

**Solution:**

In this problem, we are tasked with finding triplets  $(i, j, k)$  where  $i < j < k$  and elements  $a[i]$ ,  $a[j]$ ,  $a[k]$  in the array satisfy  $a[j] - a[i] = j - i$  and  $a[k] - a[j] = k - j$ . Simplifying these conditions, we derive  $a[i] - i = a[j] - j$  and  $a[j] - j = a[k] - k$ . The solution involves counting occurrences of  $a[m] - m$  for all elements  $m$  in the array. For each unique value of  $a[m] - m$  that appears at least three times, we calculate the number of valid triplets using the combination formula  $C(\text{count}, 3)$ .