**Exercise 10: Printing and Exporting Maps**

The ArcPy Mapping module, released with ArcGIS 10 provides a number of capabilities including the management of map documents and layers, printing, exporting, and ArcGIS Server publishing as well as map automation and the creation of PDF map books. This exercise will cover printing and exporting maps. At the end of this exercise you will have learned the following:

- How to print a map document
- How to print a specific data frame from a map document
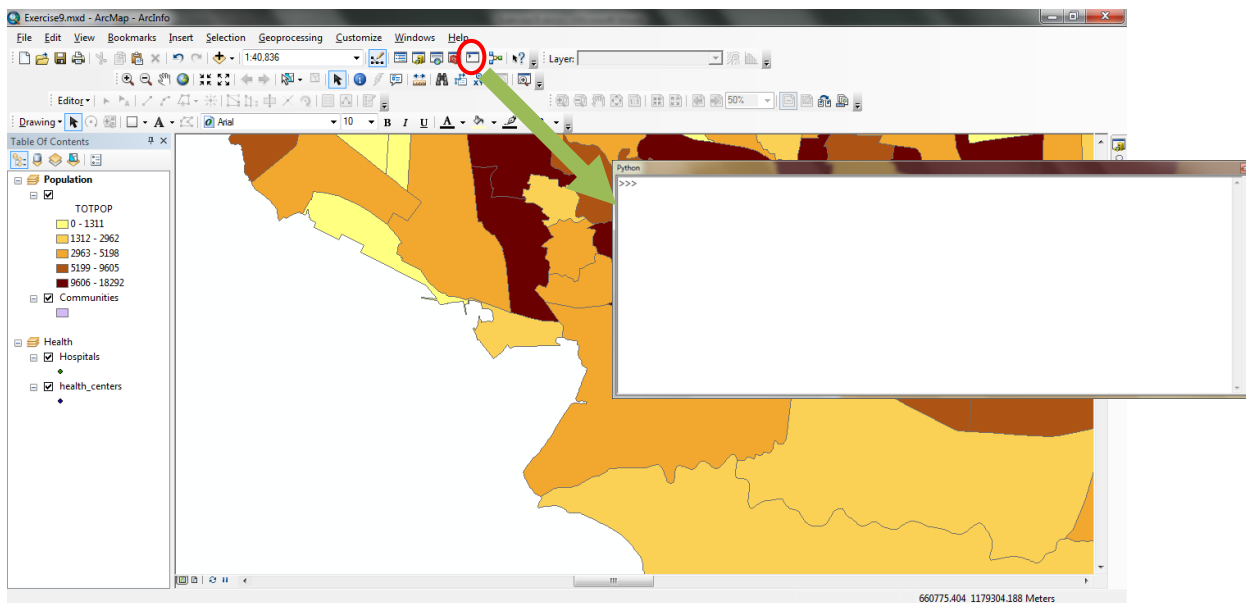- How to export a map to image file formats

Step 1: Open the Crime.mxd Map Document file
- Start ArcMap and load Exercise10.mxd
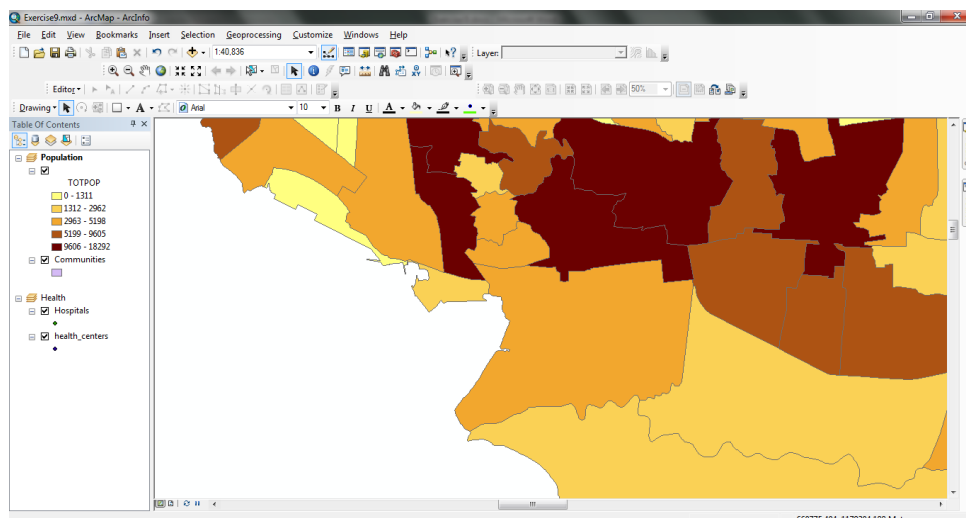
Step 2: Open the Python Window

- Click the Python Window button to open the editor.

