How to Make a Complete Map

Data Preparation

Map Theme: Tourism Map for Sichun Province. The map contains main places of interest, main transportsations, e.g. railway, express way, etc. Also the hotels and gas stations will be displayed at large scales.

The vector datasets to include: places of interest, hotels, gas station, railways, express ways, and administrative region datasets. The Province_R data in the China400 datasource is also needed.

First, import the *.shp files you need. SuperMap iDesktop 9D Then check the projection of each dataset. Conversion will be required if they have different projections. Dissolve will be used to merge line datasets that have many very small line segments.

Basic Steps

Import Data

1. Open SuperMap iDesktop 9D the iDesktop application, and create a new datasource: travel_udb.
2. In the Data group of the Start tab, click Import Data, and in the popup dialog box, click the Add button in the tool bar, and add the shp data in the dialog box.
3. Check the Import attributes option and click Import.
**Projection Conversion:** this is required if the datasets have different projection, in order to show them in the same map window.

1. In the workspace manager, right click any dataset and select Properties. Check the Projection node on the left of the dialog box, and you will see the projection details.
2. In the sample data, the point dataset of tourist places is in Beijing_1954, and the other datasets are in WGS_1984. So you can perform projection conversion on the tourist places data.

3. Click the Projection Transformation button. In the displayed dialog box, click Set Target Projection and set the target projection to WGS_1984. Click Apply.
4. In the Transform Projection dialog box, from Basic Parameters, select Coordinate Frame(7-para) from the Method dropdown list. Click OK to complete the transformation.

**Data Dissolve:** The street dataset has too many very small line segments, and these segments will affect the map representation result. You can use Dissolve to merge the lines with the same street name to a single one. You can also perform this function to other line datasets with the same issue.

1. In the Data Processing group of the Data tab, expand Gallery and click Dissolve, the dialog box is displayed.
2. Select the line dataset from the source datasource and select the dissolve field, e.g. the name of the transportation lines, and merge into one.
3. Set the mode as Dissolve. If you check the option “Objects with the dissolve field as 0”, then it means the objects within the dissolve tolerance that have 0 field values will be merged.

4. Set the result dataset name and click OK to complete the operation.

Map Display Optimization

While configuring maps, we often need to represent point, line, polygon dataset information together. To optimize map display, we can achieve this through adjusting the layer order, setting anti-aliasing effect, setting minimum display size for objects, setting display of complete line, etc.

Basic Steps

1. In the Workspace Manager, select multiple datasets, right click, select Add to New Map to open the selected data in the same map.
2. In Layer Manager, adjust the layer order through dragging.
3. In the Properties group on the Map tab, click Map Properties button to display Map Properties panel, check Line Antialiasing and Text Antialiasing to eliminate the zigzags of the text and vector datasets.

4. In the Properties group on the Map tab, click Layer Properties button to display the Layer Properties panel. Select all region and line datasets in Layer Manager, set Min Object Size in the Layer Properties panel to 0 to avoid the situations of incomplete objects.

5. Meanwhile, in the Layer Properties panel, check Complete Line box to have better display effects line layers with large number of short lines and polylines.

Symbolizing Map

The most intuitive expressions in a map are symbols. Simple points, lines, and regions can be symbolized to increase the readability of map. SuperMap symbol libraries offer a rich set of 2D and 3D symbols. You can select styles, set the symbol sizes, colors, and transparency etc. You can also customize new symbols and styles, and also import icon images in png, jpg, bmp and other formats to SuperMap symbol libraries.

SuperMap iDesktop 9D SuperMap uses symbol manager, editor and selector to manage all its symbols. The symbol manager is used to manage symbol resources, including its storage structure, adding/deleting symbols, importing/exporting symbols; the editor supports creating and modifying symbols; the selector is used to set the style of symbols, including their sizes, types, and colors.

Below illustrates how to set symbols for point, line, and region layers, and optimize the display effect:
Basic Steps

1. In the Workspace Manager, click the Resources node and double-click Marker Symbol Library. In the popup dialog box, click the File button and select Import-> Import Raster Symbol.

2. In the Import Raster Symbol dialog box, select the image to import. In this example, create a new group and save all the imported raster symbols.

3. Double-click the layer for tourist places in the Layer Manager, and in the Marker Symbol Selector dialog box, from the groups on the left panel, select the one you just created and apply the symbol. To make sure the raster image is not distorted when displayed in the map, you need to set the values in the Display Size and Marker Size parameters on the left to be 0mm, so the original proportion of the symbol will be retained.
4. Click OK or Apply to complete. In the same way, you can set the symbols for other layers.

