WEEK11

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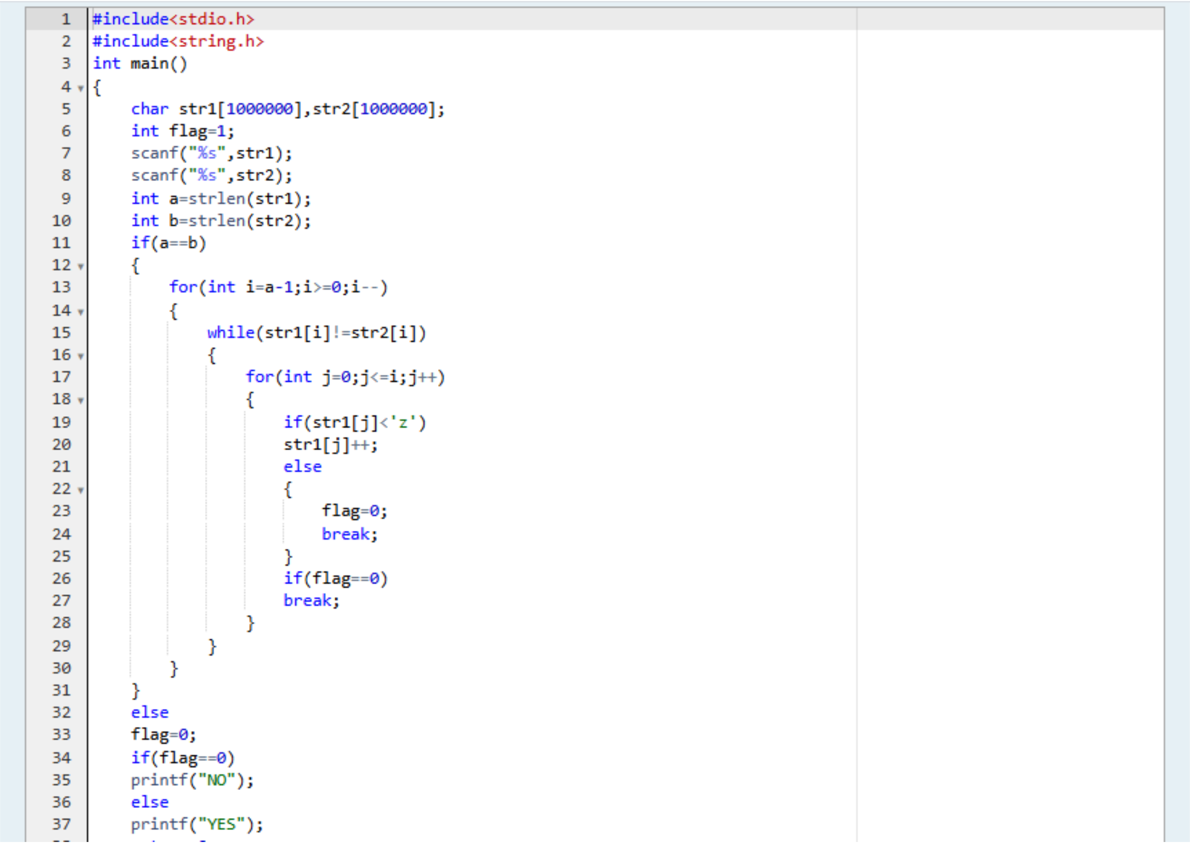
ECE D

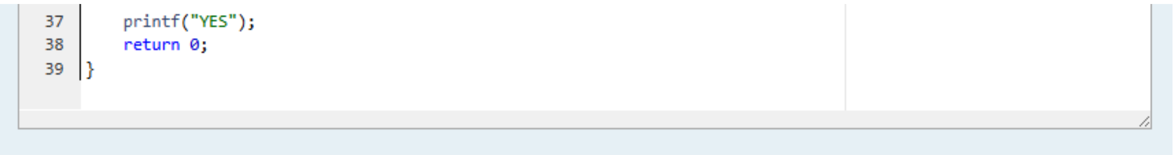
ProblemStatement:1
TwostringsAandBcomprisingoflower-caseEnglishlettersare compatible if they are
equalorcanbemadeequalbyfollowingthisstepanynumberoftimes:

