



The district administration wanted to identify all lorries in which sum of the digits in the registration number is 47. Can you help them in this task by writing a program to find the sum of the digits in a given string?



Notes:

Assume that vehicle registration number is a string that consists of both letters and digits.
The maximum length of the string is 50.

Input Format:

Input consists of a string.

Output Format:

Output consists of an integer that corresponds to the sum of the digits in a string.

Sample Input :

TN47S2378

Sample Output :

31

```
#include<stdio.h>
int main()
{
    char s[100],a[10]={'0','1','2','3','4','5','6','7','8','9'};
    int i,j,sum=0;
    scanf("%s",s);
    for(i=0;s[i]!='\0';i++)
    {
        for(j=0;j<10;j++)
        {
            if(s[i]==a[j])
            {
                sum=sum+j;
                break;
            }
        }
    }
    printf("%d",sum);
    return 0;
}
```

Problem-2

Sand Quarry II

Sand Quarry II



At the core of it, “Joker” is about activism and poverty – and how we have trained ourselves to dismiss activists and the poor to enjoy our hypocritical lives. And from this core, the story spins out to broach issues ranging from prohibition and caste to environment.

The movie begins at Pappireddipatti in Dharmapuri district, with a perfect summation of rural Tamil Nadu. Trucks belonging to the mafia are smuggling fresh, wet sand from the river-bed in broad daylight.



Mannar Mannan, the hero of the movie is killed by a sand-lorry. Even in death, the system does not give him a choice. He is hit by a sand lorry in which the sum of the numbers in the vehicle registration number is 4700.



The district administration wanted to identify all lorries in which sum of the digits in the registration number is 4700. Can you help them in this task by writing a program to calculate sum of all numbers present in the string?



Notes:

Assume that vehicle registration number is a string that consists of both letters and digits. The maximum length of the string is 50.

Input Format:

Input consists of a string.

Output Format:

Output consists of an integer that corresponds to the sum of the digits in a string.

Sample Input :

TN47S2378

Sample Output :

2425

Sample Input :

ab23er45tl

Sample Output :

69

```
#include<stdio.h>
#include<string.h>
int main()
{
    int i,n,l,s=0,t=0;
    char a[50];
    scanf("%s",a);
    n=strlen(a);
    for(i=0;i<n;i++)
    {
        if(a[i]>=48&&a[i]<=57&&a[i+1]>=48&&a[i+1]<=57)
        {
            l=a[i]-48;
            s=s+l;
            s=s*10;
        }
        else if(a[i]>=48&&a[i]<=57)
        {
```

```

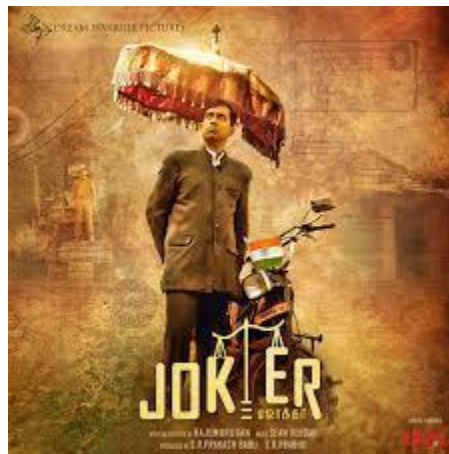
        l=a[i]-48;
        s=s+l;
        t=t+s;
        s=0;
    }
}
printf("%d",t);
return 0;
}

```

Problem-3

Naming 1

Naming 1



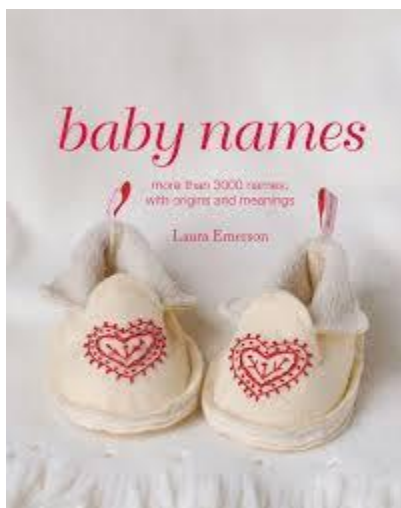
The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.



Mannan falls in love with Malliga, courts her and wins her over and they get married. Soon , they are expecting a child and they are very excited about it.



Astrologer



ARIES	Chu, Che, Cho, La, Li, Lu, Le, Lo, A
TAURUS	E, V, Ai, O, Vaa, Vi, Vu, Ve, Vo
GEMINI	Ka, Ki, Ku, Gh, Chh, Ke, Ko, Ha
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PISCES	Di, Du, Thha, Jha, Jya, De, Do, ch, Chi

As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.

Coding Interview Question



a a r d v a r k

**Find 1st non-repeating character
in a string**

The astrologer tells them that it is good to name their kid such that the 1st non-repeating character in the name is 'm'.

Can you help them in shortlisting the names by writing a program to find the first non-repeating character in a given string?



Input Format:

Input consists of a string that consists of only lower case characters.

Output Format:

Output consists of a single character. It corresponds to the first non-repeating character in the given string. If there is no such character, print '#'

Sample Input :

seemans

Sample Output :

m

Sample Input :

nannan

Sample Output :

#

```
#include<stdio.h>
#include<string.h>
int main()
{
    char s[100];
    int i,j,len,flag;
    scanf("%s",s);
    len=strlen(s);
    for(i=0;i<len;i++)
    {
        flag=0;
        for(j=0;j<len;j++)
        {
            if(s[i]==s[j] && i!=j)
            {
                flag=1;
                break;
            }
        }
        if(flag==0)
```



```

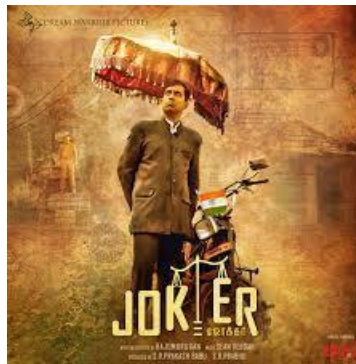
    {
        printf("%c",s[i]);
        break;
    }
}
if(flag==1)
printf("#");
return 0;
}

```

Problem-4

Naming 2

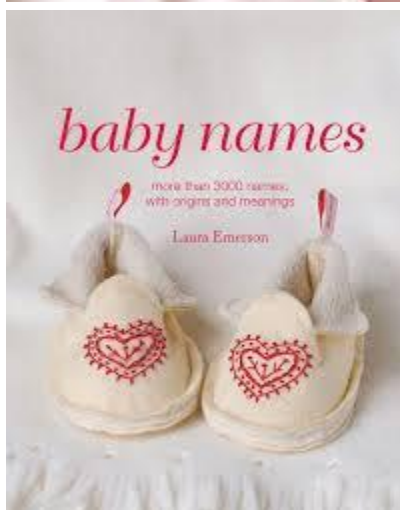
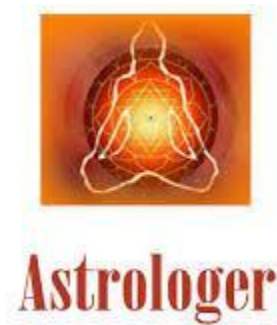
Naming 2



The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.

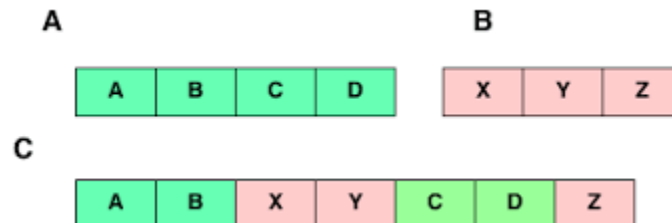


Mannan falls in love with Malliga, courts her and wins her over and they get married. Soon , they are expecting a child and they are very excited about it.



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As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.



The astrologer tells them that it is good to name their kid such that the kid's name is an interleaving of the mom's name and dad's name.

Can you help them in shortlisting the names by writing a program to find whether string C is an interleaving of strings A and B?



