

## insertStr

Write a C function insertStr() that inserts the characters of string s into string a according to alphabetical order. The characters in string a are ordered alphabetically, while the characters in string s may not be ordered alphabetically. For example, if a is "cehiknqtw" and s is "fbla", then the updated string a will be "abcefhiklnqtw" after the execution of the insertStr() function. In addition, the string a will also be returned to the calling function.

A sample program template is given below:

```
#include <stdio.h>
#include <string.h>
char *insertStr(char *a, char *s);
int main()
{
    char a[40], s[40];

    printf("Enter the string a: \n");
    scanf("%s", a);
    printf("Enter the string s: \n");
    scanf("%s", s);
    insertStr(a, s);
    printf("insertStr(): %s", a);
    return 0;
}
char *insertStr(char *a, char *s)
{
    /* Write your code here */
}
```

Some test input and output sessions are given below:

(1) Test Case 1:

```
Enter the string a:
cehiknqtw
Enter the string s:
fbla
insertStr(): abcefhiklnqtw
```

(2) Test Case 2:

```
Enter the string a:
cehiknqtw
Enter the string s:
a
insertStr(): acehiknqtw
```

(3) Test Case 3:

```
Enter the string a:
cehiknqtw
Enter the string s:
zy
insertStr(): cehiknqtwyz
```

(4) Test Case 4:

```
Enter the string a:
```

```
cehiknqtw
Enter the string s:
eh
insertStr(): ceehhiknqtw
```

find position to insert letter

move everything up by one element

```
#include <stdio.h>
#include <string.h>
char *insertStr(char *a, char *s);
int main()
{
    char a[40],s[40],*p;

    printf("Enter the string a: \n");
    fgets(a, 40, stdin);
    if (p=strchr(a,'\n')) *p = '\0';
    printf("Enter the string s: \n");
    fgets(s, 40, stdin);
    if (p=strchr(s,'\n')) *p = '\0';
    insertStr(a,s);
    printf("insertStr(): ");
    puts(a);
    return 0;
}
char *insertStr(char *a, char *s)
{
    int i,k,j;

    for(k=0;s[k]!='\0';k++)
    {
        j=0;
        while(s[k]>=a[j]&& a[j]!='\0')
            j++;
        for(i=strlen(a);i>=j;i--)
        {
            a[i+1] = a[i];
        }
        a[j]=s[k];
    }
    return a;
}
```

change to letter to be inserted