

NumberSequence.java

Directions: Use a loop or set of loops to generate a number sequence. After printing the sequence, ask the user what the next number AND what the pattern is, then check the user's input and indicate if they are right or wrong. If wrong, tell what the correct answer is.

- Pseudocode and testing plan are required.
- Print at least 5 numbers in your sequence. You can use one operation or two operations to arrive at new numbers.
- Use Scanner for input. Be sure the prompt is very clear, so you can confidently receive correct answers; the user should not get frustrated if (s)he was correct, but wrote the answer just slightly differently from what you expected. Likewise, be clear about if the user is being correct or not, so the user is motivated to keep playing.
- Use a loop or set of loops to generate the number sequence and print it.
- The sequence must be randomly generated.
- No printing in main(). This should be a one-class, multi-method program.
- Give the user three tries to guess the next number in the sequence. Use a loop so you can get this three times. Break out of the loop once the guess is correct.
- Once the three guesses for the next number are done OR once the guess of the next number is correct, ask the user to tell you the pattern being used (see note about prompt, above).
- Read the guess about the pattern being used once (no second guesses).
- You may use .equalsIgnoreCase() to compare Strings, if you would like.
- Once you have finished, you if you did it with addition, save it as version2, then make it work for subtraction. Of if you used multiplication, save it as version2, then make it work for division.

Example, with user input in bold:

1, 3, 5, 7, 9, __

What's the next number? **10**

Try again. What's the next number? **11**

What's the pattern? **plus 2**

Incorrect. It was add two

← note that this is not a good prompt

← note that this should work better.

← "Correct" is what it should have said

Speak to your teacher about a possible extra credit option: Rewrite your code using recursion. Your code should execute the same way, but there will be NO loops. You may earn partial extra credit by replacing the loop that makes the number sequence with recursion, and using a loop for getting input. Please do not try the extra credit until you are done with the loop version of your program.