**Task 4: Custom Moving Average Function for NumPy Arrays**

**Objective:**

The goal of this task was to implement a custom moving average function for a NumPy array. The function should take a specified window size, calculate the average of elements in the array within that window, and return the result.

**Approach:**

1. **Input Handling**:
   * The function accepts a NumPy array arr and an integer window\_size as inputs. The function first checks if the window size is valid, i.e., positive and smaller than or equal to the array length. If not, it raises an error.
2. **Calculating the Moving Average**:
   * Instead of using advanced NumPy functions like np.convolve, I decided to manually loop through the array, calculate the sum of the elements in the current window, and then divide that sum by the window size to get the average.
   * The loop slides the window one element at a time from the start to the end of the array, calculating the average for each window.
3. **Output**:
   * The result is a new NumPy array containing the moving averages for each valid window in the input array.

In the example, the input array and window is:



The result of it, is:

