

Implement strStr()

Approach 1: Brute Force ($O(n*m)$):

- Iterate through haystack (length n)
- For each position i , check if substring haystack $[i:i+m]$ equals needle.
- Return i if found; else return -1 .

Approach 2: KMP Algorithm ($O(n+m)$):

- Preprocess needle to create LPS array (Longest Prefix Suffix).
- Use it to skip unnecessary comparisons when searching in haystack.
- Efficient for large inputs.

Optimized Approach (KMP):

- Optimal $O(n+m)$ solution:
 - Build LPS array for needle.
 - Use it to avoid rechecking characters.