Raster Map

Getting Started

There are two styles of heat maps available using Yellowfin. Those created from GIS data or those created via an image (Raster Map). The image will contain all the regions for your data. These images work by substituting a unique colour in your image with a new colour based on the value of data in your report.

To begin making Raster Maps you will need to have:

- An **image** with each 'Zone' defined by a unique colour (JPG or PNG)
- **Reference Code** data that allows you to match each map zone to reference data. (In the tutorial we have Country as a Ref Code – so that we can map each zone to a country code which will then be used for our data).

Note: the examples contained in this **Getting Started** section do not use the Ski Team data or supplied image. The examples for you to follow along with begin in the **Setting up a Map via Administration Options** section.

Selecting the Right Image

When setting up a Raster Map, selecting the right image means more than just finding an image that depicts the data in your data set. In the initial search there are some criteria your image should attempt to meet:

1. **The image should contain all areas you wish to assign data to.** For example, if you wanted to map revenue by states of Australia, you would need a full map of Australia. A World map would not be suitable here, nor would a map of half of Australia.
2. **The image should only contain elements you wish to be displayed in the final map**. This means that if you found a map of Australia, the image should not contain a background of surrounding water and land masses unless you wish these areas to be displayed in the final map. **Note:** any area that does not have data assigned to it will display as found in the original image.
3. **The image should be of a high enough resolution so that you can resize the final map without losing clarity**. This means that the image needs to be the size you wish to display your final map, or larger, so that edges and backgrounds do not appear blurred when resized.

Example

If you wanted to map the groups of bones in the human hand you might find an image like this in your search:
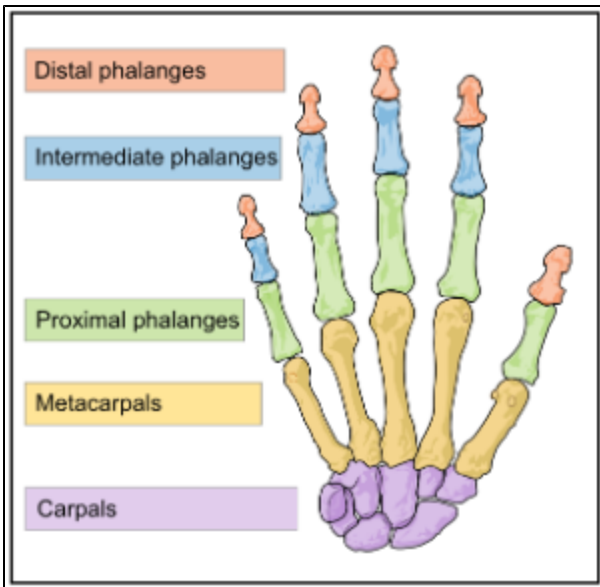
While this initially appears to be exactly what you were after, all the bones in the human hand, grouped by type, there are problems with it.

1. The areas of the image to be highlighted by the data need to be one unique colour per area. In this image you will note that each bone has shading, which means it's actually made up of multiple unique colours.

2. The labels on the image (Distal Phalanges, Intermediate Phalanges, etc.) may have been useful for the original use of the image, but are not going to be required on our map.

3. Thirdly, there is a thick black border around the edge of the image which is not required for our purpose.
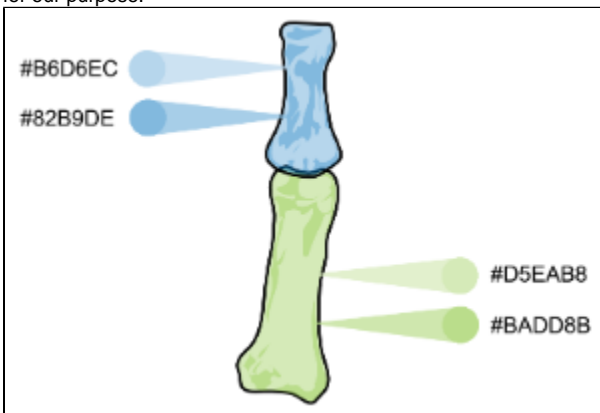
In order to prepare this image for use in Yellowfin it will need to have all shading and unnecessary elements removed. If done correctly the cleaned image should appear something like this:
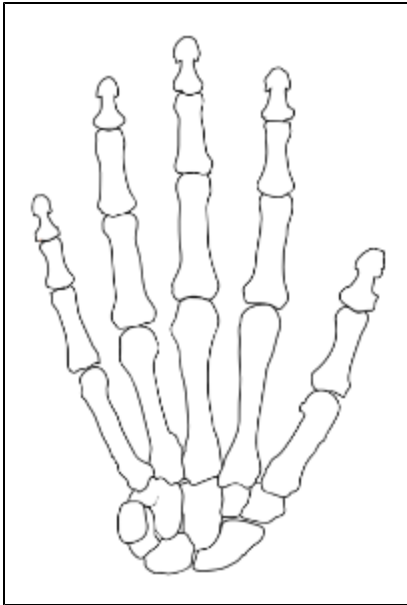
When you have a clean image you are ready to start assigning colours to the data areas.

