Consecutive Average – Problem Statement

- Create a console app that lets you input a sequence of integers in an infinite loop.
  - Each iteration will calculate and display the average of all the consecutive and positive numbers.
  - However, this special average must include no more than one smallest number of the consecutive sequence of numbers and no more than one largest number of the consecutive sequence of numbers.
  - That is, the sum cannot contain any repeated number that is either the largest or the smallest number.
- This basic requirement is actually more complicated to implement when you want to satisfy all the conditions. The solution is on the following pages.
- What are the trackers you really need to satisfy everything in the requirements?

Consecutive Average – Example

```
1
2
Consecutive Average = 3 / 2 = 1.50, Smallest = 1 (0 removed), Largest = 2 (0 removed)
3
Consecutive Average = 6 / 3 = 2.00, Smallest = 1 (0 removed), Largest = 3 (0 removed)
4
Consecutive Average = 10 / 4 = 2.50, Smallest = 1 (0 removed), Largest = 4 (0 removed)
1
2
Consecutive Average = 12 / 6 = 2.00, Smallest = 1 (1 removed), Largest = 4 (0 removed)
3
Consecutive Average = 15 / 7 = 2.14, Smallest = 1 (1 removed), Largest = 4 (0 removed)
4
Consecutive Average = 15 / 8 = 1.88, Smallest = 1 (1 removed), Largest = 4 (1 removed)
```

Consecutive Average – Example (cnt'd)

```
3
4
Consecutive Average = 18 / 10 = 1.80, Smallest = 1 (1 removed), Largest = 4 (2 removed)
5
Consecutive Average = 31 / 11 = 2.82, Smallest = 1 (1 removed), Largest = 5 (0 removed)
6
Consecutive Average = 37 / 12 = 3.08, Smallest = 1 (1 removed), Largest = 6 (0 removed)
10
10
10
5
6
Consecutive Average = 42 / 14 = 3.00, Smallest = 1 (1 removed), Largest = 6 (1 removed)
7
Consecutive Average = 55 / 15 = 3.67, Smallest = 1 (1 removed), Largest = 7 (0 removed)
```

Consecutive Average – Control Variables

- (A *positive integer is an integer that's bigger than* 0)
- **`Sum`**: the sum of all the consecutive positives
- **`Count`**: the count of these consecutive positives
- **`Smallest`**: the smallest number of the consecutive positives
- **`Largest`**: the largest number of the consecutive positives
- **`SmallestRemoves`**: The number of smallest numbers being removed since we only want one smallest number in the sum.
- **`LargestRemoves`**: The number of largest numbers being removed since we only want one largest number in the sum.
- **`Previous`**: The previous number that helps detect consecutiveness.
- **`Consecutive`**: Detect whether there is a consecutive sequence: used to set the first number in the consecutive sequence.

Consecutive Average – Pseudocodes

- Initialization of our trackers
- Start the Loop
- Input our number
- If our number is a consecutive number (by checking the previous number): *We will say* "largest/smallest" *to apply conditions for either.*
  - For the second number, we need same logic applied for the first number as well as the second number. For other consecutive numbers, that logic only needs to apply to the current number.
  - Logic
    - Basically, we need to add the number if it's not the same value as the old largest/smallest number.
    - If it's the largest or the smallest number, we need to keep track of the number of the repeated largest/smallest numbers to be removed. This is for reversing later on.
    - If it's larger/smaller than the largest/smallest number, then we set that number to be the largest/smallest number in addition to reverting the old largest/smallest number in the sum.