Count Words

str = " This _ _ _ is _ a _ _ sentence " ;

curr

Condition:-

if curr char is space
&&
previous char is not a space

Count words = ~~0~~ ~~1~~ ~~2~~ 3

ans = 3+1 = 4

psudo code

1) traverse a loop

1.1) curr = arr.charAt(i);

prev = arr.charAt(i-1);

if curr == ' ' && prev != ' '

count++;

return count + 1;

Code

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    String str = scn.nextLine();

    System.out.println(countWords(str));
}
public static int countWords(String str) {
    int count = 0;
    for (int i = 1; i < str.length(); i++) {
        char curr = str.charAt(i);
        char prev = str.charAt(i - 1);
        if ( curr == ' ' && prev != ' ' ) {
            count++;
        }
    }
    return count + 1;
}
```

O(str.length())

T.C = O(n)

where, n is length of string

Find Unique (no. should be present atleast once)

str = "5252019992";

0 1 2 3 4 5 6 7 8 9

i

ans = 5

freq =

0	1	2	3	4	5	6	7	8	9
1	1	3	0	0	2	0	0	0	3

ans = 5

i = 0, ch = '5'

idx = ch - '0' = 5

Code

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    String str = scn.nextLine();

    System.out.println(uniqueFreq(str));
}
public static int uniqueFreq(String str) {
    int[] freq = new int[10];
    for (int i = 0; i < str.length(); i++) {
        char ch = str.charAt(i);
        int idx = ch - '0';
        freq[idx]++;
    }

    int count = 0;
    for (int i = 0; i < 10; i++) {
        if ( freq[i] > 0 ) {
            count++;
        }
    }
    return count;
}
```

n ←

10 ←

T.C = O(n)

n = length of str

Locate the Target String

(Imp)

str = "gesterstab" ;
0 1 2 3 4 5 6 7 8 9

target = "sta" ;
0 1 2

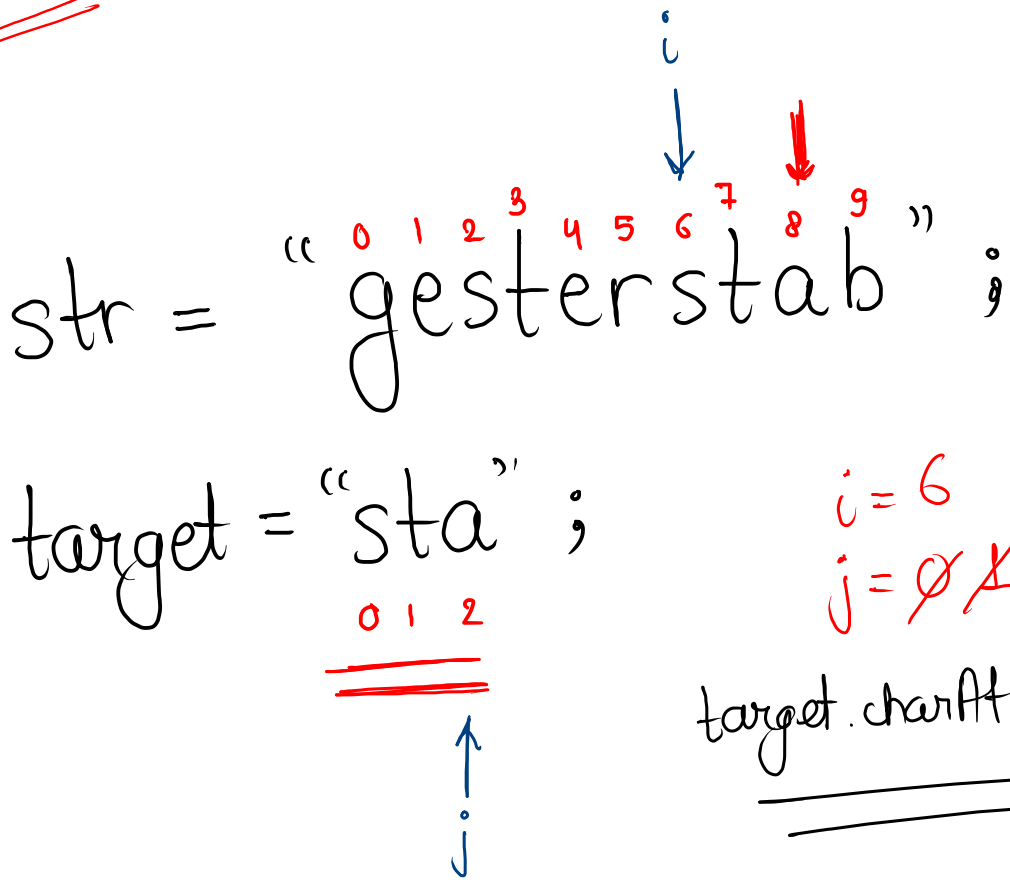
ans = 6

brute force / naive approch

generate all substrings

g	e	s	t	e	r	s
ge	es	st	te	er	rs	st
ges	est	ste	ter	ers	rst	sta
gest	este	ster	ters	erst	rsta	
geste	ester	sters	terst	ersta	rstab	
gester	esters	sterst	tersta	erstab		
gesters	esterst	stersta	terstab			
gesterst	estersta	sterstab				
gestersta	esterstab					
gesterstab						

dry run



i = 6

j = 0 ✗ 2

target.charAt(j) == str.charAt(i+j)

psudo code

1) make 2 pointers

2) loop until i < str.len

2.1) if char at j of target and char at (i+j) of str are unequal

break

2.2) if j == target.length

return i

return -1 ;

Code

T.C = O(str * tar)

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    String str = scn.nextLine();
    String tar = scn.nextLine();

    System.out.println(locateTarget(str, tar));
}
public static int locateTarget(String str, String tar) {
    for (int i = 0; i <= str.length() - tar.length(); i++) {
        for (int j = 0; j < tar.length(); j++) {
            if ( tar.charAt(j) != str.charAt(i + j) ) {
                break;
            }
            if ( j == tar.length() - 1 ) {
                return i;
            }
        }
    }
    return -1;
}
```