- SelectaprefixfromthestringA(possiblyempty),andincreasethe alphabetical
valueofallthecharactersintheprefixbythesamevalidamount.For example, if
thestringisxyzandweselecttheprefixxythenwecanconvertittoyxby
increasing the alphabetical value by 1. But if we select the prefix xyz then we
cannotincreasethealphabeticalvalue.

YourtaskistodetermineifgivenstringsAandBarecompatible. Input format
Firstline:StringA
Nextline:StringB
Output format
Foreachtestcase,printYESifstringAcanbeconvertedtostringB, otherwise print NO.
Constraints
1≤len(A)≤1000000
1≤len(B)≤1000000
Sample Input
abaca
cdbda
SampleOutput
YES
Explanation
Thestringabacacanbeconvertedtobcbdainonemoveandtocdbdain the next move.

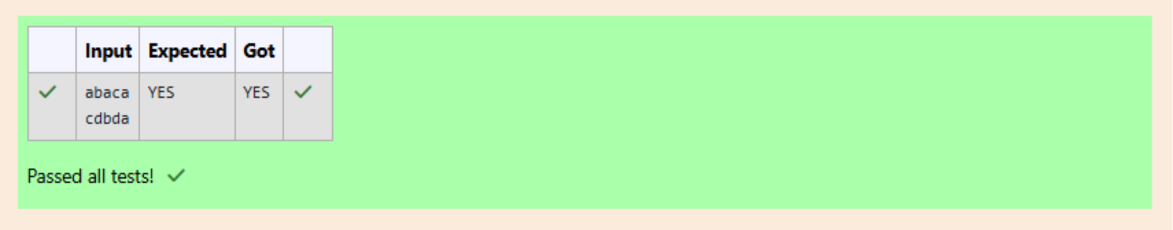


```c
#include<stdio.h>
#include<string.h>
int main()
{
    char str1[1000000],str2[1000000];
    int flag=1;
    scanf("%s",str1);
    scanf("%s",str2);
    int a=strlen(str1);
    int b=strlen(str2);
    if(a==b)
    {
        for(int i=a-1;i>=0;i--)
        {
            while(str1[i]!=str2[i])
            {
                for(int j=0;j<=i;j++)
                {
                    if(str1[j]<'z')
                    str1[j]++;
                    else
                    {
                        flag=0;
                        break;
                    }
                    if(flag==0)
                    break;
                }
            }
        }
    }
    else
    flag=0;
    if(flag==0)
    printf("NO");
    else
    printf("YES");
```



printf("YES");

```c
    return 0;
}
```



	Input	Expected	Got	
✓	abaca cdbda	YES	YES	✓

Passed all tests! ✓

ProblemStatement:2

Dannyhasapossiblelistofpasswordsof Manny'sfacebookaccount.All passwords length isodd.ButDannyknowsthatMannyisabigfanofpalindromes.So,his password and reverseofhispasswordbothshouldbeinthelist. YouhavetoprintthelengthofManny'spasswordandit'smiddlecharacter. Note: The solution will be unique.

InputFormat

ThefirstlineofinputcontainstheintegerN,thenumberofpossible passwords. EachofthefollowingNlinescontainsasingleword,itslengthbeinganodd number greaterthan2andlesserthan14.Allcharactersarelowercaselettersof the English alphabet.

OutputFormat

Thefirstandonlylineofoutputmustcontainthelengthofthecorrect password and its centralletter.

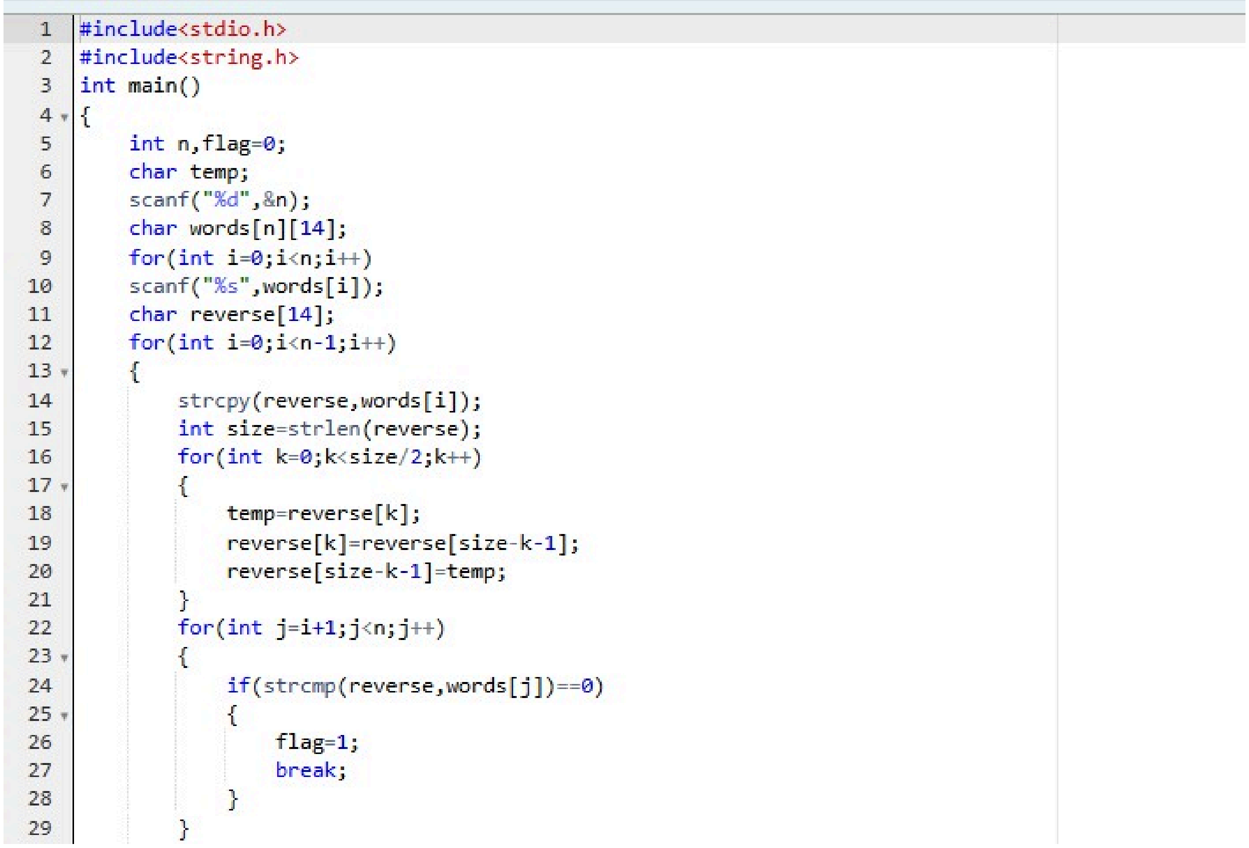
Constraints1 ≤ N ≤ 100

SampleInput

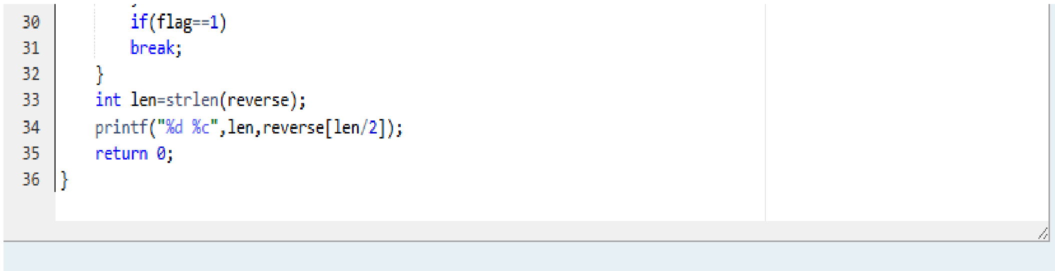
```
4
abc
def
feg
cba
```

SampleOutput

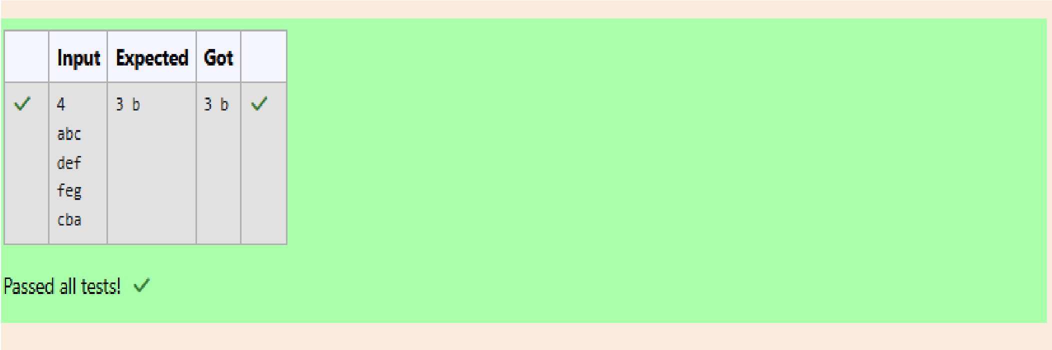
```
3 b
```



```c
#include<stdio.h>
#include<string.h>
int main()
{
    int n,flag=0;
    char temp;
    scanf("%d",&n);
    char words[n][14];
    for(int i=0;i<n;i++)
    scanf("%s",words[i]);
    char reverse[14];
    for(int i=0;i<n-1;i++)
    {
        strcpy(reverse,words[i]);
        int size=strlen(reverse);
        for(int k=0;k<size/2;k++)
        {
            temp=reverse[k];
            reverse[k]=reverse[size-k-1];
            reverse[size-k-1]=temp;
        }
        for(int j=i+1;j<n;j++)
        {
            if(strcmp(reverse,words[j])==0)
            {
                flag=1;
                break;
            }
        }
```



```c
        if(flag==1)
        break;
    }
    int len=strlen(reverse);
    printf("%d %c",len,reverse[len/2]);
    return 0;
}
```



	Input	Expected	Got	
✓	4 abc def feg cba	3 b	3 b	✓

Passed all tests! ✓

ProblemStatement:3

JoeylovestoeatPizza.Butheisworriedasthequalityofpizzamadeby most of the restaurantsisdeteriorating.Thelastfewpizzasorderedbyhimdidnot taste good :(. Joey isfeelingextremelyhungryandwantstoeatpizza.Butheisconfused about the restaurant from wherehe should order. As always he asks Chandler for help.ChandlersuggeststhatJoeyshouldgiveeachrestaurantsomepoints,and then choose the restauranthavingmaximumpoints.Ifmorethanonerestauranthassame points, Joey can choosetheonewithlexicographicallysmallestname. Joeyhasassignedpointstoalltherestaurants,butcan'tfigureoutwhich restaurant satisfies Chandler'scriteria.Canyouhelphimout? Input Format:

FirstlinehasN,thetotalnumberofrestaurants.

NextNlinescontainNameofRestaurantandPointsawardedbyJoey, separated by a space.

Restaurantnamehasnospaces,alllowercaselettersandwillnotbemore than 20 characters.

