

Enhance DataTips Using Scripts

Standard DataTips automatically pop into view to show location-specific text information from the geodata layers in the View window. The DataTip controls on the individual Layer Controls windows allow you to choose a field in a database table to provide DataTip information for that specific layer and to provide prefix and suffix text if desired (see the Technical Guide entitled *DataTips*). For more complex and informative presentations you can use a Display Control Script to modify and enhance the DataTip content. A script gives you extensive control over DataTip content, allowing you to add text and styling, perform computations with attribute values, and dynamically create graphics such as charts and graphs with the current attribute information. You can create and add a display control script to a group or layout by choosing Edit Control Script from the Display menu of the Layer Manager window.

A display control script can access the cursor position as the DataTip is about to appear, use this position to obtain data from one or more layers in the view (raster cell value, database attribute value for the enclosing polygon, and so on), and present the data or results computed from it. The script can set text styles, add to or replace the standard DataTip text produced from other layers in the View, and use SML class methods to draw graphical elements and text. A display control script can transform the DataTip into a powerful information center that automatically presents a wealth of dynamically-changing information every time the user of your spatial data moves the mouse cursor.

The illustrations above right show a simple example in which a display control script modifies the text content and appearance of a DataTip showing information from real estate property polygons. The control script adds the bold, centered headline text at the top of the DataTip and sets different background colors depending on whether the property at the cursor location is outside of a floodplain, in a 500-year floodplain, in a 100-year floodplain, or in a floodway. This display control script is shown on the next page. (The bold and columnar formatting for the other DataTip content is set using

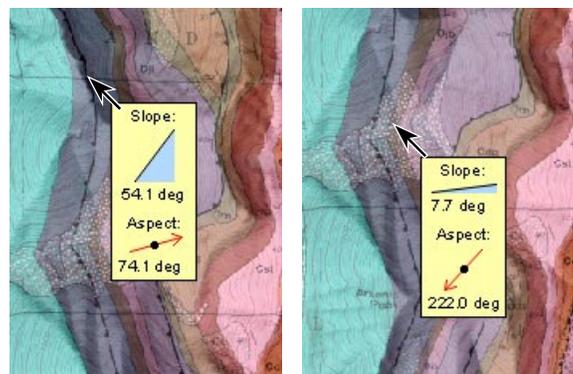
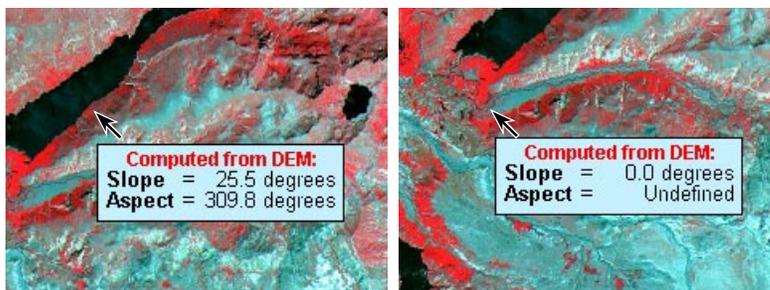


In these illustrations, a Display Control Script (DTbackgroundByAttribute.sml) is used to create the heading for the DataTip and to change the background color depending on the floodplain status of the property at the current cursor location.



formatting in the source attribute fields; see the Technical Guide entitled *Add Styling to DataTips*).

As another example, consider a group or layout that includes an elevation raster. A standard DataTip can report the elevation value for the raster cell under the cursor (along with information from other layers in the view). The sample enhanced DataTips illustrated here use the elevation raster to compute the local terrain slope and slope direction (aspect) at the cursor position and show the result. The enhanced DataTip shown below left presents the results as labeled and formatted text. The DataTips illustrated below right include graphics to depict the computed slope and aspect direction. The display control scripts that create these and other enhanced DataTips are available for download from www.microimages.com/sml/index.htm.



DataTips created by the SlopeAspectGraphTip control script. The script draws a triangle to show the slope and an oriented arrow to indicate the aspect direction.

Enhanced DataTip created by the SlopeAspectDataTip script. Since aspect is undefined for flat areas, the script does not compute aspect if slope = 0, but instead reports aspect as "Undefined."

(continued)

Display Control Script to Provide DataTip Heading and Vary Background Color by Attribute

```

func OnViewDataTipShowRequest ( function called when DataTip is to be shown
class GRE_VIEW view,
class POINT2D point,
class TOOLTIP datatip
) {
    datatip.String = set the heading text
    "{~CJ~TS14~FARIALBD.TTF}Real Estate Property Details{~LJ~TS12}";
    return 0; allows DataTip text from the layers to be appended
    to the DataTip string created by the script
}

func OnViewDataTipShowText ( function called after layer data
class GRE_VIEW view,
class POINT2D point,
class TOOLTIP datatip
) {
    datatip.MarginHeight = 5; set the size of the margin between the
    datatip.MarginWidth = 5; DataTip text and frame border in pixels
    datatip.BackgroundColor.name = "sea foam";
    if (datatip.String contains "floodway")
        datatip.BackgroundColor.name = "misty rose";
    else if (datatip.String contains "100 year")
        datatip.BackgroundColor.name = "light orange";
    else if (datatip.String contains "500 year")
        datatip.BackgroundColor.name = "lemon chiffon";
    return 1; show the DataTip
}
    
```

A display control script can be used to augment standard DataTip information from all the layers in the group or layout, including multiline text for a layer created by a string expression in a computed text field and a photo thumbnail from a geotagged image database. In the example illustrated below, the control script accesses database information for census block polygons to show the percentages of population in different age groups as a text list and as a pie chart. The remainder of the DataTip shows property parcel information (multiline text), a photo from a geotagged image database, and single-line text from additional layers in the group.

Census Block Age Breakdown:

Under 18:	16.9%
18 to 29:	15.3%
30 to 44:	23.7%
45 to 64:	27.1%
65 & over:	16.9%

Block Number: 5019

Parcel Information

Address: 705 S 32 ST
Owner: SMITH, RANDALL B
Owner Occupied: Yes
Owner City: LINCOLN, NE
Assessed Value: \$104800
Parcel ID: 17-30-119-021-000
Acreage: 0.154917 acres

Historic District: Woods Park Bungalow
Zoning: R-2
Soil mapunit: UxC
Elevation: 368 meters

Pie chart with legend and text line created by Display Control Script for census block layer.

Image thumbnail from pinmapped geotagged image database table, centered using formatting code embedded in prefix string.

Multiline DataTip for Parcel layer: uses a computed text field in table to create a formatted multiline listing of multiple attributes from same layer.

Simple DataTip information for several layers (one attribute from each) with formatting codes embedded in prefix string to set bolding and tabs.

