

Find the First occurrence in a string

28. Find the Index of the First Occurrence in a String

Easy

3911

215

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Given two strings `needle` and `haystack`, return the index of the first occurrence of `needle` in `haystack`, or `-1` if `needle` is not part of `haystack`.

Example 1:

Input: `haystack = "sadbutsad"`, `needle = "sad"`

Output: `0`

Explanation: "sad" occurs at index 0 and 6.

The first occurrence is at index 0, so we return 0.

$m = 9 - 1 = 8$ $n = 3 - 1 \Rightarrow 2$

$s1 = \text{"sadbutsad"}$ $s2 = \text{"sad"}$

0 1 2 3 4 5 6 7 8 0 1 2

```
for (i: 0 → m)
  for (j: 0 → n)
    if (s1[i+j] != s2[j])
      break;
    if (j == n) return i;

return -1
```

$s1 = \text{"sadbutsad"}$ $s2 = \text{"sad"}$

0 1 2 3 4 5 6 7 8 0 1 2

$i = 0$

$j = 0$

$(s1[0+0] != s2[0]) \text{ False}$

$j = 1$

$(s1[0+1] != s2[1]) \text{ False}$

$j = 2 (s1[0+2] = s2[2]) \text{ False}$

since $(j == n)$ return $i // 0$

Code

```
class Solution {
public:
    int strStr(string s1, string s2) {
        int m=s1.size();
        int n=s2.size();
        for(int i=0;i<=m-n;i++){
            for(int j=0;j<n;j++){
                if(s1[i+j] !=s2[j]){
                    break;
                }
                if(j==n-1){
                    return i;
                }
            }
        }
        return -1;
    }
};
```