facility, natural and trans.

3. I have joined my table to a county layer. I have many values in my table I want to show, all based on county boundaries. How is the best way to do this?

You must create copies of the county layer, and use a different field from the join table for the symbology of each copy. First, load the county layer using the Add Data button. Then join the table to this county file, either by right clicking on the layer and selecting 'Joins and relates' or opening Layer Properties and selecting the Joins & Relates tab.

This will be your base or starting file. Right click on the layer, and click Copy. Then go up to the top of the list of layer to the Data Frame name and right click on Paste Layer. This will create a new copy of the county layer. Open the Layer Properties for this newly added layer, and change the symbology using the first field from the join table. Under the General tab (still in Layer Properties) also change the Layer Name from 'county' to something more descriptive.

Go back to the Data Frame name, right click and choose 'Paste Layer' again. ArcMap will remember the layer from the previous Copy/Paste and paste the county layer again.

Continue to change the field used and the Layer Name as needed.

4. I have quantitative (numeric) data, and I want to use the same classification breaks for a whole series of maps. Can I copy the symbology from one layer to the next?

Yes you can, but be aware that if you have much variation in your values that some classes may not actually contain any values for that particular layer. Open the Layer Properties, select the Symbology tab. Click 'Import' located to the right of the current symbology. Choose 'Import symbology definition from another layer in the map or from a layer file'. Make sure the layer you want to import from is listed in the Layer box. You have the option to import the complete symbology definition, just the symbols, or just the classification.

When using the same class breaks for quantitative data, use the 'Just the symbols' option. You will be prompted for which field to use.

The 'Just the symbols' option is not always enabled. It is only enabled when the following two conditions are met:

1. The source symbology and the target symbology are of the same type (e.g both are Unique Values symbology, or both are Graduated Colors Symbology).
2. The source and target symbology have the same number of classes. You can think of a class as the same as a symbol (a class actually contains a symbol along with other things like a value and a label).

How 'Just the symbols' works if you are working with Unique Values symbology :

ArcMap looks at each value in the list of values in the target layer, and looks for a match in the source symbology. If it finds a match, that symbol is imported. If it does not find a match, that class stays intact in the target layer.

How 'Just the symbols' works if you are working with Graduated Color (or Graduated symbol) symbology:

ArcMap simply runs through all of the classes and imports each symbol from the corresponding class in the source symbology. Matching is based simply on the order of the classes.

5. How can I define my own colors?

When you open the color palette, select More Colors, located at the bottom. Use the slider bars to adjust the color.

Layout

1. I need to create a PDF of my map. How can I do this?

Under File > select Export Map. You have the option for several types of files, one of which is PDF. The PDF will contain only the contents of your view, so make sure you are in Layout view if you wish to print the title, legend, logo etc.

2. I need to an insert on my map to zoom in to an area that is too hard to see otherwise. How can I do this?

You can create a second data frame to act as an insert to your main map. Each MXD file starts with one data frame, called Layers. You can create additional data frames under Insert > Data Frame. The new data frame can contain the exact same layers as the original frame, or you may choose to add or remove certain layers for the insert. You can either copy the layers from the original data frame, or add layers to the new data frame using Add Data. To copy layers from data frame to another, right-click on the layer and select Copy. Right-click on the new data frame and select Paste Layer.

Once you have the new data frame created, switch over to Layout View. You will need to resize each data frame on your page to fit without overlapping. You can do this by clicking on each frame and resizing using the resize handles.

3. Sometimes when I open a project created by someone else, I get an error indicating the printer cannot be found and that a Default Printer will be used instead. What is causing this?

The map was created using a specific printer to which you do not have access. If you know you're sharing a map document with colleagues, you can make the map page size independent of the system printer. Under File > Page Set up, uncheck the box for 'Same as Printer'. This will change the map document to be independent of the printer set up. The map originator must make this change; if you make this change as the recipient, it is already too late.

If you give a map document that's dependent on your printer setup to someone who doesn't have that printer, they'll get a warning message when they open the map. The map will then rescale to fit their default printer size and page orientation—usually 8.5x11 inches and portrait orientation. The result may differ considerably from the map you designed. If you make the page size independent of the printer and set an appropriate page size, you can prevent this problem.

4. I have a whole series of maps that I am making that all need different titles. Can I do this automatically?

Unfortunately, no. In order to keep all the titles you use handy, place all your titles outside the page, and copy them into position as you need them.

