10.3 - COVID-19 Cases

The `indiana_covid-19_data_spring_2023.txt` data file contains weekly data about cases of COVID-19 in the state of Indiana.[1] The file has four columns of data separated by spaces. The first two columns are the first and last date of the 7-day period on that line. The next two columns are the number new cases, and new deaths due to the virus during that week.

Write a program that reads the contents of the file and calculates the total number of cases for each week by summing all of the new cases prior to and including that week. Then, using `matplotlib`, create a bar chart plotting the total cases for each week versus the week's start date. Include a title, and labels along the X and Y axes, as well as the tick marks. Set the width of each column to 7 so there will be no gaps between the bars. Note that the default column width is 0.8, but this can be changed through the `width` keyword argument when calling the `bar` function.

A sample of the resulting bar chart is shown below. Your chart should exactly match the sample, including bar widths, tick labels, axis labels, and title. You can ignore aliasing (stripes that vary as you zoom in and out) on the figure. Save the resulting figure as a PDF named `covid_19_cases_login.pdf` and save your Python program as `covid_19_cases_login.py`, where `login` is your Purdue login. Then submit both of them. You do not need to submit a screenshot for this exercise.

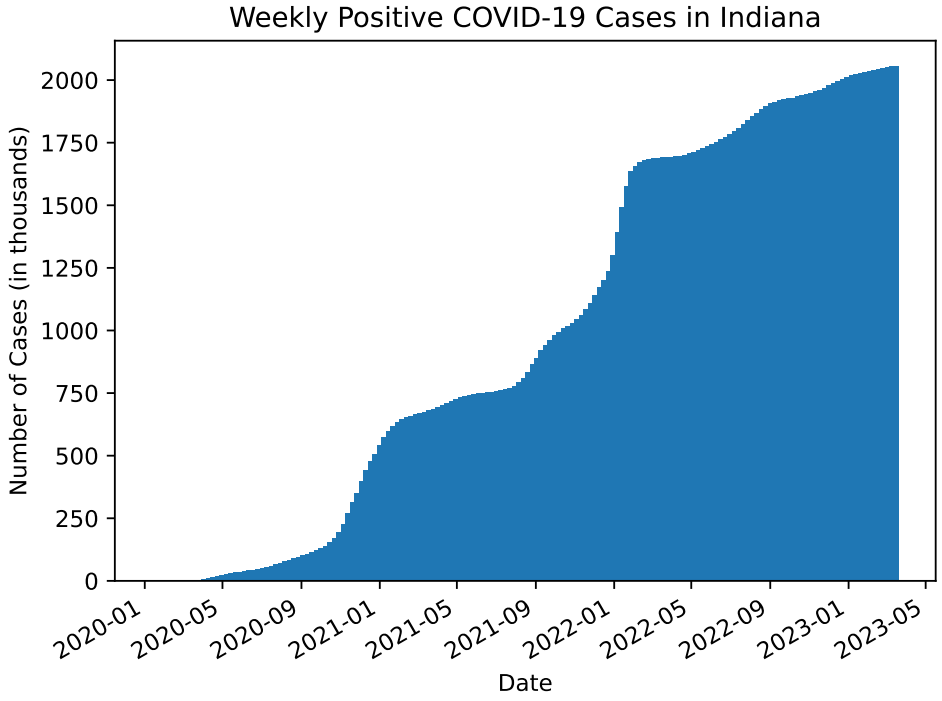

Figure 1: Sample COVID-19 cases bar chart for Exercise 10.3.

[1] source: Centers for Disease Control and Prevention, COVID-19 Response. Weekly United States COVID-19 Cases and Deaths by State (version date: March 26th, 2023).