Note: the cleaning process will require the use of image editing software.

Assigning Colours to the Image

Once you have a clean image to work with you will need to assign colours to each area of the map. In this case, you want to highlight each group of bones together.

To do this you will need to assign a unique colour to each group and then fill all the bones in a group with the corresponding colour. See example:
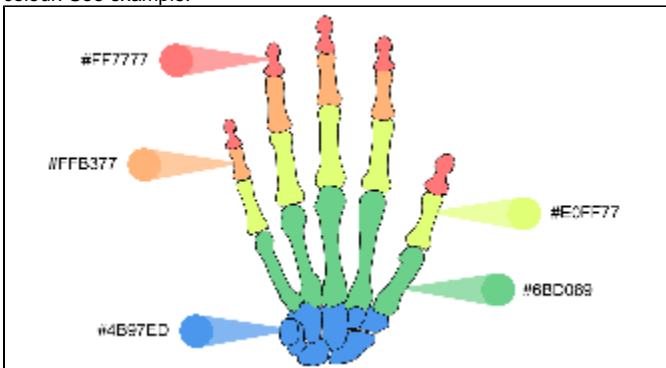
As you assign colours you will need to keep note of the relationship between each colour and the bone groups. Set up a simple text file or spreadsheet with this information, for example:

Colour (Hex Code)	Code	Bone Group
#FF7777	DP	Distal Phalanges
#FFB377	IP	Intermediate Phalanges
#E0FF77	PP	Proximal Phalanges
#6BD089	M	Metacarpals
#4B97ED	C	Carpals

Note: colouring the image will require the use of image editing software.

Creating your Corresponding Org Ref Code

The last preparation step before creating your Map in Yellowfin is setting up an Org Reference Code. In this example you need to create a reference code based on the Bone Group data.
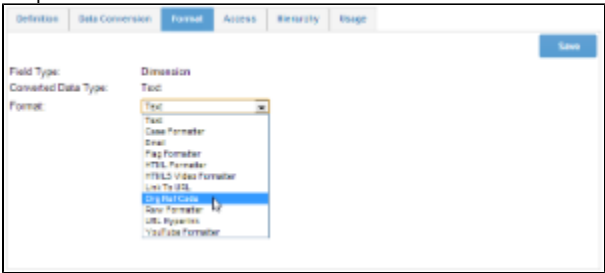
You will need to either;

- Edit the view you wish to base your map on and edit the appropriate field, opening the Format tab. OR
- Create a new reference code in the Add Image process and ensure you apply the code to the corresponding field in the report builder.

In this example we will set up the Reference Code in the View Builder.

To create a reference code in a view you will need to edit the appropriate field in Step 2 of the view builder, opening the Format Tab.
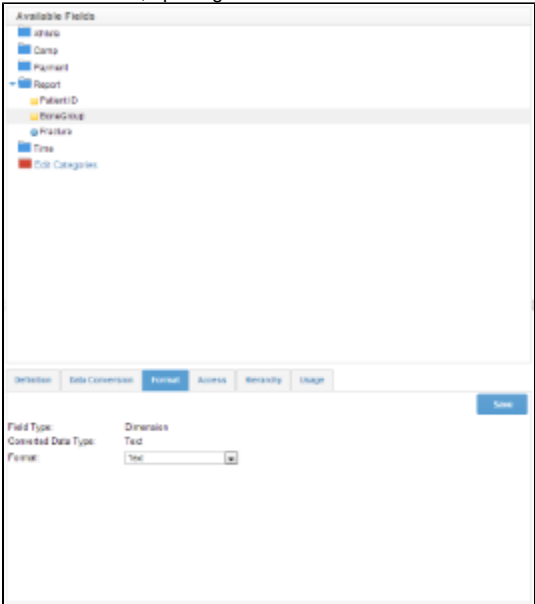
Select **Org Ref Code** from the **Format** drop down. This will mean that the field will have the reference code applied when you add it to a report.

You will now have to either select from a list of currently available reference codes, or create a new one. In this case you will create a new one by **Pre-Populating from the Database**. This means that Yellowfin will create a list of distinct values from this field in your source database.
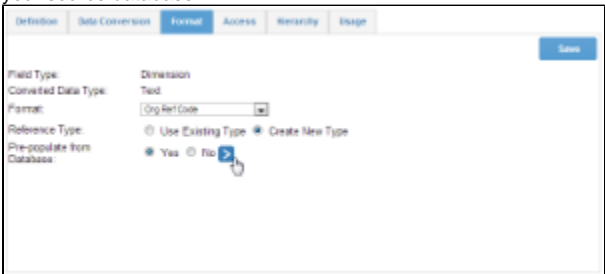
When setting this up, you will need to ensure that you have a code for each area on the map, even if you don't currently have data for it in your source database. This will ensure that you can set up the map correctly and as soon as there is data for the area it will be recognised by Yellowfin.

Click **Save** to complete the setup and **Save** changes on your field. Finally, ensure that you Activate your view and you will be ready to set up your Map Image in Yellowfin.
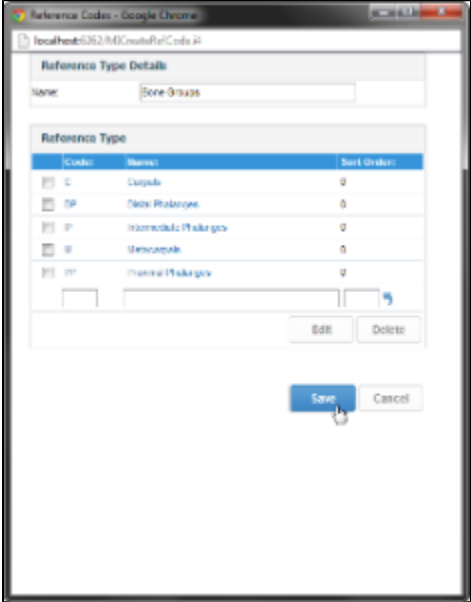
Note: If you wanted to create the code in the Add Image process you would simply click on New rather than selecting a code from the existing list. See below.

See *Reference Code Use* for more information.

Setting up a Map Image

For this section of the tutorial you will need an image and text file we have provided. Please download WorldHeatMap.png and WorldHeatMapCodes.txt .

1. Select a blank map or image that you want to use to create your heat map. This could be any image type (World, Human Body, Floor Plan etc). In this case we used a world map.

2. For each 'Zone' you will need to set a unique colour. As seen on the right this image has a unique Green for every country on the map. This was done in an image editor – not using Yellowfin. (See previous section for more detail)

3. Next go to Administration and click on the Images and Maps link.
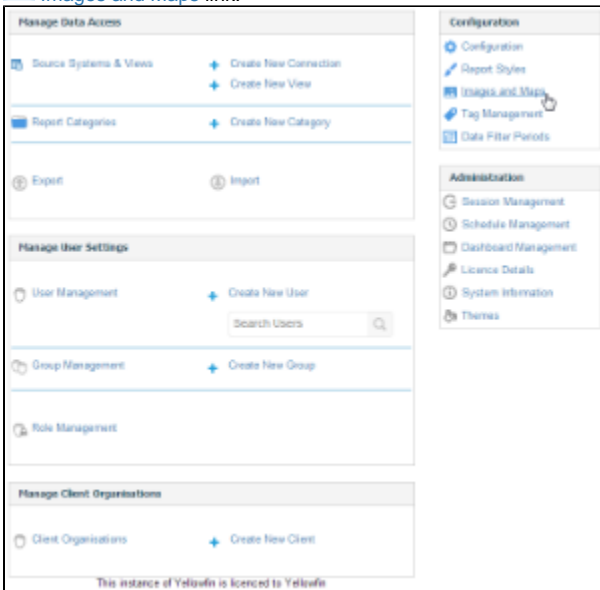
4. You will now see a list of images. Click on **A dd** at the bottom of the list.

5. Provide a Name and Description for your image.

6. Next select **Map Image** from the Image Type drop down. This will update the form to have additional input options.

7. Browse for your map image using the upload file options. Select the WorldHeatMap. png image file.

8. Click ⬆ Upload File.

9. Set the Zone Reference Type to **Country**.

The Zone Reference Type is the reference code that will link data from your report to the map zone. This has already been created for you in Yellowfin. To see how to create your own reference code please see the previous section.

