Lab 6: Bend Data

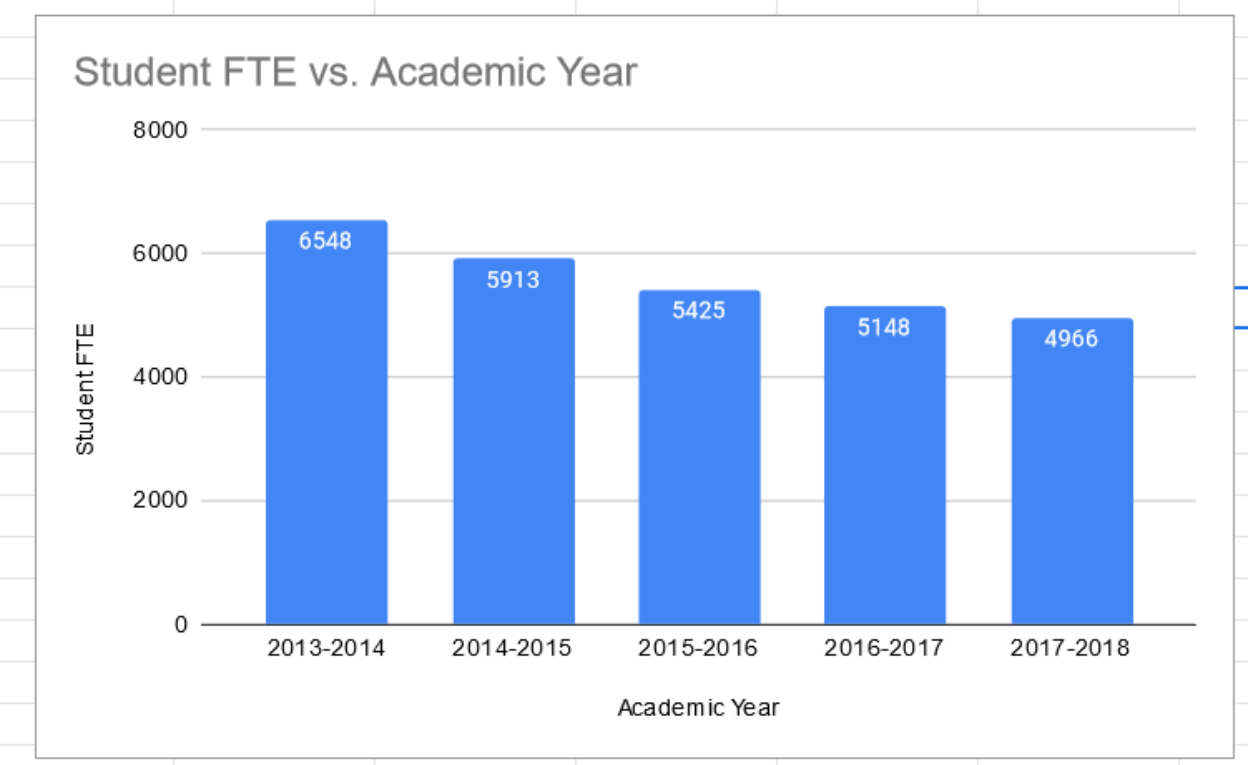
In this lab, you'll explore data related to Bend, both by creating and analyzing graphical displays and other data presentations.

1. **(5 points)** In 2016, household income in Bend was distributed as follows:

Household income	% of households
Less than $50,000	45.6%
$50,000-$100,000	31.7%
$100,000-$150,000	13.3%
$150,000-$200,000	4.2%
More than $200,000	5.2%

Create a pie chart to display this information. Make sure that your pie chart is titled and that each slice is clearly labeled as well (if you like, you can use the abbreviation "K", as in $50K rather than $50,000). For sure, use Google Sheets (like we did in the notes)! It does most of the graph creation for you; all you'll have to do is touch up the title. Once you have it, take a screen shot of it and include it as your answer to #1. And, definitely email if you get stuck (on this question or ***any*** of these)!

