

# C语言 实现逆置功能

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## 1. 字符串的逆置

### 方法1：利用数组

```
1 #include<stdio.h>
2 #include<string.h>
3 void fun(char a[]) {
4     int i, len;
5     char ch;
6     len=strlen(a);
7     for(i=0; i<len/2; i++) {
8         ch=a[i];
9         a[i]=a[len-1-i];
10        a[len-1-i]=ch;
11    }
12 }
13
14 void main() {
15     char s[10];
16     printf("Please input a string:\n");
17     gets(s);
18     printf("The string has been inverted:\n");
19     fun(s);
20     puts(s);
21 }
```

结果为：

---

```
C:\ "C:\Documents and Settings\Administrator\桌面\wrr"
Pealse input a string:
I love wrr!
The string has been inverted:
!rrw evol I
Press any key to continue
```

## 方法2：利用指针

```
1 #include<stdio.h>
2 #include<string.h>
3 void fun(char *a) {
4     if(*a) {
5         fun(a+1);
6         printf("%c", *a);
7     }
8 }
9
10 void main() {
11     char s[10];
12     printf("Pealse input a string:\n");
13     gets(s);
14     printf("The string has been inverted:\n");
15     fun(s);
16     printf("\n");
17 }
```

结果为：

```
C:\ "C:\DOCUMENTS AND SETTINGS\ADMINISTRATOR\桌面\WRR"
Pealse input a string:
a b c d e
The string has been inverted:
e d c b a
Press any key to continue
```

## 2.输入10个数，逆置输出

### 方法1：利用数组

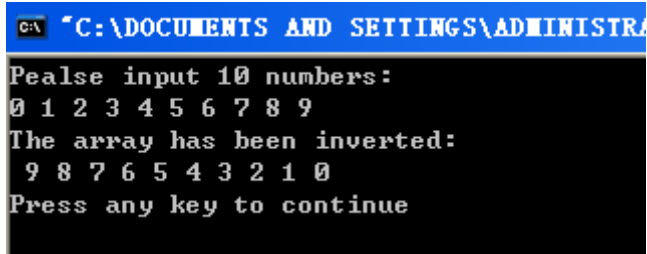
```
1 #include<stdio.h>
2 #include<string.h>
3 #define N 10
4
5 #if(1)
6 void reverse(int x[], int n) {
7     int i, j, temp, m;
8     m=(n-1)/2;
9     for(i=0; i<=m; i++) {
10         j=n-1-i;
11         temp=x[i];
12         x[i]=x[j];
13         x[j]=temp;
14     }
15 }
16 #endif
17
18 #if(0)
19 void reverse(int *x, int n) {
20     int *i, *j, *p, temp, m;
21     m=(n-1)/2;
22     i=x; //i->x[0]
23     j=x+n-1; //j->x[n-1]
24     p=x+m; //p->x[m]
25     for(; i<=p; i++, j--) {
26         temp=*i;
27         *i=*j;
28         *j=temp;
29     }
30 }
31 #endif
32
33 void main() {
34     int i, a[N];
35     printf("Please input %d numbers:\n", N);
36     for(i=0; i<N; i++) {
37         scanf("%d", a+i);
38     }
39     reverse(a, N);
40     printf("The array has been inverted:\n");
41     for(i=0; i<N; i++) {
```

```

42     printf("%2d",a[i]);
43 }
44     printf("\n");
45 }

```

结果为:



```

C:\DOCUMENTS AND SETTINGS\ADMINISTRATOR\...
Please input 10 numbers:
0 1 2 3 4 5 6 7 8 9
The array has been inverted:
9 8 7 6 5 4 3 2 1 0
Press any key to continue

```

## 方法2：利用指针

```

1 #include<stdio.h>
2 #include<string.h>
3 #define N 10
4
5 #if(0)
6 void reverse(int x[], int n) {
7     int i, j, temp, m;
8     m=(n-1)/2;
9     for(i=0; i<=m; i++) {
10         j=n-1-i;
11         temp=x[i];
12         x[i]=x[j];
13         x[j]=temp;
14     }
15 }
16 #endif
17
18 #if(1)
19 void reverse(int *x, int n) {
20     int *i, *j, *p, temp, m;
21     m=(n-1)/2;
22     i=x;    //i->x[0]
23     j=x+n-1; //j->x[n-1]
24     p=x+m;   //p->x[m]
25     for(; i<=p; i++, j--) {
26         temp=*i;
27         *i=*j;

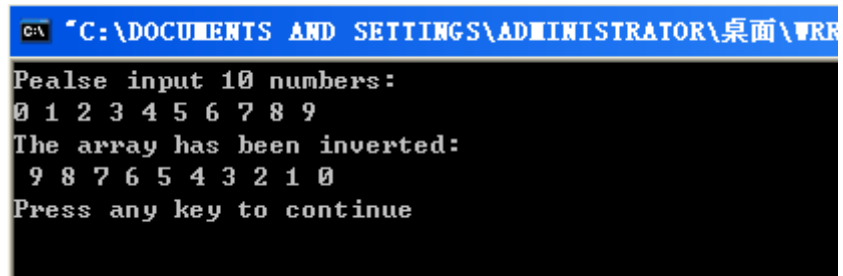
```

```

28         *j=temp;
29     }
30 }
31 #endif
32
33 void main() {
34     int i, a[N];
35     printf("Please input %d numbers:\n", N);
36     for(i=0; i<N; i++) {
37         scanf("%d", &a[i]);
38     }
39     reverse(a, N);
40     printf("The array has been inverted:\n");
41     for(i=0; i<N; i++) {
42         printf("%2d", a[i]);
43     }
44     printf("\n");
45 }

```

结果为:



```

C:\DOCUMENTS AND SETTINGS\ADMINISTRATOR\桌面\WRP
Please input 10 numbers:
0 1 2 3 4 5 6 7 8 9
The array has been inverted:
 9 8 7 6 5 4 3 2 1 0
Press any key to continue

```