1. Find substring using z algorithm
   1. <https://leetcode.com/problems/implement-strstr/>

void createzarray(string s, int z[])

{

int n = s.length();

int l = 0;

int r = 0;

z[0] = 1;

for(int k=1;k<n;k++)

{

if(k > r)

{

l = r = k;

while(s[r] == s[r-l])

r++;

r--;

z[k] = r - l + 1;

}

else

{

if(k + z[k-l] <= r)

z[k] = z[k-l];

else

{

l = k;

while(s[r] == s[r-l])

r++;

r--;

z[k] = r - l + 1;

}

}

}

}

1. <https://practice.geeksforgeeks.org/problems/count-occurences-of-anagrams/0>
2. Repeated substring pattern
   1. <https://leetcode.com/problems/repeated-substring-pattern/submissions/>
   2. If any string is periodic then there exists a substring by repeating which we can build a given string.

A string is periodic if by right shifting k char we can rebuild the same string. → k is a length of repeating substring.

Eg. ababab → right shift 2 times

Abcabc → right shift 3 times

To check all possible right shifts of a string check whether s is present in (s + s)[1:len-1]. The index is the k length of rep substring.

012345 6789

ababab → ababab|ababab k = 2

1. <https://leetcode.com/problems/decoded-string-at-index/submissions/>
2. <https://leetcode.com/problems/decode-string/>