Problem solving process

With practice, you'll get faster at problem solving, but in the beginning it can be helpful to slow down the process and think through each step. We recommend using the following 8 steps to Problem Solving as a guide to help you get started.

1. **Restate the goal.** Reframe the end goal in your own words. Take note of *exactly* what you expect to happen.
2. **Consider the data.** What data types are you working with? Will you use parameters and arguments?
3. **Ask clarifying questions.** If anything is still unclear, pause for a moment to get clarification. You'll need to have a clear idea of both what you're hoping to accomplish and the data you're working with before you begin.
4. **Break it down.** Pseudocode the steps you might need to take. Write the steps in plain English, but you may use technical terms that reference data types or methods you think might be helpful.
5. **Research.** Is there anything in your pseudocode that you don't know how to do? Take note of that and use Google as a tool to find some things you might try.
6. **Start coding.** Use your pseudocode as a guide and start writing your code! Work in iterations, starting with the simplest possible output and slowly add layers of complexity.
7. **Stuck?** Go back to your pseudocode and rethink what you might be missing. You may need to reorder your steps to continue.
8. **Refactor.** After we've found one solution, it's always a good idea to go back and see if there's another simpler way to achieve the same result. Sometimes after solving a problem once, we are able to see it from a new perspective.