OutputFormat:

PrintthenameoftherestaurantthatJoeyshouldchoose. Constraints:

1<=N<=105

1<=Points<=106

Sample Input

3

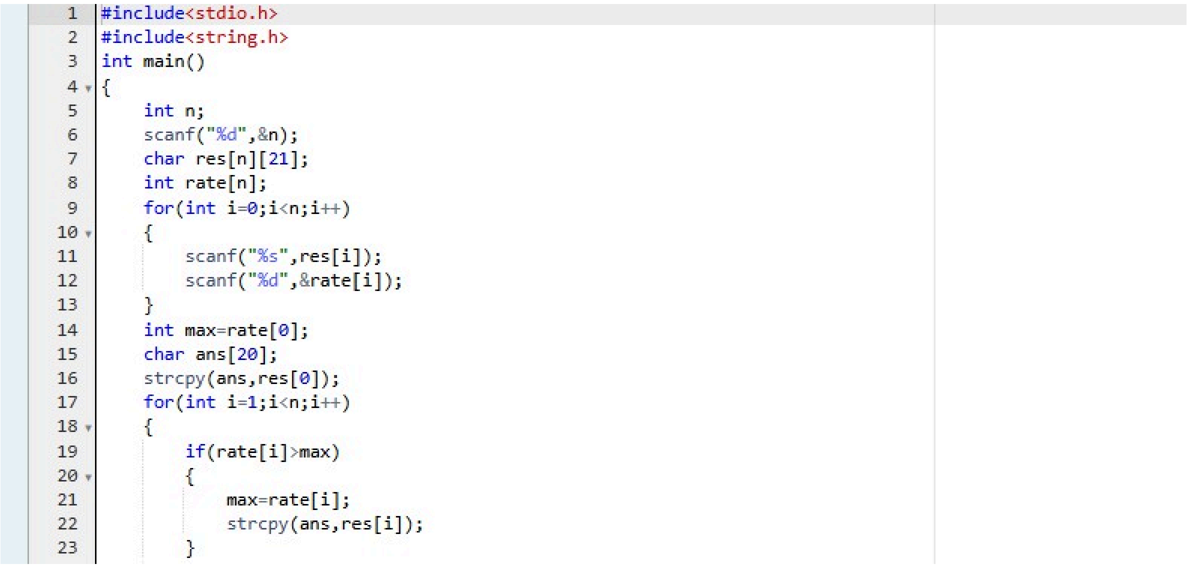
Pizzeria108

Dominos145

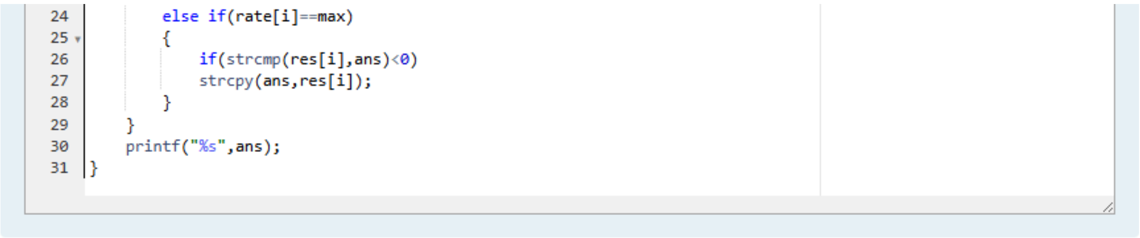
Pizzapizza 49

SampleOutput

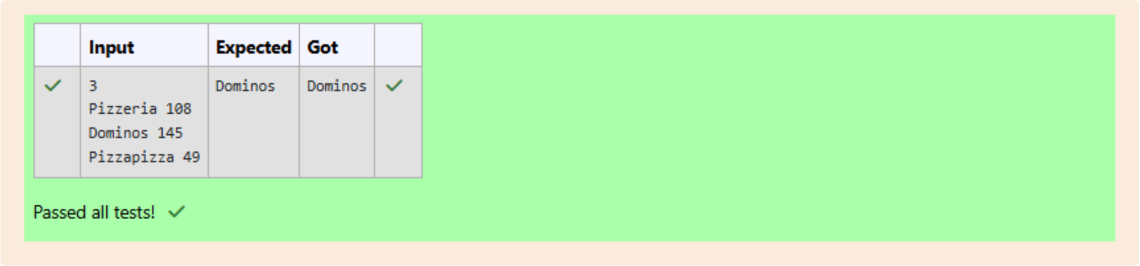
Dominos



```c
#include<stdio.h>
#include<string.h>
int main()
{
    int n;
    scanf("%d",&n);
    char res[n][21];
    int rate[n];
    for(int i=0;i<n;i++)
    {
        scanf("%s",res[i]);
        scanf("%d",&rate[i]);
    }
    int max=rate[0];
    char ans[20];
    strcpy(ans,res[0]);
    for(int i=1;i<n;i++)
    {
        if(rate[i]>max)
        {
            max=rate[i];
            strcpy(ans,res[i]);
        }
```



```c
        else if(rate[i]==max)
        {
            if(strcmp(res[i],ans)<0)
            strcpy(ans,res[i]);
        }
    }
    printf("%s",ans);
}
```

