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7 March 2023

Programming Challenges

Assignment 3

<https://forms.office.com/r/dbbt12Z00W>

Pattern Find - Standard Functions:

The time complexity of this program is O(T\*(N\*M)).

<https://www.spoj.com/problems/NAJPF/>

Pattern Find - KMP or Boyer-Moore:

The time complexity of this program is O(T\*(N+M)).

<https://www.spoj.com/problems/NAJPF/>   


Ada and Jobs:

For this program I decided to use a hashmap with two functions. I had the main function and then a search function. The time complexity of this program is O(M\*N).

<https://www.spoj.com/problems/ADAJOBS/>

Easy Sorting – Merge Sort:

For this program, I chose to use three functions. I had the main function, mergeSort function, and merge function. All the main function did was get the lines and call mergeSort. MergeSort then recursively called itself to split down further and further until it could call the merge function to build itself a fully sorted array. After merge was called, it would then take each array and compare both sides of the arrays to find out where to place the current item. The time complexity of this program is O(n log n).