Animating Change in Racial Composition in Philadelphia from 1940 to 1990

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Overview

- Create a series of choropleth maps using the **Time Manager** plugin in QGIS
- Use **Photoshop** to create an animation of change in racial composition over time

Data Preparation

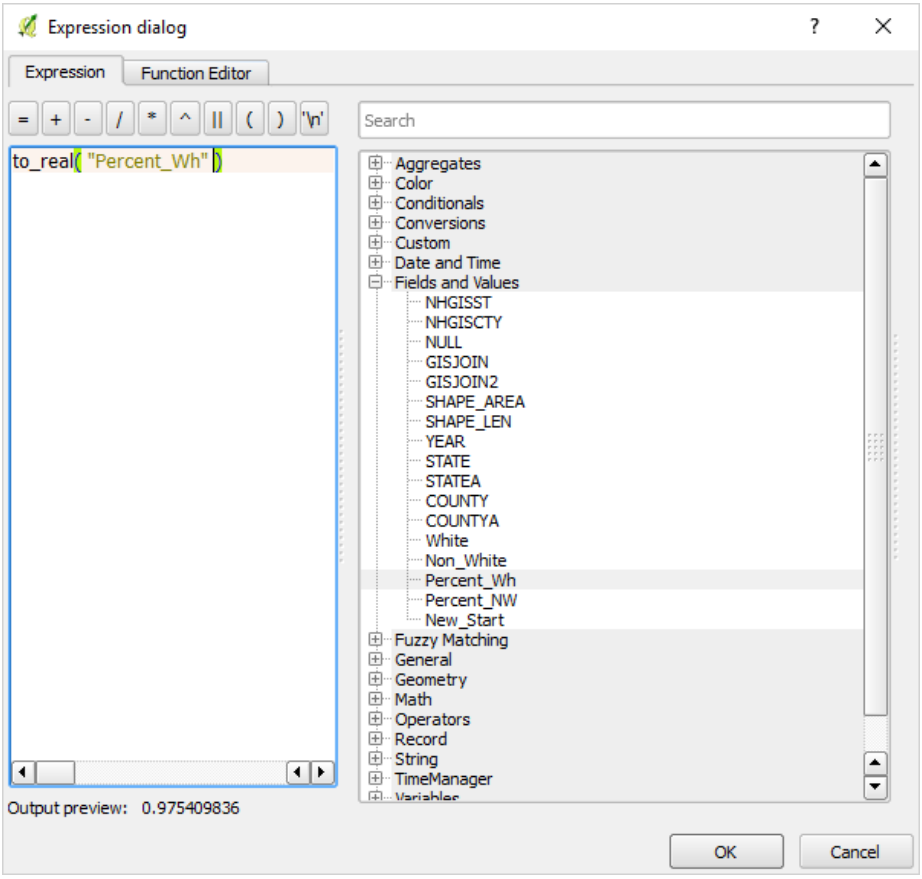
- Download the **Race_1940_1990** shapefile
- Install **Time Manager plugin** in QGIS

Create a Choropleth Map and add to Time Manager

Now, you are going to create a choropleth map showing the percentage of the population of each census tract that is either White or non-White (you choose which one).

- Layer Properties–> Style
- Click "Graduated" symbol

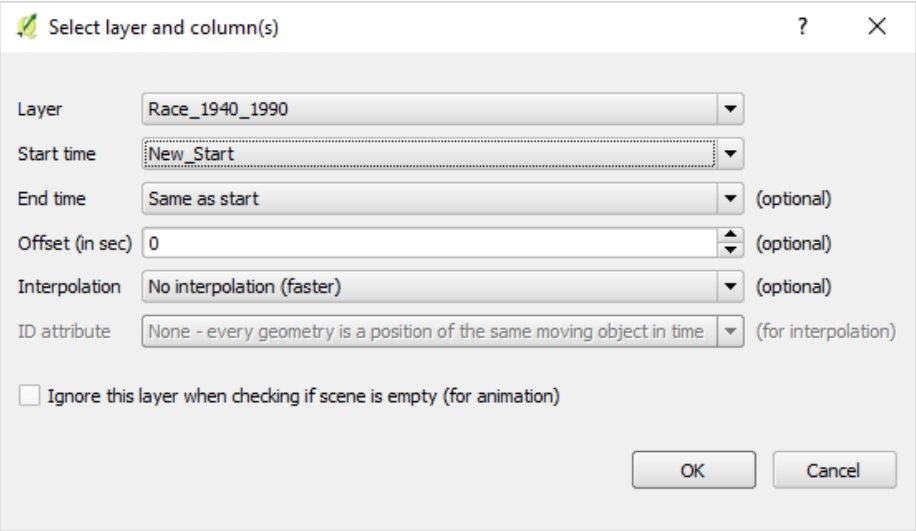
Notice that neither the **"Percent_Wh"** nor **"Percent_NW"** columns are available for selection. Both columns are in string format. Use the expression dialog to convert either column to a **numeric** format. Click OK.



