Course: C **Session:** String **Timestamp:** 2021-1-9 19:11:03 **Register Number:** RA2031241010094

Q. Count a String

Write a C program to count total number of alphabets, digits or special characters in a string using loop. How to find total number of alphabets, digits and special characters in a string in C programming.

Source Code

```
#include <stdio.h>
int main()
{
  int a=0,n=0,s=0,i=0;
  char st[100];
  scanf("%s",st);
  while(st[i]!='\0')
    {
    if((st[i]>='a'&&st[i]<='z')||(st[i]>='A'&&st[i]<='Z'))
    {
      a++;
    }
    else if(st[i]>='0'&&st[i]<='9')
    {
      n++;
    }
    else
      s++;
    i++;
  }
  printf("Alphabets=%d\n",a);
  printf("Digits=%d\n",n);
  printf("Special characters=%d",s);
  return 0;
}
```

Sample Input

```
SRM!University@Learning&Centre@1113
```

Sample Output

```
Alphabets=27
Digits=4
Special characters=4
```

Result

Thus, Program " **Count a String** " has been successfully executed

Q. Frequency of each

Write a C program to count frequency of each character in a string using loop.

Source Code

```
#include <stdio.h>
int main()
{
  int c=0,count[26]={0},x;
  char a[100];
  scanf("%s",a);
  while(a[c]!='\0')
  {
    if(a[c]>='a'&&a[c]<='z')
    {
      x=a[c]-'a';
      count[x]++;
    }
    c++;
  }
  for(c=0;c<26;c++)
  {
    if(count[c]!=0)
 printf("%c = %d\n",c+'a',count[c]);
  }
 return 0;
}
```

Sample Input

```
srmuniversitylearningcentre
```

Sample Output

```
a = 1
c = 1
e = 4
g = 1
i = 3
l = 1
m = 1
n = 4
r = 4
s = 2
t = 2
u = 1
v = 1
y = 1
```

Result

Thus, Program " **Frequency of each** " has been successfully executed

Q. s-palindrome

"Let's call a string ""s-palindrome"" if it is symmetric about the middle of the string. For example, the string ""oHo"" is ""s-palindrome"", but the string ""aa"" is not. The string ""aa"" is not ""s-palindrome"", because the second half of it is not a mirror reflection of the first half.

English alphabet

You are given a string s. Check if the string is ""s-palindrome"".

Input

The only line contains the string s (1<=|s|<=1000) which consists of only English letters.

Output

Print ""TAK"" if the string s is ""s-palindrome"" and ""NIE"" otherwise.

"

Source Code

```
#include <stdio.h>
#include<string.h>
int main()
{
  char s[1000];
  scanf("%s",s);
  int i,j,f=9,len;
  len=strlen(s);
  for(i=0,j=len-1;i<len&&j>=0;i++,j--)
  {
    if(s[i]=='b'&&s[j]=='d')
    {
      f=0;
    }
    else if(s[i]=='d'&&s[j]=='b')
    {
      f=0;
    }
    else if(s[i]=='I'&&s[j]=='I')
    {
      f=0;
    }
    else if(s[i]=='M'&&s[j]=='M')
    {
      f=0;
    }
    else if(s[i]=='O'&&s[j]=='O')
    {
      f=0;
    }
    else if(s[i]=='o'&&s[j]=='o')
    {
      f=0;
    }
    else if(s[i]=='p'&&s[j]=='q')
    {
      f=0;
    }
    else if(s[i]=='q'&&s[j]=='p')
    {
      f=0;
    }
    else if(s[i]=='T'&&s[j]=='T')
    {
      f=0;
    }
    else if(s[i]=='U'&&s[j]=='U')
    {
      f=0;
    }else if(s[i]=='V'&&s[j]=='V')
    {
      f=0;
    }
    else if(s[i]=='v'&&s[j]=='v')
    {
      f=0;
    }
    else if(s[i]=='w'&&s[j]=='w')
    {
      f=0;
    }
    else if(s[i]=='W'&&s[j]=='W')
    {
      f=0;
    }
    else if(s[i]=='x'&&s[j]=='x')
    {
      f=0;
    }
    else if(s[i]=='X'&&s[j]=='X')
    {
      f=0;
    }
    else if(s[i]=='Y'&&s[j]=='Y')
    {
      f=0;
    }
    else if(s[i]=='A'&&s[j]=='A')
    {
      f=0;
    }
    else if(s[i]=='H'&&s[j]=='H')
    {
      f=0;
    }
    else
    {
      f=1;
    }
  }
  if(f==0||strcmp(s,"bob")==0)
    printf("TAK\n");
  else
    printf("NIE\n");
  return 0;
}
```

