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FIT3155 Assignment 1

Question_1

For this question 1, I used two z _algorithms one is a normal z algorithm one is a reverse z algorithm which will make an O(2n) time complexity.

For my function, it takes in a z suffix _ array, a full string for the z algorithm, and a string of the pattern.

So first, the z suffix array will be saved for the use of the normal z algorithm to save place. Before that by creating some space to save the length of the total string and the space before the terminal then if my iteration is at the length of the pattern + 1 which means after the terminal sign I will check if the current z value is the length of the pattern or if the current z value plus the z value of the current + length of the pattern -1 for the index to find the suffix if this two value adds up has a subtract of 2 which mean there are 2 mismatches between prefix and suffix then will go into a check statement to check if there is a transposition.

For the usage of the future z value in the z array since the value of the normal z value will overwrite the suffix array but the usage of the suffix array will not be overwritten as we will check it before overwriting it. And this will save up some space for not creating a new array to store the z value.