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Demo: Creating a Geographic Map Using Shape Files

In this video, we show how to create a geographic map using shape files and the Mobile Cellular data.

Remember that this is data about mobile cell phone subscriptions per 100 people, from 1990 to 2017. The data set includes information on 217 countries grouped into seven regions and four income groups.

Because we have the names of the countries and the ISO codes, a geographic map can be created using Graph Builder under the Graph menu.

To create a geographic map for these data, we drag the ISO code to the Map Shape field. The boundaries of each of the countries are automatically drawn, and the axes are now latitude and longitude.

Now, when we drag a variable like Region or Mobile (per 100) to the Color zone, the map is colored by the values of these variables.

We'll change the color gradient to a sequential theme and change the scale type to quantile. This enables us to better compare the mobile phones for the different countries.

The data set includes data for 28 years. So, this is combined data for all of the years.

To see the mobile phone subscriptions for a particular year, we can use the local data filter. Here, we select Local Data Filter under the top red triangle, and select Year as the filter variable.

As we scroll through the years, the colors in the geographic map update based on the mobile phone subscriptions for the selected year. We can see, geographically, how mobile phone subscriptions have changed, globally, over time.

Let's talk about how this map is created. Shape files for many regions, and the world, can be found in the JMP sample data directory. To see the shape files that are available in JMP, we navigate to this directory using Help and then Sample Data.

We click Open the Sample Data Directory, navigate up two levels, and open the Maps folder.

For each territory, there are two files: a Name file and an XY file.

Here, we see the Name and XY files for the world. In the Name file, you see a Shape ID and various shape names, including the ISO code. In the XY file, you see the Shape ID, which corresponds to the Shape ID in the Name file. It also has X and Y coordinates for each shape.

When you drag a variable to the Map Shape role in the Graph Builder, JMP searches for shape files that match the values of the variable and uses the XY file to draw the boundaries of the shape.

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