

Preprocessor & qualifiers

C Reference

Preprocessor, const, static, enum

The preprocessor 预处理器 runs before compiling. `#define` makes a macro 宏—plain text replaced everywhere. `const` makes a constant 常量 that cannot change. `static` inside a function keeps a variable's value between calls. An `enum` (enumeration 枚举) names a set of integers starting at 0.

```
#include <stdio.h>

#define MAX 100                // macro: text replaced before
↔ compiling

enum Color { RED, GREEN, BLUE }; // named integers 0, 1, 2

int next_id(void) {
    static int count = 0;      // keeps its value between calls
    count++;
    return count;
}

int main(void) {
    const double PI = 3.14;    // cannot be changed
    printf("%d %.2f\n", MAX, PI); // 100 3.14
    printf("%d %d %d\n", RED, GREEN, BLUE); // 0 1 2
    int a = next_id();
    int b = next_id();
    printf("%d %d\n", a, b);   // 1 2
    return 0;
}
```