Long Pressed Keyword (LC - 925)

alex
allex
} true.

true
{ alleex
allleeexx

alex
apex
} false

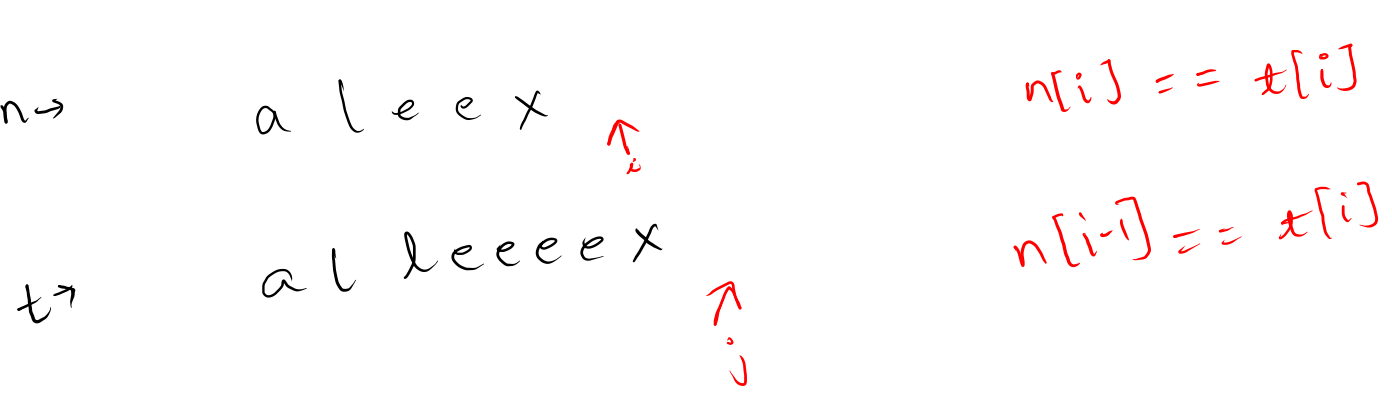
name → allex
typed → alexx
} false

false
{ alex
alex

n → alex
t → allexx
} true

false
n → alexf
t → alex

t.length() < n.length()
→ false


n→
a l e e x
i
t→
a l l e e e e x
j
n[i] == t[i]
n[i-1] == t[i]

a le x

a l l f e x

→ n[i] == t[j] → i++ j++

→ n[i-1] == t[j] → j++

else → false

false.

n→ a l e x x z

i

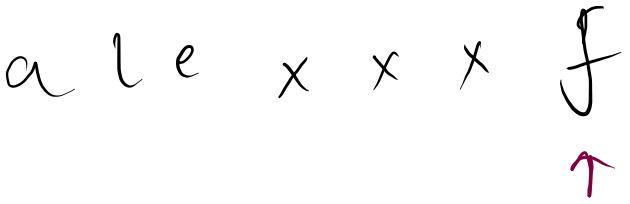
t→ a l e x x x

j

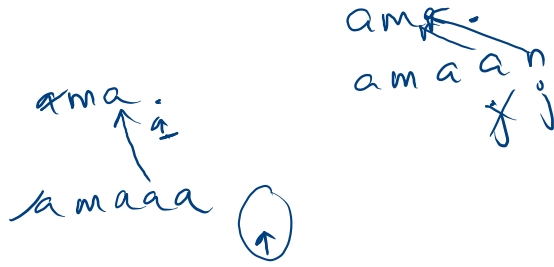
i → remaining

j → end


alex


alexxxf

```java
public class Solution {

    public static boolean isLongPressed(String n, String t){ //n->""  t -> ""
        if(t.length() < n.length()){
            return false;
        }
        // if(n.charAt(0) != t.charAt(0)){
        //     return false;
        // }
        int i = 0;
        int j = 0;

        while(i < n.length() && j < t.length()){
            if(n.charAt(i) == t.charAt(j)){
                i++;
                j++;
            } else if(i > 0 && n.charAt(i-1) == t.charAt(j)){
                j++;
            } else{
                return false;
            }
        }

        while( j < t.length()){
            if(i > 0 && n.charAt(i-1) == t.charAt(j)){
                j++;
            }else{
                return false;
            }
        }

        if(i < n.length()){
            return false;
        }
        return true;
    }

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        String n = scn.next();
        String t = scn.next();
        System.out.println(isLongPressed(n,t));

    }
```



Binary Search.