2. **(5 points)** Below is a chart that shows the decline in COCC's student population since shortly after the recession. Specifically, what you see here is full time equivalent (FTE)—a full-time student counts as one FTE, while a half-time student is 0.5 FTE. As you can see, our enrollment has been failing for a few years now.

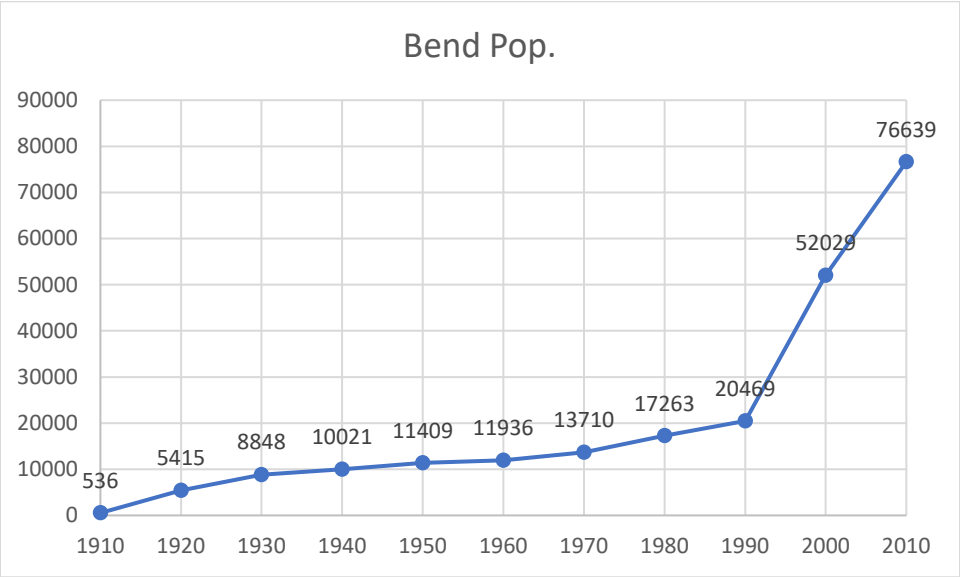


I've placed this data (with this graph) into this Google Sheet. Go ahead and open it up now!

Say that you're in a group that wants to put out messaging that the enrollment decline was ***extremely*** dramatic. Edit the chart is Sheets in a way that could mislead the reader into thinking the decline was ***much*** more dramatic than it actually was (as we've seen in class, this is most easily done by manipulating the vertical axis). I'll give you a hint: you'll want to double-click on the graph in Sheets and look under the "Customize" menu!

Once you've created that graph, take a screen shot of it and include it as your answer to this question!

3. The graph below shows the growth of Bend's population, according to the US Census.



a) **(2 points) (w)** How many times more populous was Bend in 1990 than it was in 1910?

b) **(2 points) (w)** How many times more populous was Bend in 2010 than it was in 1990?

c) **(2 points) (w) Find** the Average Rate Of Change (AROC) of the population from 1910 to 1990 (don't forget the unit!). If you need a refresher, look back at the hot tub homework!

d) **(2 points) (w) Find** the AROC of the population from 1990 to 2010 (unit, again!).

e) **(2 points) (w) If** the population had continued to grow at its 1910–1990 AROC from 1990 to 2010, then what would the population have been in 2020?

(it was actually about 99,000)

4. Finally, a look at population density.

   a) **(2 points) (w)** The area of the city of Bend is 33.27 square miles. Based on the 2010 population from the previous page, find Bend's population density in people per square mile.

   b) **(2 points) (w)** Portland has an area of 145 square miles and 2010 population of 583,776. Find Portland's population density in people per square mile.

   c) **(1 point)** About how many **times** more densely populated is Portland than Bend?