Work Summary, by Team Member:
- Ryan Torrie
    - Slider & Front End Styling
    - Found data sets
    - Scale and Color Creation
    - Responsive Label Creation
    - Writeup
- Alexandra Ward
    - Filled Map
    - Debugging
    - Data Joins
    - Legend creation
- Yu Lizuka
    - Created Map
    - Cleaned and imported data
    - Parsed data
    - Debugged map fill function

Data Description

We found both of our datasets from the world bank, since they're the preeminent source of information on development indexes. One data set showed the percentage of a country's citizens that had access to birth control; this was done for every country in the world, by year, from 1990-2014. The other data set showed the percentage of a country's college students that were female, from the years 1970-2014 (we removed the first 20 years, since we had nothing to compare them to). Both datasets were sporadically filled: collecting this kind of data in developing countries is an involved process, so it makes sense that it wasn't reported annually. However, this was a challenge when visually representing the data, and is probably the greatest deficiency in our data sets.

We joined the datasets based on the countryId variable; however, certain country names were inconsistently truncated, which had to be fixed manually in the two datasets. We also had to reconcile inconsistent country naming on our world map, making the country name problem a time-consuming ordeal. We took the data to construct our world map from github.

Visual Mapping

In essence, here's how the data viz works: users select a given percentage with the first slider, and this selects a given percentage access to birth control for each country on earth. We then find the year that each country achieved that level of access (countries that haven't yet reached the selected percentage stay grey). The second slider adjusts the number of years

after the country reached the desired level of access to contraceptives to look at, since many of these phenomena take time to emerge. So if the first slider is set to 20%, and the second slider is set to 8, then the graph displays the percentage of college students who are female, by country, 8 years after each country achieved 20% access to birth control.

We displayed the percentage of college students who are female through a color map with custom thresholds for each color. Many developing nations have an incredibly low ratio of female to male college students, so a "color bucket" of 0-10% would've skipped over a broad swathe of diversity between developing nations (and progress made by that nation, year by year). As such, the colors change at small increments at first, and the increments grow larger with the percentage displayed. We also provided dynamic text that displays the selected birth control access percentage, and the number of years from that date at which we're analyzing enrollment percentages. Lastly, we created a moving "tool tip" that displayed a given country's enrollment percentage (for the selected year), when the mouse is hovered over that country.

The Story

The data shows a strong correlation between access to birth control within a country, and the percentage of that country's college students who are female. We're not supposing that this is a causal connection (it's likely spurious, seeing as both are proxy measures of development), but it's still interesting to see how family planning is strongly correlated with the educational achievement of a frequently marginalized sex.

However, we found another trend that suggests something else is at play. When moving the second slider to examine a country's enrollment ratios over the course of ten years, most countries show some sort of increase (they get darker). However, this rate of increase gets faster when the starting access to birth control rises; it seems that as countries make birth control more accessible, the *rate* at which their enrollment ratio increases *also* goes up. We don't have the requisite sociological knowledge to guess why this is, but it's interesting.