**Gapminder Visualization/Analyses**

Let’s get the gapminder data to reveal some important patterns within – patterns that manifest themselves over time, across and within continents, and between (causal and response) variables. In the process, contemplate choices you can make in the visualizations that make them more or less effective; more or less beautiful; more or less truthful.

The gapminder data set is contained within the gapminder package. First load the package into your session and then assign it to an object. E.g.,

gapminder <- gapminder

The following prompts take you through a variety of analyses, each requiring a different plot type and use of dplyr functions.

1. Generate a plot that helps to illustrate any association between GDP per capita and life expectancy (restricting data to 2007). Then inject additional information into the plot, such as population and continent affiliation of the countries. Then set the x-axis to a log scale and compare the visual to the non-logged scale. How do they compare? How does the transformation affect the interpretation? Try creating multiple plots by continent? Any value in doing that or not?
2. Again restricting your data to 2007, generate plots that (1) compares the distribution of countries on life expectancy by continent and (2) compares continents by the mean life expectancy. Which one has more value and why?
3. Generate a plot that compares life expectancy trends over time across countries, coloring the lines by continent. Thoughts on the plot? Now create a plot to show average life expectancy trends at the continent level. What are the pros/cons of each plot?
4. Instead of including all of the countries in the data set, pull out just a handful (~7 or 8) to include in your plot of life expectancy trends over time. Try to be thoughtful in your selection of countries. What do you want to explore with the plot and how does that affect which countries you include? You can find a list of countries in the CRAN documentation. <https://cran.r-project.org/web/packages/gapminder/README.html>

a. Highlight (via a distinct color and size) a particular country’s line in this particular plot so that it stands out against the others.