It’s time to figure out what puts you in a better mood! Does doing yoga in the morning make you feel more relaxed later in the day? Does drinking a lemonade make you feel more energized? Does calling someone you love make you feel happier? This experiment will teach you more about yourself.

Usually we learn by hearing about “studies” from the news, articles, and other people. These studies are done on a sample population, usually through randomized controlled experiments. But everyone has different responses and sensitivities; those studies only show that there is some effect for some people. In this assignment, you will perform an N = 1 experiment (self-experiment) to see how changing your behavior affects you. It takes more than just tracking to reach a conclusive decision about the effect of something on you, so we will use a more scientific approach. You will go through a couple of iterations of the experiment, and you will keep track of the decision you are making and what your experience is like.

Here are some readings that might help you come up with experiment setup ideas and analysis methods:
- Lessons Learned from Two Cohorts of Personal Informatics Self-Experiments: [https://par.nsf.gov/servlets/purl/10050183](https://par.nsf.gov/servlets/purl/10050183)
- Roberts - The unreasonable effectiveness of my self-experimentation

**Timeline and Outline**

**Mar 4: Assignment described in class, handed out Mar 6**
- Think about what you want to track
- **Design and conduct your own experiment for the next 5 days:**
  - Track, collect, and analyze data on your own (without self-e), however you deem appropriate
  - **what would you like to test**
    - think of things with no carryover effect -- what can you do today to impact your mood that same day, for example;
    - make sure it’s something that you can do and test over spring break as well (so don’t track things like your productivity in class because you will have no classes during break, or your sleep if you will be traveling because you will be changing beds/timezones)
  - **How will you setup the experiment**
    - Do some background research before forming your hypothesis
    - Reflect on why this experiment is interesting to you specifically, and its value as an n-of-1 experiment.
  - **how will you track your data**
    - What kind of self-tracking devices (if you have any) will you use? Without self-tracking devices, how will you self-track?
  - **How will you analyze your experiment result**
  - **How will you ensure construct validity?**
  - Identify a few different potential sampling techniques that you could use, weight the pros and cons. Try to back it up with existing research.
Mar 11: midpoint
Time to revise and restart your own customized mood self-experiment starting today. During the in-class check-in today, where everyone will share what they are doing for their official customized experiment

- Based on your 5-day experiment, what went well in the study design, what can you change to improve it?

Self-E app
- The app has a list of experiments to try, but for this assignment, we are asking everyone to use the “Create your own experiment” option (first one on the list of experiments)
- You are welcome to customize anything you want of the experiment, but we recommend a minimum length of 6 days (3 days in each condition, e.g. 3 days doing yoga, and 3 days not doing yoga).
- You will be manually entering data in the app every day, and you will be able to see your data on the graph on the Home tab.
- Once you have enough days of data collected, Self-E will calculate a result for you such as “There is an 85% likelihood that doing yoga makes you feel 20% happier.”

Design your own mood self-experiment with the customized feature for a minimum of 6 days. Keep track of the following, in order to include them in the final report:

- variables you are tracking, hypotheses, ideas, what procedures you followed, what results were observed, and whether that was expected.
- what you customized, what you changed, what you setup, why did you do it that way, why did you do it for this many days, why that scale, how certain are you that the intervention will help you? (what % certain are you)

- You can do the experiment for as long as you want, up to two full weeks
- What did you change from the first time?
- What would you differently if you were to do this again

April 1:
Data analysis of the customized experiment with Self-E

- While the app calculates a result for you in one specific way, it might not be the best way to analyze the self-experiment data. For this assignment, do some background research on other ways to analyze the result and perform the analysis.
  - How would you calculate the confidence interval and the size of the intervention effect?
  - Defend your choice: why is this approach a scientifically valid way to analyze this type of data?
  - How does your result compare to the app’s result? Which one do you think is more accurate?

- We will provide a CSV file for the data your enter into the app for your own analysis.
Final report: Once the experiment is over for everyone, we will have a final in-class discussion about the experience overall. The write up is due, answering the italicized questions throughout this handout, including the following:

- What did you think of your iteration? Did it do better than the first one? What did you think of your result?, did you see an effect?
- Why and how would you iterate on this experiment again in the future?

Deliverables
For this assignment, you should keep a record and document everything you do: variables you are tracking, hypotheses, ideas, what procedures you followed, what results were observed, and whether that was expected. This will be part of what you hand in, and a reader should be able to reproduce your experiment. Your assignment hand-in may be used as part of a research paper based on our findings as a class (we’ll ask you for permission to use your report after the semester is over).

- Midpoint in-class check-in
- Final report (including the data analysis)
- Final in-class check-in: a short presentation answering the 3 Quantified Self questions: What did you do? How did you do it? What did you learn?

Grading (total of 18 points)
- Mid assignment in-class check-in (1 point)
- Clearly describing your assumptions, biases, validity (2 points)
- Answering ALL the questions in the final report (13 points total)
  - Report section #1 (the questions for the midpoint, 4 points)
  - Report section #2 (the data analysis, 4 points)
  - Report section #3 (the questions for the final, 5 points)
- Final in-class check-in (2 points)

Assignment written with Nediya Daskalova