[Hint :

C is said to be interleaving A and B, if it contains all characters of A and B and order of all characters in individual strings is preserved.

String A = "AB", String B = "CD"

The possible interleavings of strings A and B are

ABCD
ACBD
ACDB
CABD
CADB
CDAB

]

Input Format:

Input consists of 3 strings.

The first string corresponds to A.

The second string corresponds to B.

The third string corresponds to C.

Assume that there are no common characters between strings A and B.

All input strings consist of only upper case alphabets.

The maximum length of the strings is 100.

Output Format:

Output consists of a string that is either "YES" or "NO".

Sample Input :

AB

CD

ACBD

Sample Output :

YES

Sample Input :

AB

CD

BCAD

Sample Output :

NO

```
#include<stdio.h>
#include<string.h>
```

```

int main()
{
    int c=0,i,j;
    char s[100],t[100],u[100];
    scanf("%s",s);
    scanf("%s",t);
    scanf("%s",u);

    if((u[0]==s[0]||u[0]==t[0])&&(u[strlen(u)-1]==s[strlen(s)-1]||t[strlen(t)-1]==u[
strlen(u)-1])){

        strcat(s,t);

        for(i=0;i<strlen(s);i++)
        {

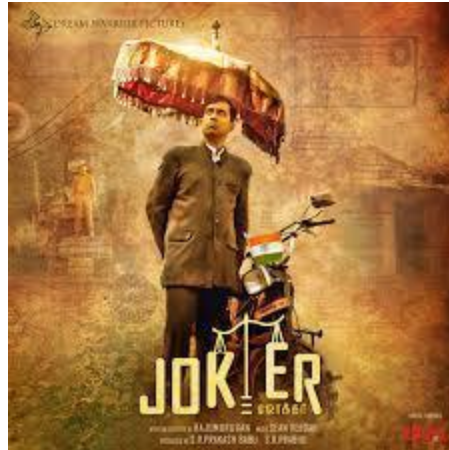
            for(j=0;j<strlen(u);j++)
            {

                if(s[i]==u[j])
                {
                    c++;
                    break;
                }
            }
        }
        if(c==strlen(u)&&strlen(s)==strlen(u))
        printf("YES");
        else
        printf("NO");
        return 0;
    }
}

```

Problem-5

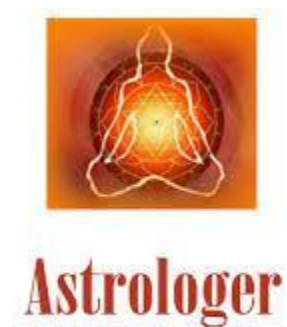
Naming 3

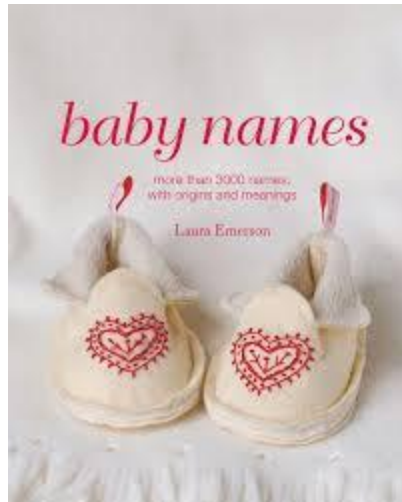


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As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.

The astrologer tells them that it is good to name their kid such that the kid's name is the smallest substring in dad's name containing all characters of mom's name efficiently.



Can you help them in shortlisting the names by writing a program to find the smallest substring in string1 containing all characters of string2 efficiently.

[Hint :
i.e Find the smallest window in string 1 containing all characters of string 2]
]

**Input Format:**

Input consists of 2 strings.

The first string corresponds to String 1

The second string corresponds to String 2.

The maximum length of the strings is 100.

Output Format:

Output consists of a string.

Assume that it is always possible to find the desired string.

