# 第8章 指针

——字符数组与字符指针:

字符串的输入和输出

#### 逐个字符输入输出字符串

```
#define STR_LEN 80
char str[STR_LEN+1];
```

```
for (i=0; str[i]!='\0'; i++)
{
    putchar(str[i]);
}
putchar('\n');
```

一般不用字符串长度控制,如i<STR\_LEN

#### 整体输入输出字符串

```
#define STR_LEN 80
 char str[STR_LEN+1];
                          不能输入带空格
                             的字符串
scanf("%s",str);
printf("%s\n",str);
                        可以输入带空格
                          的字符串
gets(str);
puts(str);
                             为什么?
```

# 用scanf输入/输出字符串

```
#include <stdio.h>
                                   C:\Users\sse\Desktop\...
#define STR LEN 80
                                   Input a string: Hello world
int main()
                                   Hello
                                   Press any key to continue
  char str[STR LEN+1];
  printf("Input a string:");
  scanf("%s", str)
                         用%d输入数字或%s输入字符串时,在开始
  printf("%s\n", str);
                         读之前会跳过空格、回车或制表符等空白
                         字符,再次遇到这些字符时,系统认为读
  return 0;
                         入结束, 因此不能输入带空格的字符串
```

```
#include <stdio.h>
                                         C:\Users\sse\Des...
#define STR LEN 80
                                         Input a string: Hello world
                                          Hello world
int main()
                                         Press any key to continue
  char str[STR LEN+1];
  printf("Input a string:");
  gets(str);
  printf("%s\n", str);
                       以回车换行作为终止符,可输入带空格的字符
  return 0;
                       串,因为空格和制表符都是字符串的一部分
```

此外,两个字符串输入函数对回车换行符的处理也不同

```
#include <stdio.h>
                                             C:\Users\sse\De...
#define STR LEN 80
                                             Input a string:hello
                                             he 11a
int main()
                                             Input a string:
                                             Press any key to continue
                                             <
   char str[STR LEN+1];
   printf("Input a string:");
   scanf("%s", str);
  printf("%s\n", str);
  printf("Input a string:");
  gets(str);
   printf("%s\n", str);
                                  gets()将回车从缓冲区读走,但不
   return 0;
                                  作为字符串的一部分,用空字符代替
```

```
#include <stdio.h>
                                                C:\Users\sse\D...
#define STR LEN 80
                                                Input a string:Hello
                                                Hello
int main()
                                                Input a character:a
                                                Press any key to continue
   char str[STR LEN+1], ch;
   printf("Input a string:");
  gets(str);
   printf("%s\n", str);
   printf("Input a character:");
   ch = getchar();
   printf("%c\n", ch);
                                        gets()将回车从缓冲区读走,
   return 0;
                                        所以getchar()等待用户输入
```

#### 用scanf输入/输出字符串

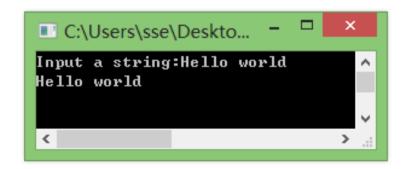
```
#include <stdio.h>
                                              C:\Users\sse\Des...
                                              Input a string:Hello
#define STR_LEN 80
                                              Hello
int main()
                                              Input a character:
                                             Press any key to continue
   char str[STR LEN+1], ch;
                                              <
   printf("Input a string:");
  scanf("%s", str);
   printf("%s\n", str);
   printf("Input a character:");
   ch = getchar();
   printf("%c\n", ch);
                                  scanf()不读走回车,回车仍留在缓
   return 0;
                                  冲区中,回车会被getchar()读走
```

# 用scanf输入/输出字符串

```
#include <stdio.h>
                                                 C:\Users\sse\D... -
#define STR LEN 80
                                                 Input a string:Hello
                                                 Hello
int main()
                                                 Input a character:a
                                                 Press any key to continue
   char str[STR LEN+1], ch;
   printf("Input a string:");
                                                   scanf(" ");
   scanf("%s", str);
                                                   scanf("%c", &ch);
   printf("%s\n", str);
   printf("Input a character:");
                                                  scanf(" %c", &ch);
   getchar();
                          scanf(" ");
   ch = getchar();
   printf("%c\n", ch);
   return 0;
                                          清空输入缓冲区中的空白字符
```

```
#include <stdio.h>
#define STR LEN 80
int main()
  char str[STR LEN+1];
  char *ptr = str;
  printf("Input a string:");
  gets(ptr);
  printf("%s\n", ptr);
  return 0;
```





# 讨论

#### ■ 见证奇迹的时刻——Mission Impossible

```
源程序(不要添加任何空格和换行)
main(){char*a="main(){char*a=%c%s%c;printf(a,34,a,34);}";printf(a,3
4,a,34);}
运行结果与源代码完全一样,你能解释这个运行结果吗?
main(){char*a="main(){char*a=%c%s%c;printf(a,34,a,34);}";
printf(a,34,a,34);}
```





