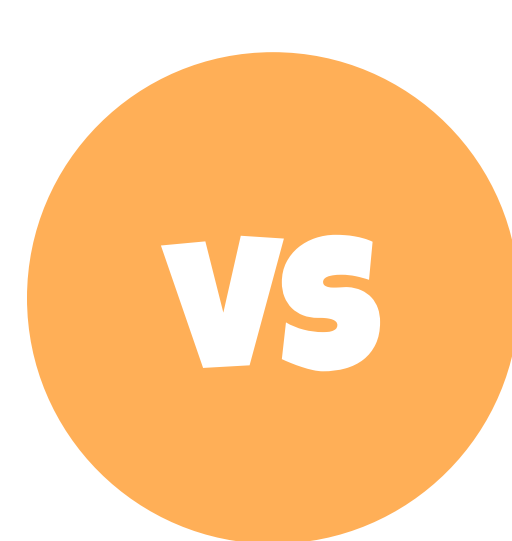


# THE ROLE OF TINKERING

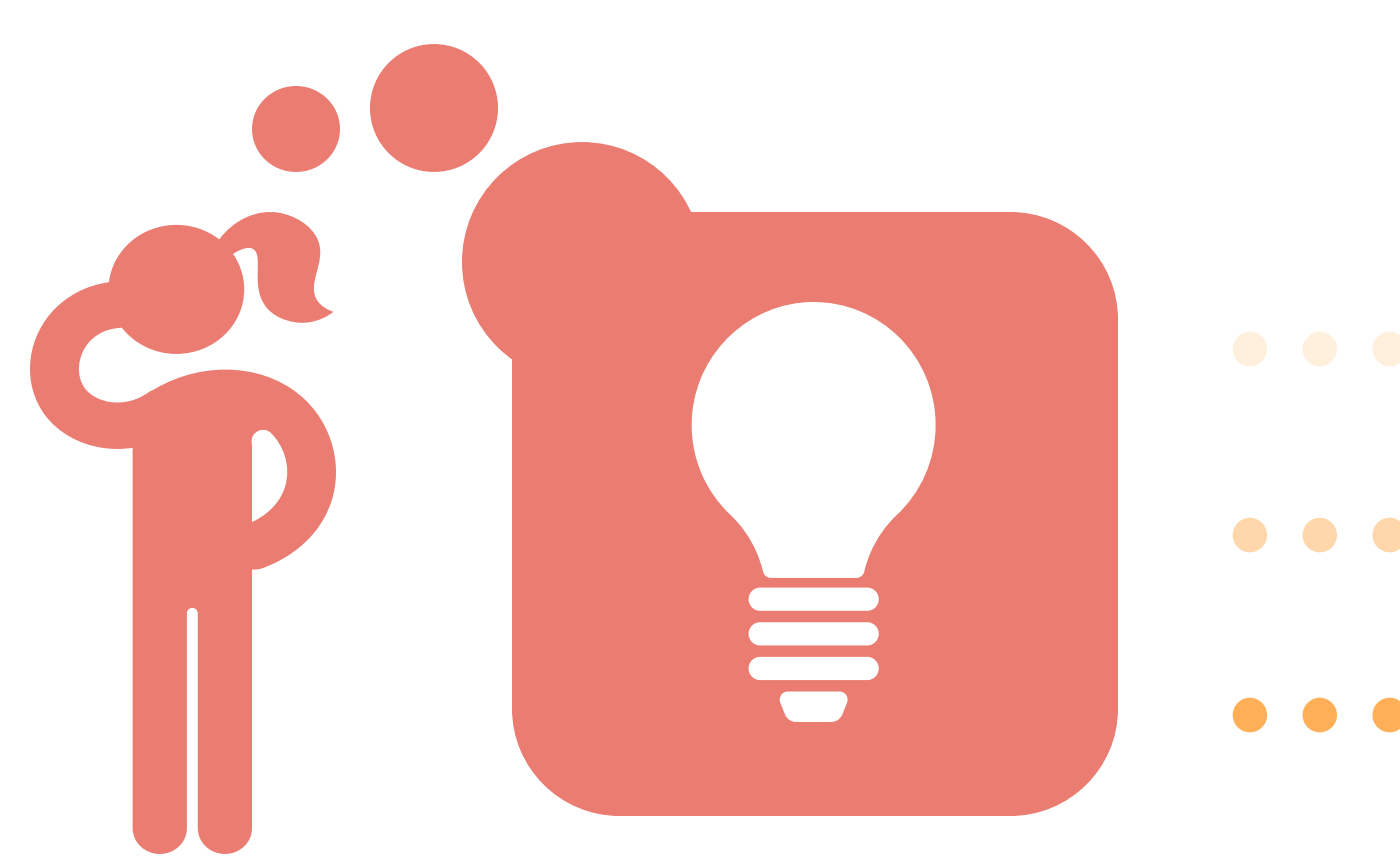
in End-User Programmer Success

**HAPHAZARD  
TRIAL AND  
ERROR**



**TESTING AN  
EDUCATED  
GUESS**

## TWO APPROACHES



**TRY SOMETHING...ANYTHING!**

**THINK THROUGH FIRST**

This practice was **less successful** and consisted of:

- Mistaken use of example code
- Haphazard deleting/adding code

This practice was **more successful** and consisted of participants trying out code to see what worked or did not work to learn what was possible

## AN EXAMPLE



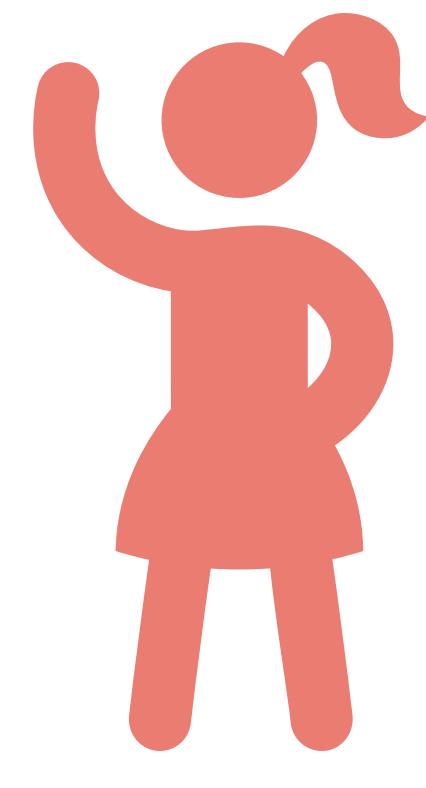
**TRIAL AND ERROR**

**EDUCATED GUESS**

In week 5, Victoria focused on the return value of an example method, which was unrelated to the bug in her code, and so she modified her method to return a list of accounts instead of a void method. Not only did this not fix the problem, but it also caused an error message about the method signature that she did not understand, causing her to spend additional time debugging to fix the bug she introduced.

In week 4, Victoria wrote a line of code that printed a message. In the call to the print method, Victoria appended the name of a Map variable, saying *I actually wonder what will happen* as she types in the variable name. When she runs the code, she sees that it prints out the key and values for each entry in the Map.

## A THIRD POSSIBILITY: MISSED OPPORTUNITIES TO TINKER



**VICTORIA,  
WEEK 2**

During the second week of the course, one of the practice exercises asked learners to add two numbers to a list of integers that had been created in existing code. Victoria first tried calling the List method “.add()” function with two numbers separated by commas; when this did not work, Victoria correctly separated the code into two function calls, each with one number in parentheses. However, she could not see that her code worked, because the list in the output showed the existing list elements followed by an ellipses to indicate that not all elements were showing. Although Victoria **suspected that this might be so** (*I'm not sure why it's not showing up and at first I was thinking, oh, the dot dot dot, maybe because it didn't fit, so maybe it's in there.*), she made a note that she wanted to ask why her code did not work instead of tinkering with the code to test her educated (and correct!) guess.

## REFERENCE

Lyon, L. A., Clayton, C., & Green, E. (2018, October). Tinkering in the Wild: What Leads to Success for Female End-User Programmers?. In *2018 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)* (pp. 125-129). IEEE.



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