*Don't say you don't have enough time. You have exactly the same number of hours per day that were given to Helen Keller, Pasteur, Michelangelo, Mother Teresa, Leonardo Da Vinci, Thomas Jefferson and Albert Einstein.* —H. Jackson Brown Jr.

Since August 2013, Jeff has spent 55,907 minutes on email in total; each CS1300 lecture takes 9 hours of preparation, while grant proposals take 11–21 hours of writing (averaging 14 hours). How do you spend your time?

In this assignment, you will **make an interactive visualization that shows data about daily activities both from your own days and Americans.**

# 1 Instructions

Before you begin, take a look at Activity Categories and sketch a pie chart estimating the amount of time in a day you think you spend in each of the 18 major categories.

Start tracking your time soon after this assignment is released: aim for 2 weeks of data. You can use whatever method you'd like for time tracking (even a spreadsheet is fine), but the suggested apps are Timesheet on Android, and Hours on iOS. Both support the features needed for this assignment, and allow exporting your data to comma-separated values (CSV). Use the same categories as the "Major Categories" but you are welcome to break them down further if you'd like. Check immediately when you start that you are able to export the data and it contains everything you need.

You will then be comparing yourself to data from the American Time Use Survey from 2014. The fields that are likely to be most relevant are TUSTARTTIM (Activity start time), TUSTOPTIME (Activity stop time), and TUTIER1CODE (Activity category number) in the activity data file.

Your goal is to design and create an interactive visualization that can show both your own data, and data from the American Time Use Survey. This can be in a combined visualization, or it can just load data from both sources separately. You can load one, some, the average, or all participants in the American Time Use Survey. Then explore the data using your visualization until you learn something surprising—something you did not know before (so it should not be something that appears in our Feb 25 readings). Ideas include: what demographic of people are you most similar to, what activities do you spend a disproportional amount of time compared to the average American, what's unusual about the times in your schedule or the consistency in your routine? If you don't learn anything surprising, change your visualization until you do.

For the Mar 8 checkpoint, come to class with a sketch of what your visualization will be, and your estimates of your own time spent. At this point, you should have finished the data wrangling (so that you have gotten data in the format you want from both your time tracking app and the American Time Use Survey).

The visualization should be interactive to allow some active exploration. Be creative! Don't make a static bar chart or pie chart.

## 2 Tips

- Sketch out your interactive visualization beforehand. When you are done, ask yourself if you can remove anything. What's the simplest thing you could make that would be interesting?

- This free D3 book may be helpful for making a visualization.

- You may use something like Processing or any other visualization library as an alternative.

- You do not have to track what task you are spending your time on (just the category of activity), but you may want to for your own sake.

- Start early! Data wrangling can take a lot of time; a good guideline is to take the number of hours you think this will take, and multiply it by 4.

- You are encouraged to ask assignment-related questions on Slack.

The suggested approach:

1. Use python to pre-process your time spent data from the Hours or Timesheet apps into a CSV format that contains exactly the data you need in your visualization.

2. Here's a starter file for index.html.

3. Put your data and index.html file into the same folder and run "python -m Simple-HTTPServer" in that folder, so you can go to http://localhost:8000 to load your index.html

4. Use d3.csv() in your index.html file to load the data (note that this requires a header row in the CSV data.

## 3 Show & Tell and Grading

Mar 17 and Mar 22 are the show & tell days. You only have to hand in a link (send it to @jeff on Slack), but you might want to make a few speaking notes for yourself. We'll randomly pick 9 students to share (4 minutes each) each day (so finish this assignment before the Mar 17 class). During your show & tell, answer these three questions: 1) What did you visualize? 2) How do you spend your days? 3) What was surprising? This assignment is worth 15 points.