5. In the Layer Manager, double click the line layers and set their line styles and color. You can also modify the line symbol, line width and line color.
6. In the same way, double click any region layer in the Layer Manager, and set the fill pattern. You can set the forecolor of the fill pattern, e.g. as white. Select a linestyle from the right side, e.g. System 0 in the root directory. Set the line width, e.g. 0.1mm, and set the line color, e.g. RGB (193, 216, 244).
7. Set the region layer, e.g. the provincial administrations, with a fill pattern style, and set both the fore and background color, e.g. as white. Set the transparency, e.g. 100%, set the line width; e.g. 0.5mm; set the line color, e.g. RGB (98, 159, 234)
8. Set the fill pattern style for the Province_P dataset layer, set the forecolor with a RGB value set (215, 228, 247); set the line style symbol with a symbol named “8”, set the line width 0.5mm, and line color with a RGB set (184, 204, 228).
9. Through the above settings, the display effect is enhanced and here shows some of the layers:
Thematic Mapping

A thematic map is a map that depicts one or multiple natural or social themes with symbols (marker, line style, fill pattern, color, size), to make the info about that specific theme more intuitive.

In SuperMap, you can create thematic maps of these types: Unique Values, Ranges, Labels, Graphs, Graduated Symbols, Dot Density, User-defined, etc. In this sample, you will learn how to use Unique Values and Labels thematic maps to create a tourist map.

Basic Steps

Create Thematic Maps for Line Features

1. Select “City_Boundary_region@travel” in the Layer Manager, and right click menu, select "Create Thematic Map...". And the Create Thematic Map dialog box is displayed. Select Label Map on the left side and select Uniform on the right side. Click the OK button to create a unified style label map based on city boundaries.

2. The created thematic map is automatically added to the current map window, and pops up "Thematic Map Manager" window. In the window, the default setting information of the current unifying style label map is displayed. On this basis, the style of the thematic map is set and the display style of thematic map is optimized.

3. In the Properties panel on Thematic Map Manager dialog box, click the button on the right side of Expression, select the "City_region.NAME" field, use the field as a special variable, re labeling the objects in the layer.

4. Set the Back Shape to "Default"

5. In the Thematic Map Manager panel Style interface, set that Font to Microsoft Adsense, Font Size to 9 and Text Color RGB to 127, 127, 127.
6. Follow the above steps to create a unified style label map for several other layers and set the corresponding label expression and label style. After creating the label, the preview of the thematic map will be as follows:
Create a label matrix thematic map based on the tourist attractions layer: Label matrix thematic maps can be pictures and text to express the information of various attractions. When creating the thematic map of the image label map, a field in the dataset attribute table stores the relative path information of the picture. Before creating the label map, modify the attribute information of the tourist attraction data set.

1. In the Workspace Manager, right click the "tourist attractions" dataset node, select Properties to open properties dialog box.
2. In the Properties dialog box, click Table Structure in the left directory, the area on the right side of the window will display the field structure of the data set attribute table. Click Add to add a new attribute field. In the last new row of the table, set the Field and Alias for the new field to: Path, the Type is: Text, Length: 50. As shown below. Click Apply to save properties table.
3. In the Path field property cell of the tourist attractions property sheet, enter the relative path and picture name of the corresponding picture of the object. The relative path refers to the relative path between the data source and the picture.
4. Based on the tourist attractions layer to create a default matrix-style label thematic map, you can set the style in the Thematic Map Manager to optimize the thematic map display.

5. In the Thematic Map Manager panel, click the white space in the list of thematic map, and modify the number of columns of the label matrix to 1 and the number of rows to 2. In the "Properties" interface of the Thematic Map Manager panel, set the "Back Shape" to "Default" style. Check the "No Overlap", and set the value is "Avoid at four directions".
6. Select the first row of the label matrix cell, click the right drop-down button, select Picture Label. Select Path field at the Path drop-down button. Check Keep original size.
   - In the Properties interface, set the Expression to the Sight Name and set the Back Shape to Default.
   - In the Style interface, set the Font Name to Microsoft Adsense, Font Size is 10, the Text Color is black, check the "Profile", set the background color RGB 0,0,0.

7. If the label text in the label map is covered, select the label point, line or area object, select Move Label in the Thematic Maps tab, click the left mouse button in the target position to move the label of the object to the target position.
Mapping for Scales

This function facilitates setting the layers that will be displayed at certain scale levels. You can check what layers are displayed at each scale. You can also set the Min and Max Visible Scale for each layer very conveniently.

Basic Steps

1. Open the map that needs to be scaled.
2. In the Map tab, expand Gallery On Mapping group and click Mapping for Scales.
3. Click the Add button in the dialog box to add new scales. By default, a number of scales have already been added. You can modify any of them.
4. On the right part, you can click the Min and Max Visible Scale button to set the two values for each layer.
5. Click OK or Apply, then the layers in the current map window will be displayed by the specified scales. When the layer goes beyond the Min and Max Visible Scale, it will be invisible.
6. The following shows the displayed map result at different scales:
Summary on Mapping

In real projects, to optimize a map, you may need a combination of methods and operations. Here summarizes the main methods that will be used.

Data Processing:

1. If you have a dataset with a large number of very small line segments that may affect the display efficiency, it is recommended you use Dissolve to process the data first.

Map Display:

1. Enable anti-aliasing for texts and lines.
2. Set the min and max visible scale for layers, and set a proper scale to display each layer. You can use the Mapping by Scale function to set the scales in a batch.

Other:

1. You can also divide the features into different datasets for displaying in different layers.
2. You may display or not display the same dataset at different scales with different styles. For example, for a line dataset for highways, you can display it in single lines at a small scale, or as double lines at a large scale.