10. You will notice that the Display is set to **Code**. This means that for each Reference Code, there is a box for assigning a colour (in HEX format). You can also set the display to **Colour**.

11. When Display is set to **Colour** you will see a list of all the colours in the image (in HEX, with the colour set as the background). This allows you to select a Reference from the drop down next to each colour.
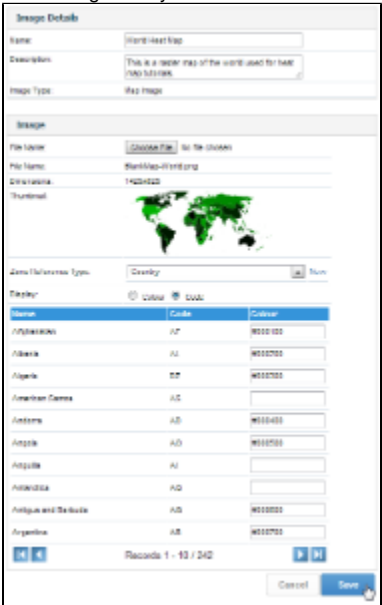
It doesn't matter which option you choose, sometimes it is easier to use one method over the other.

12. Use the WorldHeatMapCodes.txt document to help you assign the correct colours to each reference code.

13. Once you have matched all reference codes to a colour in the image click **Save**.

**Note:** you do not have to match every colour in the image – only those used for data.

See *Images & Maps* for more information.

Adding a Raster Map

Once a Raster Image has been added into your available list of images you can add these into a report. This section describes how it would be done using the standard Ski Team Tutorial view.

1. Click on the **Create** link and select **Report** to begin building your report.
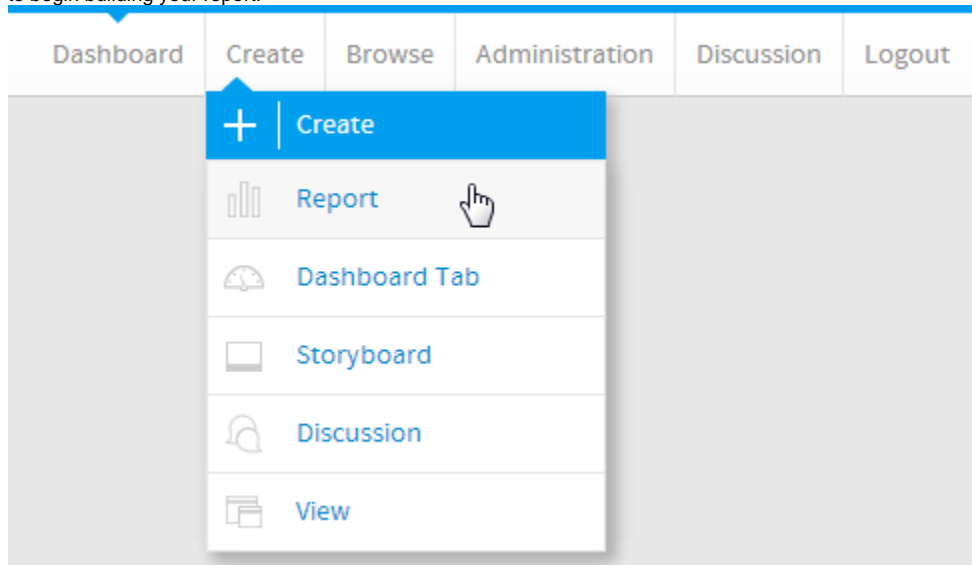
2. You should now be on the Initialise Report page. Select the **Drag and Drop Builder** as the build tool.
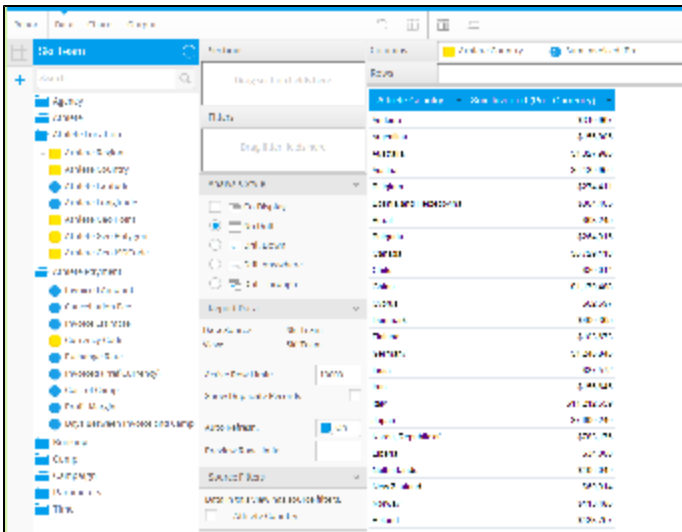
**3.** Select **Ski Team** as the View.
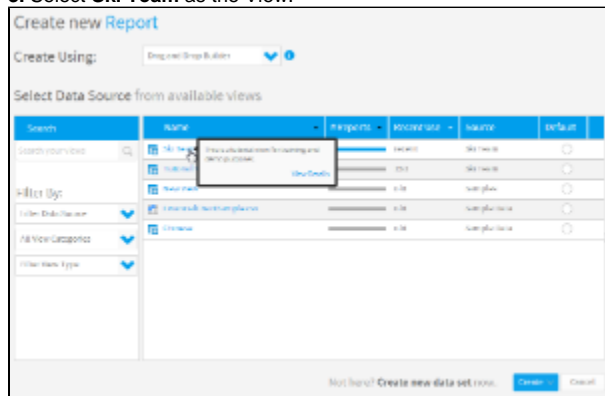
4. On your report data page drag the **Athlete Country** field from the Athlete Location category into the Columns list.

