

C basics

C Reference

main, printf & functions

Every C program starts in `main`. `#include <stdio.h>` pulls in a header 头文件 so you can use `printf` to print. A function 函数 is a named block you can call; `\n` starts a new line. `main` returns 0 to mean "success".

```
#include <stdio.h>

void greet(void) {
    printf("Hello, world!\n");
}

int main(void) {
    greet();
    printf("I am learning C.\n");
    return 0;
}
```

Variables, types & arithmetic

C needs a type for every variable: `int` (integer 整数), `double` (floating-point 浮点数), `char` (one character). `printf` uses a format specifier 格式说明符—`%d`, `%f`, `%c`—for each value. `/` between two ints is integer division; `%` is the remainder 余数.

```
#include <stdio.h>

int main(void) {
    int n = 17;
    double pi = 3.14;
    char grade = 'A';
    printf("%d %.2f %c\n", n, pi, grade); // 17 3.14 A
    printf("%d %d\n", 7 / 2, 7 % 2); // 3 1
    return 0;
}
```

Comments & style

A comment 注释 is a note for humans; the compiler ignores it. Use `//` for one line and `/* ... */` for a block. Good indentation 缩进 and clear names make code easy to read.

```
#include <stdio.h>

int main(void) {
```

```
// a single-line comment
/* a block
   comment */
int total = 3 + 4;      // clear names help
printf("%d\n", total); // 7
return 0;
}
```