Sample Input :

thandapani

ana

Sample Output :

anda

Sample Input :

gokulkumar

kom

Sample Output :

okulkum

```
a=input()
x=input()
h=[]
v=[]
for i in a:
    h.append(i)

for i in x:
    v.append(i)
y=[]
f=len(v)
for i in range(len(h)):
    for j in range(f):

        if h[i]==v[j]:
            y.append(i)
            del(v[j])
            f=f-1
            break
```

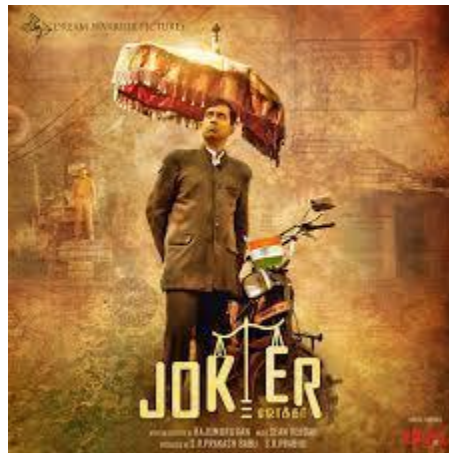


```
for i in range(y[0],y[len(y)-1]+1):  
    print(h[i],end="")
```

Problem-6

Naming 4

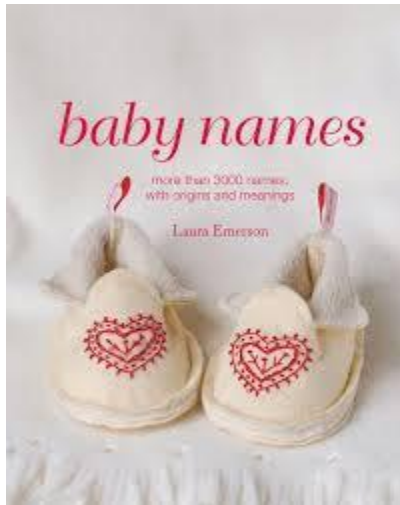
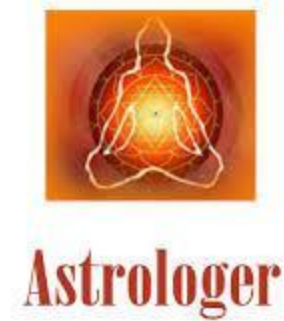
Naming 4



The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.



Mannan falls in love with Malliga, courts her and wins her over and they get married. Soon , they are expecting a child and they are very excited about it.



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PISCES	Di, Du, Thha, Jha, Jya, De, Do, ch, Chi

As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.

The astrologer tells them that it is good to name their kid such that the kid's name is a pangram.

a pangram:
amazingly few discotheques provide jukeboxes.



A pangram is a string that consists of all English alphabets.

Can you help them in shortlisting the names by writing a program to find whether a given string is a pangram or not?



Input Format:

Input consists of a string that consists of only lower case characters.

Output Format:

Output consists of a string that is either “YES” or “NO”

Sample Input 1 :

thefiveboxingwizardsjumpquickly

Sample Output 1 :

YES

Sample Input 2 :

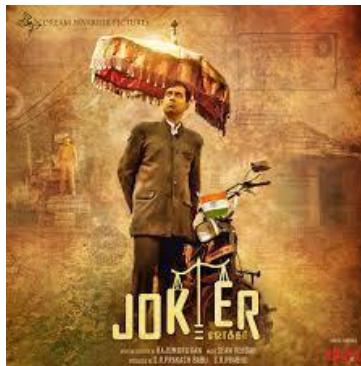
iamanengineeringstudent

Sample Output 2:

NO

```
x=input()
y="abcdefghijklmnopqrstuvwxyz"
k=1
for i in y:
    if i not in x:
        print("NO")
        k=0
        break

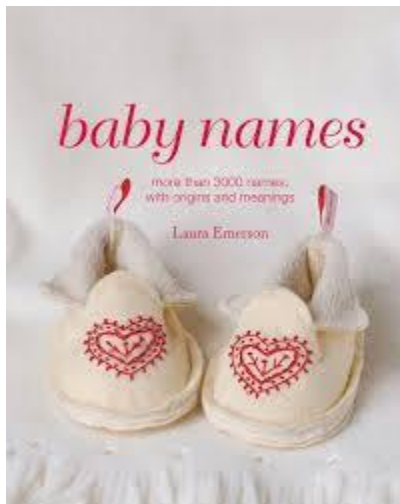
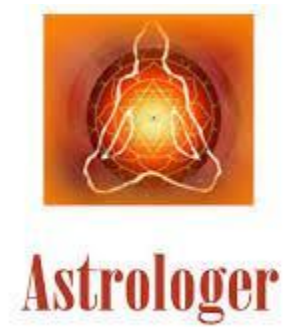
if k:
    print("YES")
```

Problem-7**Naming 5****Naming 5**

The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.