5. Drag the **Invoiced (Pref Currency)** column from Athlete Payment into the Columns list.
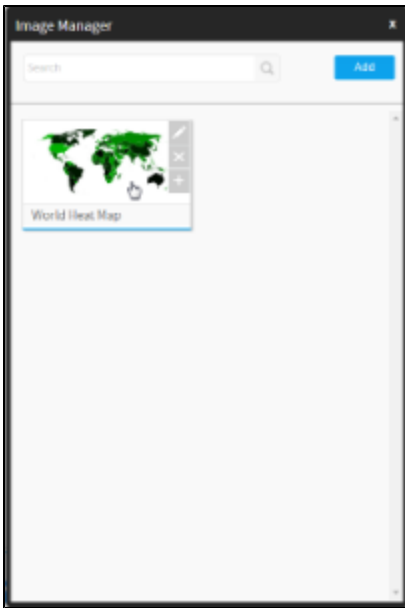
6. Click the **Charts** step to continue.

7. Open the **Chart Type Selection** panel on the right of the builder, and select the **Raster Map** option. This will change the chart components to match what is required by the Raster Map.
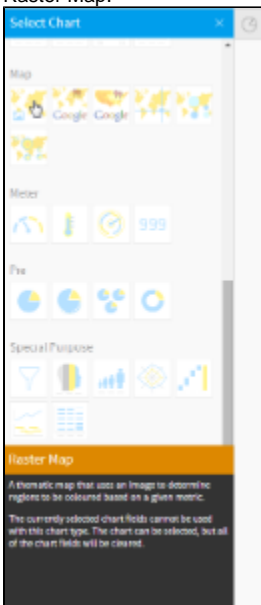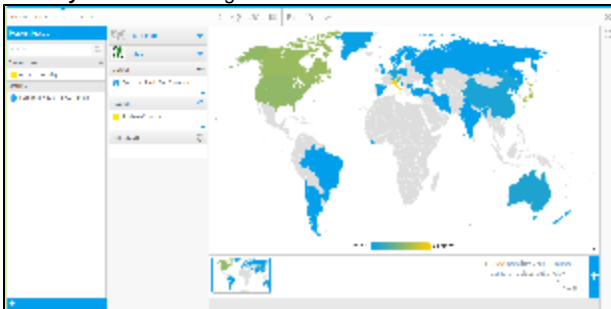

8. In the **Chart Data** area click on the Image section to select the map image to use.
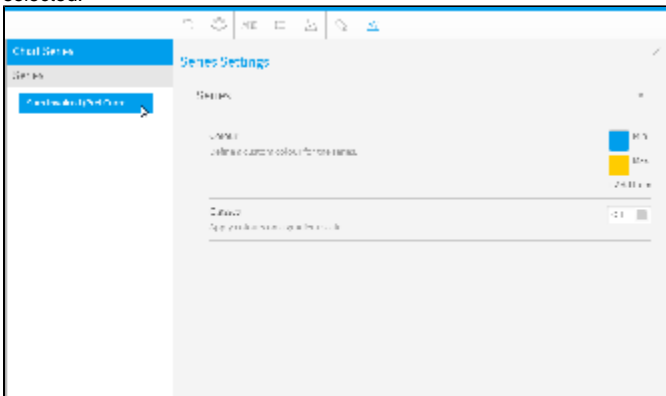
9. Select the **World Heat Map** image.