Choose the **"Natural Breaks"** classification and click OK.

Next, we will add the layer to Time Manager.

- Click **"Settings"** on the Time Manager toolbar.
- Click **"Add layer"**
- In the dialog box that appears, change the Start Time to **"New_Start"**. This indicates to time manager which column in the attribute data worksheet lists the date. Click OK.



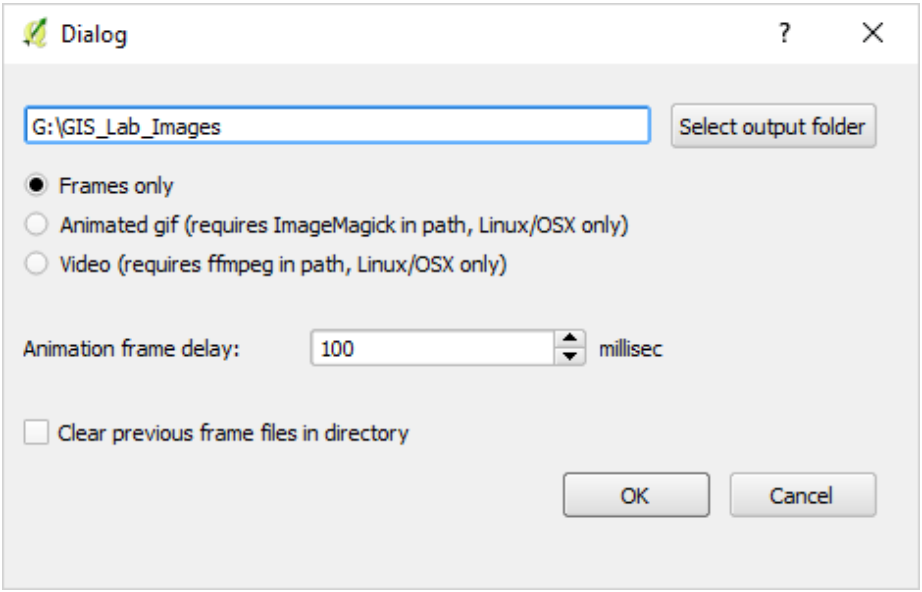
In the Time Manager toolbar, change minutes to **"years"** and change the time frame size to **10** (so each "frame" is a map of a different decade). Your animation is now ready to export to PhotoShop! First, however, we must create a legend.

- Create a new print composer
- Add a legend to the composer (you don't even need to add the map)
- Label the legend appropriately
- Use the "Snipping Tool" to cut and save an image of your legend (search snipping tool in Windows)

Export Choropleth Maps from QGIS

Before exporting your maps, make sure you:

- Click on **"Export Video"** in Time Manager Box, it provides you two options of outputting. One is **"Frames only"**, which outputs each frame into an image. The other is 'Animated gif', which requires you to have ImageMagick in path, Linux only.
- Choose **"Frames only"** (because we aren't using Linux). Create a new folder to store images. Click OK.
- Open up the folder and make sure you have six images.



Create Animation using Photoshop

- Open **Adobe Photoshop**

  Note If you are using lab computer, PS is located in the **Adobe** folder in **START** menu.

- Import the images to Photoshop.

  Note To import multiple images into one workspace, drag one image to canvas first, select the rest and drag them to canvas, and then keep hitting **'Enter'** until they are all imported.

- Open **"Window"** > **"Timeline"**

- A workspace will pop up on the bottom, choose 

- Then click on  on top right corner of the box, choose **"Make frame from layers"**. Now all frame should be added to timeline. >**Note** >Make sure you have the right order of frames in your timeline.

- Set all frame delays to 1s except the last frame, which you will set to 2s.

- Choose **"Forever"** to create a loop for your animation.
- To export as animation, go to **"File"** > **"Save for web"**
- Make sure you choose **"Forever"** from "Looping options"

Assignment

- Add **Title**, **Legend**, and **Credit** to your map
- Make a GIF for both **White** and **Non-White** population change.

What can you tell by comparing the changes between them?