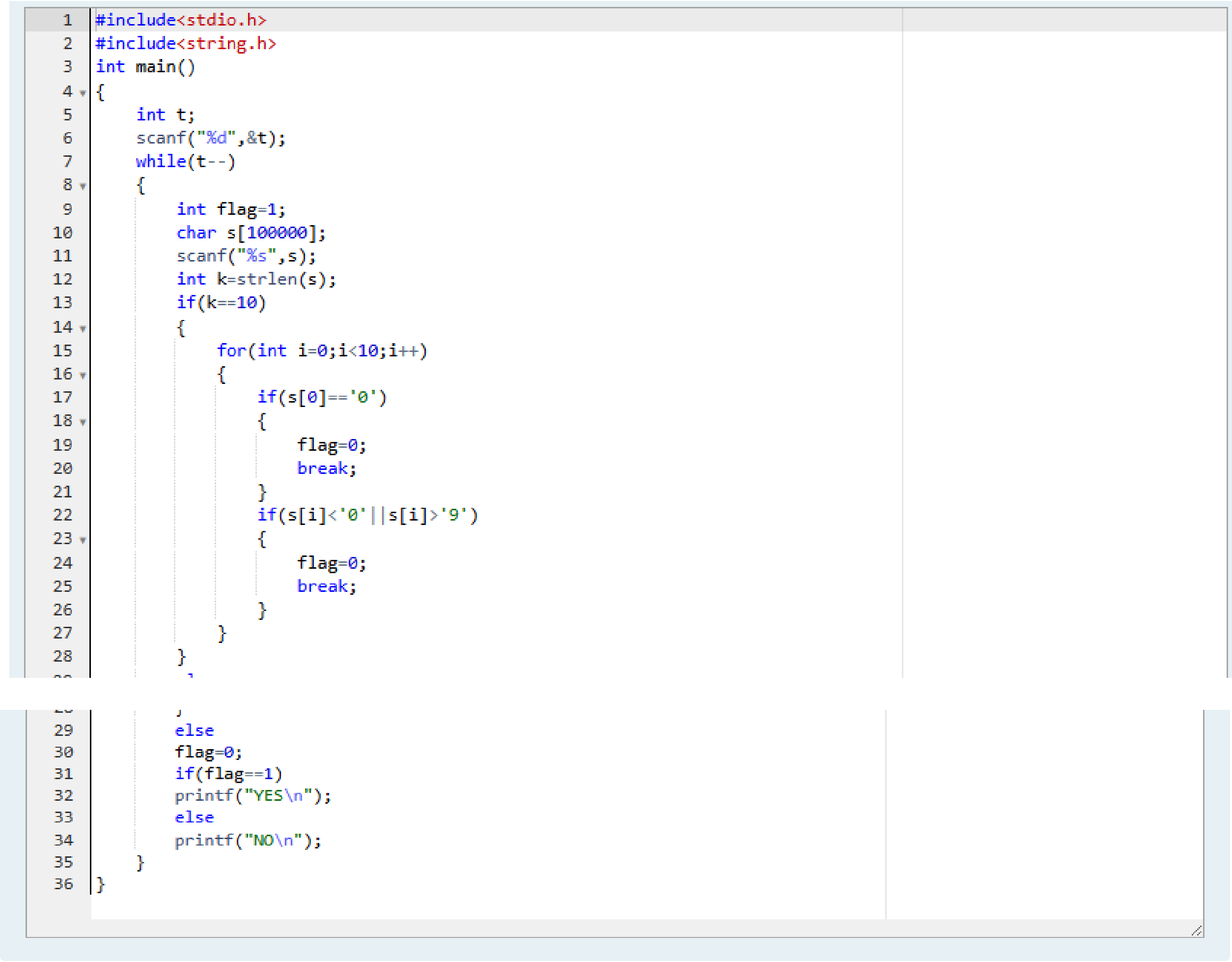


	Input	Expected	Got	
✓	3 Pizzeria 108 Dominos 145 Pizzapizza 49	Dominos	Dominos	✓

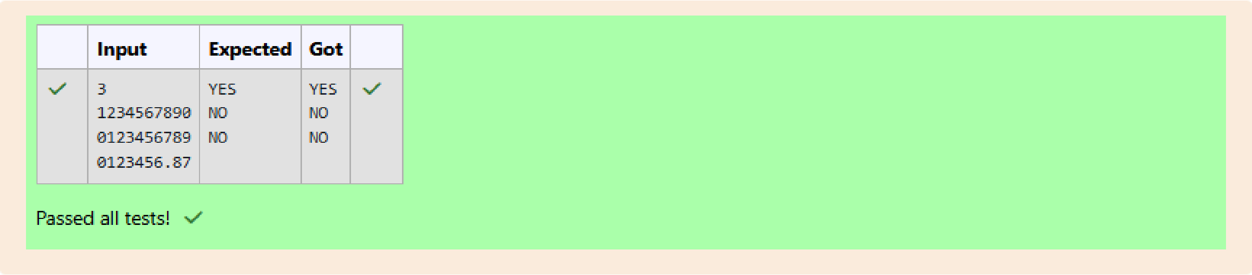
Passed all tests! ✓

ProblemStatement:4 ThesedaysBechanChachaisdepressedbecausehiscrushgavehimlist of mobile number someofthemarevalidandsomeofthemareinvalid.BechanChachahas special power thathecanpickhiscrushnumberonlyifhehasvalidsetofmobile numbers. Help him to

determinethevalidnumbers.
Youaregivenastring"S"andyouhavetodeterminewhetheritisValid mobile number
ornot.Mobilenumberisvalidonlyifitisoflength10,consistsofnumeric values and it
shouldn'thaveprefixzeroes. Input
Format:
FirstlineofinputisTrepresentingtotalnumberoftestcases.
NextTlineeachrepresenting"S"asdescribedininproblemstatement. Output
Format:
Print"YES"ifitisvalidmobilenumberelseprint"NO". Note:
Quotes are for clarity.
Constraints:
1<=T<=103
sumofstringlength<=105 Sample
Input
3
1234567890
0123456789
0123456.87
SampleOutput
YES
NO
NO



```
#include<stdio.h>
#include<string.h>
int main()
{
    int t;
    scanf("%d",&t);
    while(t--)
    {
        int flag=1;
        char s[100000];
        scanf("%s",s);
        int k=strlen(s);
        if(k==10)
        {
            for(int i=0;i<10;i++)
            {
                if(s[0]=='0')
                {
                    flag=0;
                    break;
                }
                if(s[i]<'0'||s[i]>'9')
                {
                    flag=0;
                    break;
                }
            }
        }
        else
        flag=0;
        if(flag==1)
        printf("YES\n");
        else
        printf("NO\n");
    }
}
```



	Input	Expected	Got	
✓	3 1234567890 0123456789 0123456.87	YES NO NO	YES NO NO	✓

Passed all tests! ✓