Mannan falls in love with Malliga, courts her and wins her over and they get married. Soon , they are expecting a child and they are very excited about it.



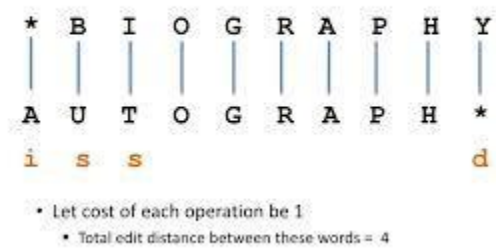
ARIES	Chu, Che, Cho, La, Li, Lu, Le, Lo, A
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PISCES	Di, Du, Thha, Jha, Jya, De, Do, ch, Chi

They were exhilarated to know that Malliga is carrying twins.



As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.

Minimum Edit Distance (Example)



The astrologer tells them that it is good to name the twins in such a way that the edit distance between the 2 names is 1.

Can you help them in shortlisting the names by writing a program to find whether the edit distance between strings A and B is 1?



[Hint :

An edit between two strings is one of the following changes.

1. Add a character
2. Delete a character
3. Change a character

Example :

String A: amphi

String B : amph

]

Input Format:

Input consists of 2 strings.

The first string corresponds to A.

The second string corresponds to B.

The maximum length of the strings is 100.

Output Format:

Output consists of a string that is either "YES" or "NO".

Sample Input :

amphi

amph

Sample Output :

YES

Sample Input :

amphi

ambhi

Sample Output :

YES

Sample Input :

amphi

anbhi

Sample Output :

NO

```
#include<stdio.h>
```

```
#include<string.h>
```

```
#include<stdlib.h>
```

```
int main()
```

```
{
```

```
    int i,c=0;
```

```
    char s[100],t[100];
```

```
    scanf("%s%s",s,t);
```

```
    if(s[0]!=t[0])
```

```
        c++;
```

```
    for(i=1;s[i]!='\0'&&t[i]!='\0';i++)
```

```
    {
```

```
        if(s[i]!=t[i]&&(s[i]!=t[i-1]||s[i]!=t[i+1]))
```

```
            {c++;}
```

```
        if(c==2)break;
```

```
    }
```

```
    if(c==2||abs(strlen(s)-strlen(t))>=2)
```

```
        printf("NO");
```

```
    else
```

```
        printf("YES");
```