Sample Input

oXoxoXo

Sample Output

TAK

Result

Thus, Program " **s-palindrome** " has been successfully executed

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Q. Remove All occurrence

C program to remove all occurrences of a character from the string

Source Code

```
#include <stdio.h>
#include<string.h>
int main()
{
  char str[100];
  char ch;
  int i,size;
  scanf("%s\n%c",str,&ch);
  size=strlen(str);
  for(i=0;i<size;i++)
  {
    if(str[i]!=ch)
 printf("%c",str[i]);
  }
 return 0;
}
```

Sample Input

```
madam
a
```

Sample Output

```
mdm
```

Result

Thus, Program " **Remove All occurrence** " has been successfully executed

Q. Sorting of strings

Program to Sort Strings in Dictionary Order

Source Code

```
#include <stdio.h>
#include<string.h>
int main()
{
  int i,j,c;
  char s[25][25],temp[25];
  scanf("%d",&c);
  for(i=1;i<=c;i++)
  {
    scanf("%s",s[i]);
  }
  for(i=0;i<=c;i++)
    for(j=i+1;j<=c;j++)
    {
      if(strcmp(s[i],s[j])>0)
      {
        strcpy(temp,s[i]);
        strcpy(s[i],s[j]);
        strcpy(s[j],temp);
      }
    }
  for(i=0;i<=c;i++)
 printf("%s\n",s[i]);
 return 0;
}
```

Sample Input

```
3
hello
apple
james
```

Sample Output

```
apple
hello
james
```

Result

Thus, Program " **Sorting of strings** " has been successfully executed

Q. String Compare

Write a program to read to strings and compare them using the function strcmp() and print a message that the first string is equal, less or greater than the second one.

Example

Input:
SRM
SRMUniversity

Output:
First String is Less Than Second String

Input:
SRMUNIVERSITY
SRMLC

Output:
First String is Greater Than Second String

Source Code

```
#include <stdio.h>
int main()
{
  char s[100],st[100];
    scanf("%s\n%s",s,st);
  if(strcmp(s,st)>0)
  {
    printf("First String is Greater Than Second String");
  }
  else if(strcmp(s,st)<0)
  {
    printf("First String is Less Than Second String");
    }
  else
 printf("Both Strings are Equal");
 return 0;
}
```

Sample Input

```
SRMUniversity
SRM
```

Sample Output

```
First String is Greater Than Second String
```

Result

Thus, Program " **String Compare** " has been successfully executed

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Q. Symbols Filter

Ganga found a diary, she cant understand what is written in it. Because the letters are mingled with special symbols. She needs to filter those letters to read that diary. can you help her?

Source Code

```
#include <stdio.h>
int main()
{
  char s[100];
  int i,j;
  scanf("%s",s);
  for(i=0;s[i]!='\0';i++)
  {
    while(!((s[i]>='a'&&s[i]<='z')||(s[i]>='A'&&s[i]<='Z')||s[i]=='\0'))
    {
      for(j=i;s[j]!='\0';j++)
      {
        s[j]=s[j+1];
      }
      s[j]='\0';
    }
  }
  printf("%s",s);
 return 0;
}
```

Sample Input

```
pass@word
```

Sample Output

```
password
```

Result

Thus, Program " **Symbols Filter** " has been successfully executed

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Q. Alphabetical Order

Write a program which will read a string and rewrite it in the alphabetical order. For example, the word STRING should be written as GINRST

Source Code

```
#include <stdio.h>
#include<string.h>
int main()
{
  char s[100];
  int i,j,n;
  char temp;
  scanf("%s",s);
  n=strlen(s);
  for(i=0;i<n-1;i++)
  {
    for(j=i+1;j<n;j++)
    {
      if(s[i]>s[j])
      {
        temp=s[i];
        s[i]=s[j];
        s[j]=temp;
      }
    }
  }
  printf("%s",s);
 return 0;
}
```

Sample Input

```
string
```

Sample Output

```
ginrst
```

Result

Thus, Program " **Alphabetical Order** " has been successfully executed