# Assignment 3 - Abstraction Design

For this assignment, we're going to be building on the work we did during need finding last week! So partner up with the same partner, and work on the tasks below. I recommend reading all the steps before getting started.

1. Home in on a need revealed during last week's assignment that you think might be addressed by a custom language construct (set of constructs) or language abstraction (set of abstractions).
    a. Add to writeup (Part 1):
        i. Description of the need (2-3 sentences)
        ii. Description of evidence or insights from the need finding call that revealed the need (3-4 bullet points)
2. Based on what you learned about the participant's needs and preferences, brainstorm 3-4 language constructs or abstractions that you think might meet the user's needs.
    a. Add to writeup (Part 2):
        i. For each construct or abstraction:
            1. Example of using it (code snippet)
            2. Description of the construct or abstraction (1-2 sentences)
3. Pick the construct or abstraction that seems most suited to the user's needs, based on what you learned in the video call.
    a. Add to writeup (Part 3):
        i. Description of the construct or abstraction (1 paragraph)
        ii. 3-5 examples of using the construct or abstraction
        iii. Evidence from the need finding call that supports your design, explains why it suits the user's preferences and capabilities (3-4 bullet points)
        OR
        If your need finding call didn't reveal the kinds of insights that could guide your design, use the Cognitive Dimensions of Notation framework to discuss the pros and cons of your design (1 paragraph)
4. Discuss with your partner how you'd implement your construct or abstraction. Is it part of a library in an existing language? Is it part of a small domain-specific language of your own design? Is it an extension to a general-purpose language? You won't actually be implementing this construct or abstraction, so no need to go deep on this subject. But it can be interesting to see if your instincts about where to implement your creation line up with your partner's!
    a. Add to writeup (OPTIONAL Part 4):
        i. No need to write this one up if you don't want to! But if you had an interesting discussion, jot down a 2-3 sentence summary!

It's ok if you think the needs you revealed last week would be more naturally served by tool or environment innovations! For the purposes of this week, just carve off the parts that *could*

be served by language innovations.  Imagine your user is stuck in their current programming environment with just their current programming tools—how can you change the language, libraries, or APIs to help them out?