# Gapminder

## Task 1: Familiarization with the Tool

Open the [Gapminder Bubble Chart Tool](https://www.gapminder.org/tools/). You should see a bubble chart plotting several country’s life expectancy versus their income (per capita GDP) in 2019.

1. Click the *How to Use* link and read about the various features of the tool.
2. Use the tool to find Samoa. What is the average life expectancy in Samoa? What is Samoa’s average income?
3. Set the tool to the year 1800. Select Norway. Press the “Play” button. How does life expectancy change for Norway over time? What about income?
4. Reset the tool to the year 1800. Select the European countries. (Remove the rest of the countries from the chart.) Describe the relationship between life expectancy and income in 1800 for the European countries.
5. Press the “Play” button. Describe how the relationship between life expectancy and income for the European countries changes over time.

## Task 2: Aesthetic Mappings and Data Table

Suppose you are asked to recreate the Gapminder bubble chart using a computer software program. The first thing you would need to do is enter the data into a data table (e.g., spreadsheet). Consider the data table(s) you would use to create this graph.

1. Identify all the case attributes and their aesthetic mappings in the bubble chart.
2. Provide the column names and the data—in a data table(s)—for the following countries from 1907, 1982, and 2019: Algeria, Andorra, Bolivia, Brazil, Georgia, Japan, Netherlands, Somalia, South Africa, and the United States. (If you do this in a spreadsheet, provide a link to the spreadsheet, or copy-and-paste screenshots below.)
3. Write out a set of instructions that you could give to a different group, that would recreate the Gapminder bubble chart for the subset of countries and data in Question 2. These instructions should be complete and specific (e.g., detail about the aesthetic values used in the mappings to recreate the bubble chart).