

Exercises: Advanced Manipulation

Exercise 1

Re-create this same plot from scratch without saving anything to a variable. That is, start from the `ggplot` call.

- Start with the `ggplot()` function.
 - Use the `gm` data.
 - Map `gdpPerCap` to the x-axis and `lifeExp` to the y-axis.
 - Add points to the plot
 - Make the points size 4
 - Map continent onto the aesthetics of the point
 - Use a `log10` scale for the x-axis.
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Exercise 2

1. Make a scatter plot of `lifeExp` on the y-axis against `year` on the x.
 2. Make a series of small multiples faceting on continent.
 3. Add a fitted curve, `smooth` or `lm`, with and without facets.
 4. **Bonus:** using `geom_line()` and aesthetic mapping `country` to `group=`, make a “spaghetti plot”, showing *semitransparent* lines connected for each country, faceted by continent. Add a smoothed loess curve with a thick (`lwd=3`) line with no standard error stripe. Reduce the opacity (`alpha=`) of the individual black lines.
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Exercise 3

1. Make a jittered strip plot of GDP per capita against continent.
 2. Make a box plot of GDP per capita against continent.
 3. Using a `log10` y-axis scale, overlay *semitransparent* jittered points on top of box plots, where outlying points are colored.
 4. **BONUS:** Try to reorder the continents on the x-axis by GDP per capita. Why isn't this working as expected? See `?reorder` for clues.
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Exercise 4

1. Plot a histogram of GDP Per Capita.
2. Do the same but use a log10 x-axis.
3. Still on the log10 x-axis scale, try a density plot mapping continent to the fill of each density distribution, and reduce the opacity.
4. Still on the log10 x-axis scale, make a histogram faceted by continent *and* filled by continent. Facet with a single column (see `?facet_wrap` for help). Save this to a 6x10 PDF file.