

Problem 4: Dutch National Flag Problem

For this problem we do a single while loop adding $O(n)$ time complexity. By switching the 0s and 2s because the 1s will automatically fall into their correct places.

Time and Space complexity

Time $\rightarrow O(n)$, because we have a single while loop

Space $\rightarrow O(1)$, because we return the same array with it's elements sorted