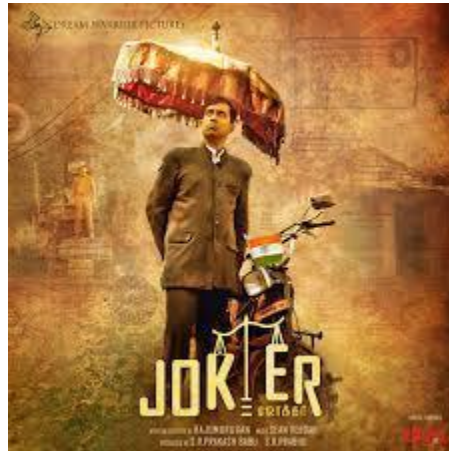
```
    return 0;
```

```
}
```


Problem-8

Naming 6

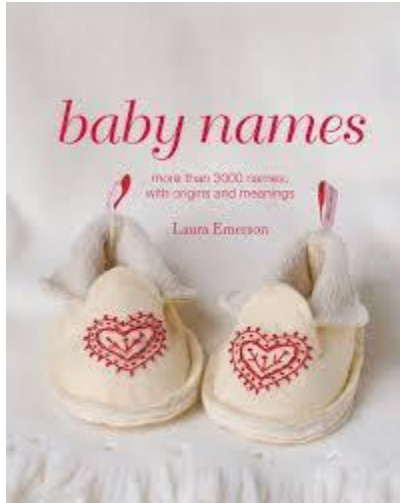
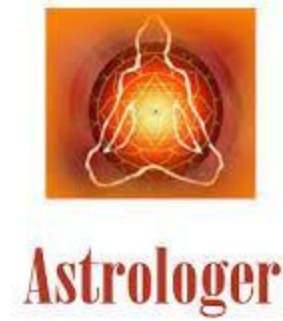
Naming 6



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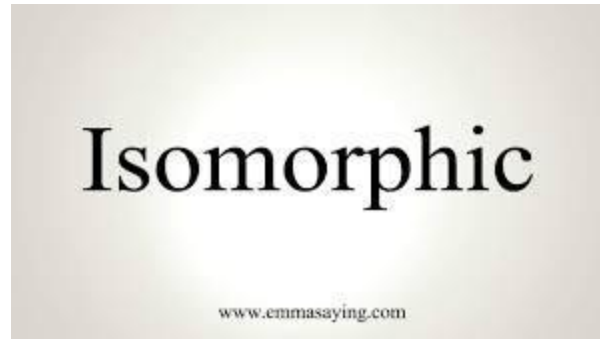


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They were exhilarated to know that Malliga is carrying twins.



As most other to-be parents, they choose to consult astrologers to help with choosing the right name for their baby. Naming a baby based on his or her sun sign or raashi is considered to bring good luck.



The astrologer tells them that it is good to name the twins in such a way that their names are isomorphic strings.

Can you help them in shortlisting the names by writing a program to find whether the two strings A and B are isomorphic?



[Hint :

Two strings str1 and str2 are called isomorphic if there is a one to one mapping possible for every character of str1 to every character of str2. And all occurrences of every character in 'str1' map to same character in 'str2'

Example :

Input: String A = "aab", String B = "xxy"

Output: YES

'a' is mapped to 'x' and 'b' is mapped to 'y'.

Input: String A = "aab", String B = "xyz"

Output: NO

One occurrence of 'a' in str1 has 'x' in str2 and other occurrence of 'a' has 'y'.

Two words are called isomorphic if the letters in one word can be remapped to get the second word. Remapping a letter means replacing all occurrences of it with another letter. The ordering of the letters remains unchanged. No two letters may map to the same letter, but a letter may map to itself.

]

Input Format:

Input consists of 2 strings.

The first string corresponds to A.

The second string corresponds to B.

The maximum length of the strings is 100.

Output Format:

Output consists of a string that is either "YES" or "NO".

Sample Input :

aab

xyy

Sample Output :

YES

Sample Input :

aab

xyx

Sample Output :

NO

Sample Input :

aab

xyz

Sample Output :

NO

```
x=input()
y=input()
y=y.replace("x","a")
y=y.replace("y","b")
if x==y:
    print("YES")
else:
    print("NO")
```

Problem-9

Mannan and Malliga I

Mannan and Malliga I

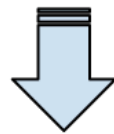
The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.



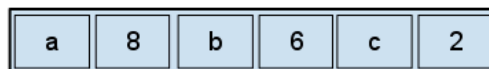
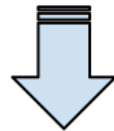
Mannan falls in love with Malliga, courts her and tries to convince her to marry him. In his courtship days, he used to send a sms to Malliga every day.



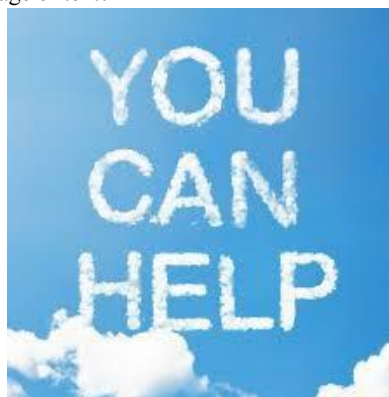
Mannan doesn't want others in Malliga's house to read this text. So he always sends the sms after encoding it using Run Length Coding Algorithm.



run-length encoding



Can you help Mannan in encoding his message or text?