Step 3: Reference the ArcPy Module
- In the Python Window type the code you see below. This will reference the ArcPy Mapping module.


```
Python
>>>   import arcpy.mapping
```

Step 4: Reference the Current Map Document File
- Add the code you see below which will reference the currently active map document file.


```
Python
>>>  import arcpy.mapping
>>>  mxd = arcpy.mapping.MapDocument("CURRENT")
>>>
```

Step 5: Print the Map
Now that you have a reference to the current map document file we'll print the current map document.
- Add the following code to the Python Window.

The PrintMap() method can print the page layout of a map document or a specific data frame from the document. We'll print a specific data frame in the
- Run the code by hitting the enter key and the map should print to your default printer. Note: Make sure you have at least one printer configured.

```
Python
>>> import arcpy.mapping
>>> mxd = arcpy.mapping.MapDocument("CURRENT")
>>> arcpy.mapping.PrintMap(mxd)
>>>
```

Step 6: Printing a Specific Data Frame
In this next step we're going to print the Crime_Inset data frame using the PrintMap() method.
- Right click inside the Python Window and select "Clear All" which should result in the window being cleared of all code and output as seen below.

```
Python
>>>
```

Add the following code block which will loop through each data frame looking for the Population data frame. Once found, the PrintMap() function will print this data frame to the default printer. The default printer will be used since we specify two quote symbols without anything in between.

```
Python
>>> import arcpy.mapping
... mxd = arcpy.mapping.MapDocument("CURRENT")
... for df in arcpy.mapping.ListDataFrames(mxd):
...     if df.name == "Population"
...         arcpy.mapping.PrintMap(mxd,"",df)
... |
```

Step 7: Export a Data Frame As JPEG File
In this step you'll use the same data frame that you printed in the last step, but instead of printing the data frame you'll export it to a JPEG format file.
- Clear the Python Window

- Add the following code block, run it, and then we'll discuss the code.

```
Python                                                        ▣
>>> import arcpy.mapping
... mxd = arcpy.mapping.MapDocument("CURRENT")
... for df in arcpy.mapping.ListDataFrames(mxd):
...     if df.name == "Population"
...         arcpy.mapping.ExportToJPEG(mxd,r"C:\Users\Me\Desktop\GIS
Programming\Training\newJPG.jpg")
... |
```

This script loops through the data frames in the map document. When it finds the Population data frame it exports the contents to a JPEG file using ExportToJPEG which can accept many arguments but in this case we're simply providing a variable that references the map document file (mxd) and a path and filename for the file to be exported. Looking in Windows Explorer should verify that the newJPG.jpg file has been created. As I mentioned, the ExportToJPEG function can accept a number of optional arguments. You can see the syntax for this function below. In our case we've taken the easy road and only supplied the map document file and file name and path for the file. However, as you can see the ExportToJPEG function can accept a number of specific parameters related to the creation of JPEG format files. Each ExportTo<Type> function will vary depending upon the parameters that can be used in the creation of the image file.

ExportToJPEG (map_document, out_jpeg, {data_frame}, {df_export_width}, {df_export_height}, {resolution}, {world_file}, {color_mode}, {jpeg_quality}, {progressive})

Step 8: Exporting to PDF
 PDF files are obviously an extremely popular way of sharing information. The ArcPy.Mapping package provides an ExportToPDF() function that you can use to export the page layout of a map document or a specific data frame from a map document. The use of ExportToPDF() will look very similar to the ExportToJPEG() function you used in the last step.
  • Clear the Python Window

  • Add the following code block, run it, and then we'll discuss the code.

```
Python                                                        ▣
>>> import arcpy.mapping
... mxd = arcpy.mapping.MapDocument("CURRENT")
... for df in arcpy.mapping.ListDataFrames(mxd):
...     if df.name == "Population"
...         arcpy.mapping.ExportToJPEG(mxd,r"C:\Users\Me\Desktop\GIS
Programming\Training\newJPG.jpg")
...
```

Notice that the ExportToPDF() function looks virtually the same as ExportToJPEG(). Keep in mind though that the optional parameters will be different. For example, ExportToPDF has optional parameters for resolution, image quality, colorspace, compression of vectors, image compression, picture symbols, embedding of fonts, georeference information, and more.