Tabular data

1. Sometimes the data tables I'm using work just fine when I join to shape files and other times some or all of my columns just have <null> in them. What is causing this and how can I fix it?

The format of the file you are joining, both the file name and the fields within it, must conform to a rather strict standard:

- Don't use any punctuation (e.g. - & % # /). Exception: You can use an _ (underscore)
- Don't start with fields with a number.
- Remove all spaces from file and field names.
- Keep your field names as brief as possible.

If your file name or field name do not conform to this standard, the columns will appear with all <null> values.

2. Can I make changes to the data in the table?

Yes, you must start an Edit session through the Editor toolbar. This toolbar can be activated under View > Toolbars > Editor, or by selecting the Editor Toolbar icon, found on the Main menu.

3. I need to connect to a Query that I created in Access. When I open the MDB file using Add Data, I can only see the tables in Access, but not the Queries. How can I connect to the Queries?

Queries cannot be viewed through this type of connection. Instead, you must use an OLE DB connection.

You can establish an OLE DB connection from within the Add Data dialog. When you click the down arrow at the top of this dialog, you will see a list of the drives you are connected to, such as M:\GISDATA. Beneath the drive letters is an option for Database Connections.

From the Database Connections dialog, select 'Add OLE DB Connection'. You will get a list of all the connection types available. Choose 'Microsoft Jet 4.0 OLE DB Provider'. Click Next. Select the desired database (use the ellipse ... to browse). Click the 'Test Connection' to test. Provided the connection tested properly, you will be returned to the first Database Connections dialog. The connection will appear as 'OLE DB Connection.odb'. This is a default name assignment, you should click on this slowly to activate the rename functionality, and change the name to something that can be remembered.

Now double-click on the *.odb file. The tables and queries should be available for use in ArcMap.

Database connections can be managed from within ArcCatalog. Once a connection is established, it will be available for future projects as an option under 'Database Connections'; you won't need to create new connection definitions every time.

4. I need to get a frequency (count) of how many times a value appears in my table. Can I do this in ArcMap?

Yes, this functionality is part of the summarize function. When your field is defined as a Text field, the returned summary information is a frequency count for the selected field. Open the attribute table of the desired layer. Right click on the column you wish to count, and choose 'Summarize ...'. The dialog will allow you to add additional fields for summation, computing averages etc. If you don't need any of this, leave the middle section blank. Make sure to create a file name that you will remember, the default name is 'Sum_output'. If you have records selected in your table, you can choose to only generate summary statistics for those.

You will be prompted 'Do you want to add the result table in the map?'. Click Yes.

The output table will contain a unique list of values for the selected field, and a Count column, indicating the number of times that value appears in the table. You might then wish to join this table to a shape file to use these frequency counts as a quantitative value on a map.

5. I need to generate statistics from the numeric values in my table. Can I do this in ArcMap?

Yes, this functionality is part of the summarize function. When your field is defined as a Numeric field, you can compute averages, summarize values, find maximum and minimum values, standard deviation and variance. Open the attribute table of the desired layer. Right click on the column you wish to count, and choose 'Summarize ...'. The dialog will allow you to add additional fields for summation, computing averages etc. If you don't need any additional summaries, leave the middle section blank. Make sure to create a file name that you will remember, the default name is 'Sum_output'. If you have records selected in your table, you can choose to only generate summary statistics for those.

You will be prompted 'Do you want to add the result table in the map?'. Click Yes.

The output table will contain a set of statistics for the selected field. You might then wish to join this table to a shape file to use these values as a quantitative value on a map.

6. I have a table of latitude and longitude coordinates that I'd like to add to my map. When I try to display them using Display XY, nothing shows up on my map. What am I doing wrong?
 - Make sure the data frame of your map is set to some coordinates, generally UTM Zone 15 NAD 1983. If you have any data layers loaded, this was probably defined automatically.
 - Make sure in the Display XY dialog that you specify the input coordinate system for the points in the table. You must click the Edit button at the bottom of the dialog and browse through the choices of coordinates. Remember, you are not specifying the desired output coordinates; output coordinates are set based on the data frame.
 - Make sure that you are not confusing latitude and longitude and X,Y. The dialog asks for an X field and a Y field. Longitude is X and latitude is Y, not the other way around.