Given an input string, write a program to print the Run Length Encoded string for the input string.

Run-length encoding (RLE) is a very simple form of lossless data compression in which runs of data (that is, sequences in

which the same data value occurs in many consecutive data elements) are stored as a single data value and count, rather than as the original run. This is most useful on data that contains many such runs.

For example, if the input string is “wwwwaaadexxxxxx”, then the encoded string is “w4a3d1e1x6”.

Input Format :

Input consists of a string.

Assume that the maximum length of the string is 50.

Output Format :

Output consists of a string that corresponds to the run-length encoded input string.

Sample Input :

wwwwaaadexxxxxx

Sample Output :

w4a3d1e1x6

```
#include<stdio.h>
int main()
{
    int i,j,c=0;
    char s[100];
    scanf("%s",s);

    for(i=0;s[i]!='\0';i=i+c)
    {
        j=i;c=0;
        while(s[i]==s[j])
        {
            c++;
            j++;
        }
        printf("%c%d",s[i],c);
    }
    return 0;
}
```

.

Problem-10

Mannan and Malliga II

Mannan and Malliga II

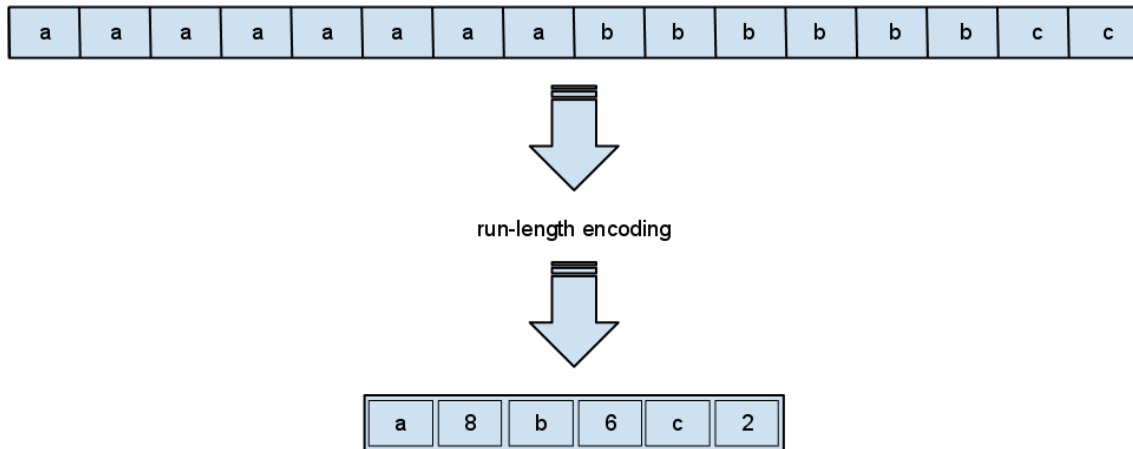
The lead role in Joker is that of Mannar Mannan, a mentally unsound and poor activist who thinks he is the people-appointed President of India.



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Run-Length Encoding

Decoding example:

Encoded text is

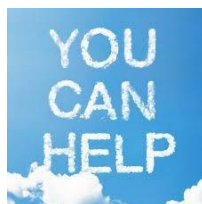
`*x4*p4!*k7`

Original text is

`xxxxpppplkkkkkk`

75

Can you help Malliga in decoding Mannan’s text?



Given an input string, write a program to print the Run Length Decoded string for the input string.

Input Format :

Input consists of a string.

Assume that the maximum length of the string is 50.

Output Format :

Output consists of a string.

Sample Input :

w4a3d1e1x6

Sample Output :

wwwaaadexxxxx

```
#include<stdio.h>
int main()
{
    char s[100];
    int i,j;
    scanf("%s",s);
    for(i=0;s[i]!='\0';i+=2)
    {
        for(j=0;j<s[i+1]-'0';j++)
            printf("%c",s[i]);
    }
    return 0;
}
```