* sorted → array/data/ range

$x = 55$

10	20	30	40	50	60	70	80
0	1	2	3	4	5	6	7

i

j

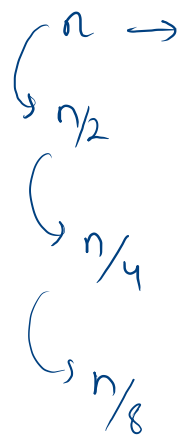
m

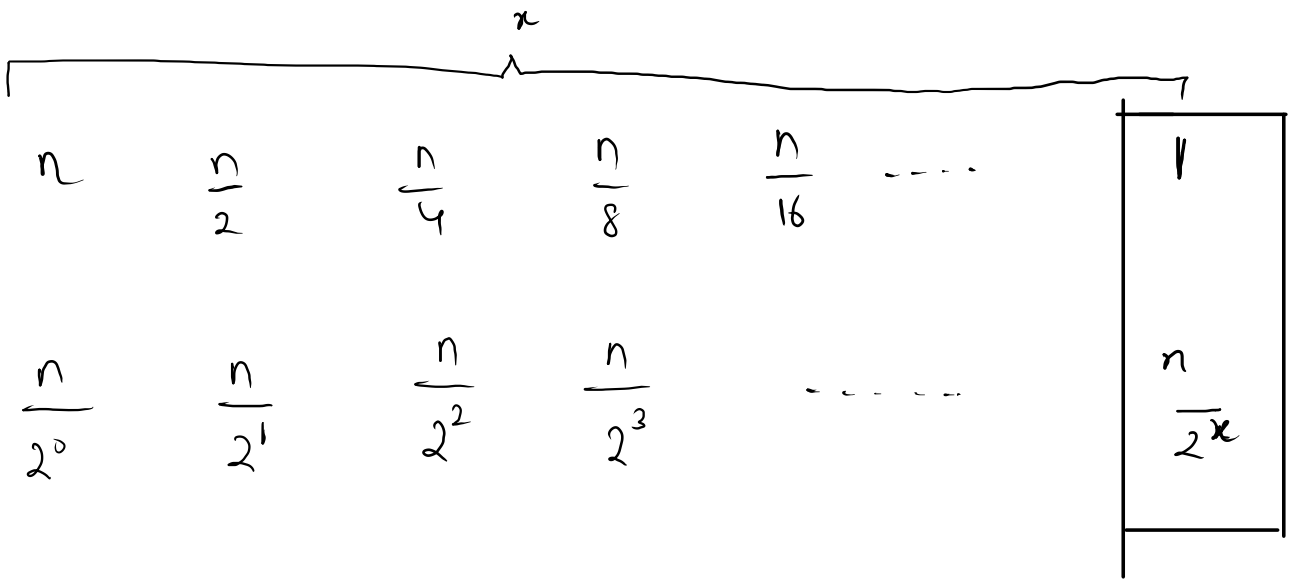
$i \leq j$ → not valid.

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static int binarySearch(int [] A, int x){
        int i = 0;                  //i, j and m are index
        int j = A.length-1;
        while(i <= j){
            int m = (i + j)/2;
            if(x == A[m]){
                return m;
            }
            else if(x > A[m]){    //right
                i = m + 1;
            }else{                // x < A[m] -> left
                j = m - 1;
            }
        }
        return -1;
    }

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        int [] A = new int[n];
        for(int i = 0; i < n; i++){
            A[i] = scn.nextInt();
        }
        int x = scn.nextInt();
        int ans = binarySearch(A, x);
        System.out.println(ans);
    }
}
```

x = 50

10	20	30	40	50	60	70	80
0	1	2	3	4	5	6	7





$$1 = \frac{n}{2^x} \Rightarrow 2^x = n$$

$$\log_2 2^x = \log_2 n$$

$$x \log_2 2^1 = \log_2 n$$

$$\boxed{x = \log_2 n}$$

$x \rightarrow \log n$

iter