Feedback for your Diagnostic

The purpose of the Diagnostic was to help you self assess where you can improve. Every single person in this class has some area of the material where they could use some extra practice.

How can I learn using this tool?

This tool is going to help you check your answer. For each problem we include

1. Several common solutions
2. Comments which explain the solutions
3. The major concepts that the problem covers
4. Which readings and which lecture videos relate to the problem
5. We will help you look at your solution

After you finish you can still go back and try to solve the problems! Try changing your solution to make it work. Here is a link to a [Python Sandbox](https://edstem.org/us/courses/10000/python), and a [Karel Playground](https://edstem.org/us/courses/10000/karel" \t "_blank), where you can try out different solutions.

I didn't do as well as I wanted. Should I panic?

Absolutely not! It is normal on a diagnostic to not be able to solve problems. These problems are hard. More importantly they are learning opportunities. If you didn’t do as well as you would have liked you have a two step procedure. Step 1: make sure you know the underlying concepts (for example, using the i variable in a for loop). Then if you know the concepts but you weren’t able to come up with solutions, your strategy is more practice! Many people incorrectly think that they are not good at this. False! We all can code. You just need more experience.

A baby A.I. helped us with this task

Want to hear something interesting? Generating feedback that is able to help guide a student is a difficult task! Especially for a community service project as big as Code in Place, which has 12,000 students. It would take around 100 days to mark all of your diagnostics. Historically, folks have considered using AI (Artificial Intelligence) for this task, but past AI has been unable to read code -- coding is as hard as you think it is. We think we have an idea which will lead to a breakthrough in this problem. To try the idea out we developed a little code reading AI bot who thinks it is half way decent at looking at diagnostics. Our AI bot has observed a decade of exams from Stanford's CS106A class and learned to replicate the feedback that Stanford TAs would give. We had our helpful bot take a look at your solution.

To the best of our knowledge this is the very first time something like this has been attempted. As such you should think of it as a fun experiment. This technology could really help teachers in the future, but today is its very first day in the real world. It will make some mistakes. It is new after all. Just like you, this Diagnostic AI would like to improve. You can help make this AI smarter. Let it know when it gave helpful feedback, and when you think the AI might have made a mistake. Both humans and AIs make mistakes when proving feedback. Next to each piece of feedback is a thumbs up and thumbs down sign to tell us about the quality of the automated feedback.

Currently we've graded **Problems 1, 2, 3, and 5**. The AI needs some more time to finish grading Problem 4 for all students, so you won't see any feedback for Problem 4 yet.

Additionally, for **Problems 1 and 2**, the AI may sometimes highlight the parts of your code that it found most relevant to the feedback it gave.

Go through each piece of feedback to unlock the next question. Don't forget: the point of this diagnostic is to help you on your journey to become a great coder. Mistakes are an opportunity for growth and learning!