10. Now drag the **Invoiced (Pref Currency)** into the Colour section, and the **Athlete Country** field into the Region section.


11. If you wish to change the colours applied to the map, open the **Series Settings** menu.

12. Here you can select the *Invoiced (Pref Currency) field and change the colours selected.
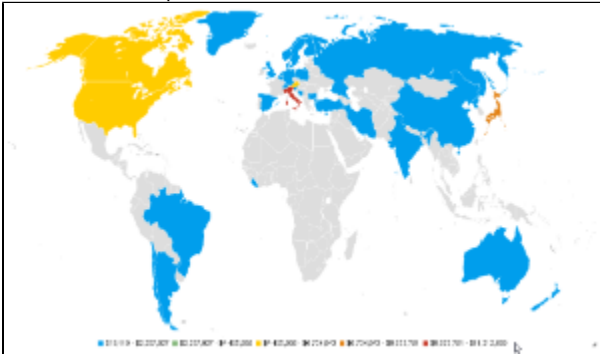

13. You can add additional colours (the default is 2) and split them into classes rather than being a gradient scale.

Note: if a zone has not been mapped to the data correctly it will be displayed in its original colour
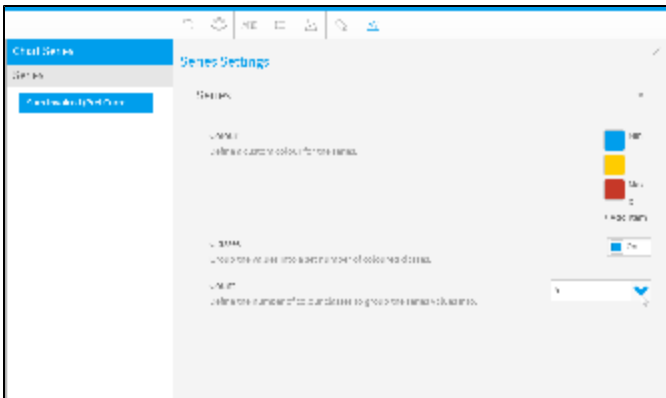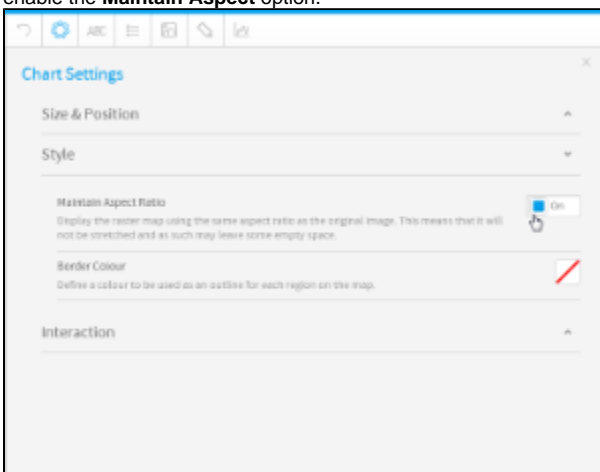
14. Click the **X** button in the top right of the Series Settings menu to see your changes reflected in the map.
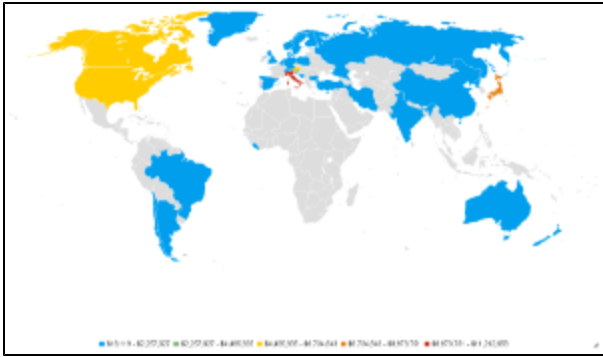

You may have noticed that the chart seems distorted, in order to prevent you will have to set the map to maintain the original aspect ratio of the image.

15. Open the **Chart Settings** menu and enable the **Maintain Aspect** option.

You should now have a map that more closely resembles the original image. Now that you have finished your map, save and close it.

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