



C

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C +

- qq 2820047809 (Trdthg)

☺ For IO Club

🦊 Presenter 20

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C

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语言入门详解
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《C#语言入门详解》全

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手把手编程

100道

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C语言经典100题（手把手

- C
- IDE /
- /
-

```
#include <stdio.h>

int main() {
    printf("Hello World ");
    return 0;
}
```



C

1. C
 - C
2. C
3. C
4. / / ...



C

1.

■

■ gcc

■ CMD

2.

■

■

■

{ nano +

2.

- Dev C++



- VS



Visual C++ 6

- - gcc

C / Cpp & .^[1]

Logo

Linux **gcc** GNU  `apt install gcc`

Windows **gcc** MinGW^[2]  **MinGW-w64**
A complete runtime environment for GCC & LLVM
for 32 and 64 bit Windows ` ` or Dev C++

Windows **CL** MSVC  VS

All **clang** Clang & LLVM  `apt install clang` VS

1. Binutils GCC Glibc

2. Minimalist GNU for Windows

1. Dev C++ VS



+ + + +

- IDE
- vscode



2.

MinGW (gcc) MSVC (cl)

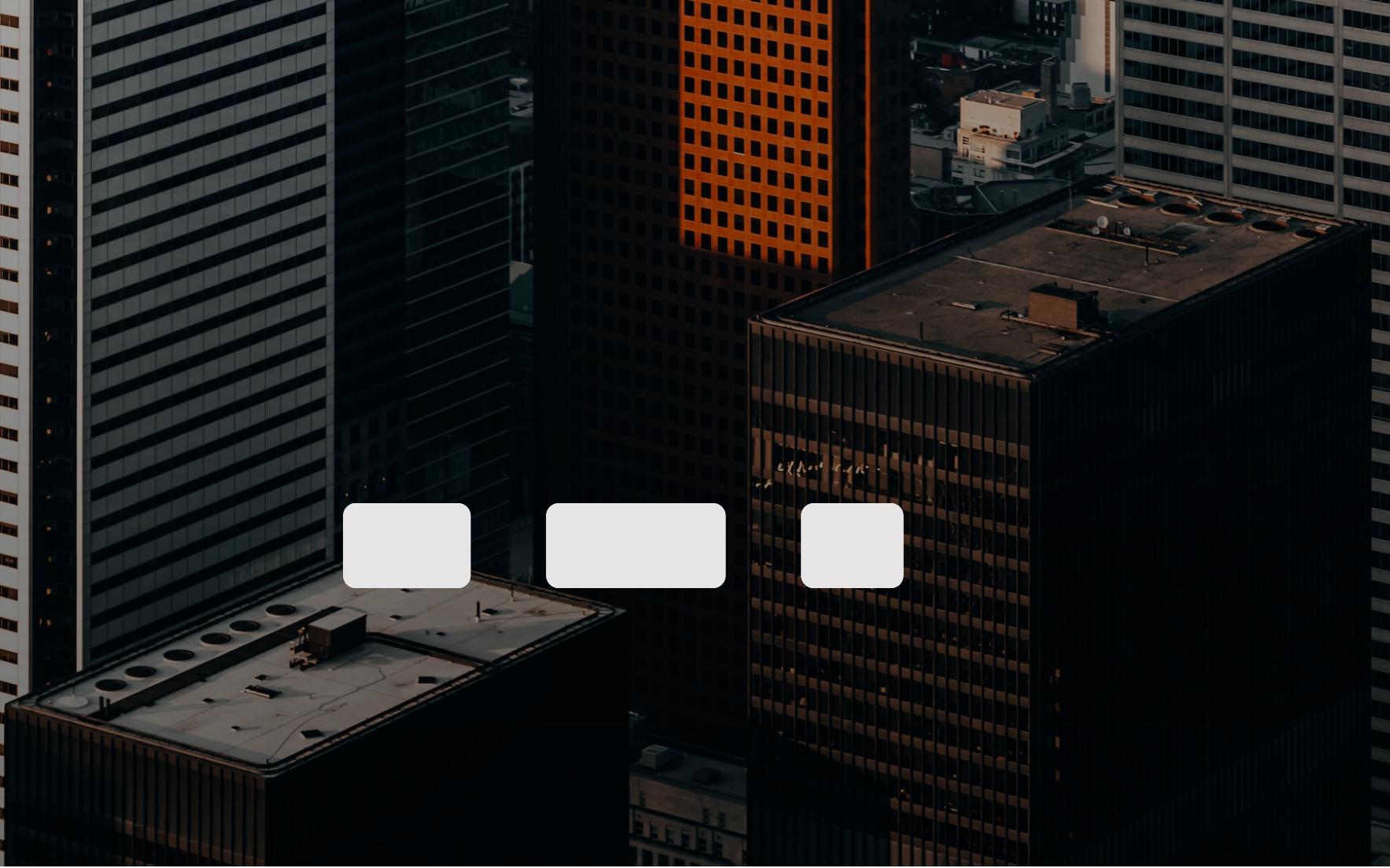
-
- (+)

3. gcc

- cph
- c/c++

C

-
-
-
- |
- IDE /
- & / /
- & IO &
- malloc
- Git / Github
- Markdown / Editor



Rust

Go

```
package main

func main() {
    var a8 int8 = 8
    var a16 int16 = 8
    var a32 int32 = 8
    var a64 int64 = 8

    var u8 uint8 = 0
    var u16 uint16 = 0
    var u32 uint32 = 0
    var u64 uint64 = 0

    // byte    uint8
    var c2 uint8 = 'a'
    var c1 byte = 'a'    // byte    uint8      uint8

    print(a8, a16, a32, a64, u8, u16, u32, u64)
}
```

C

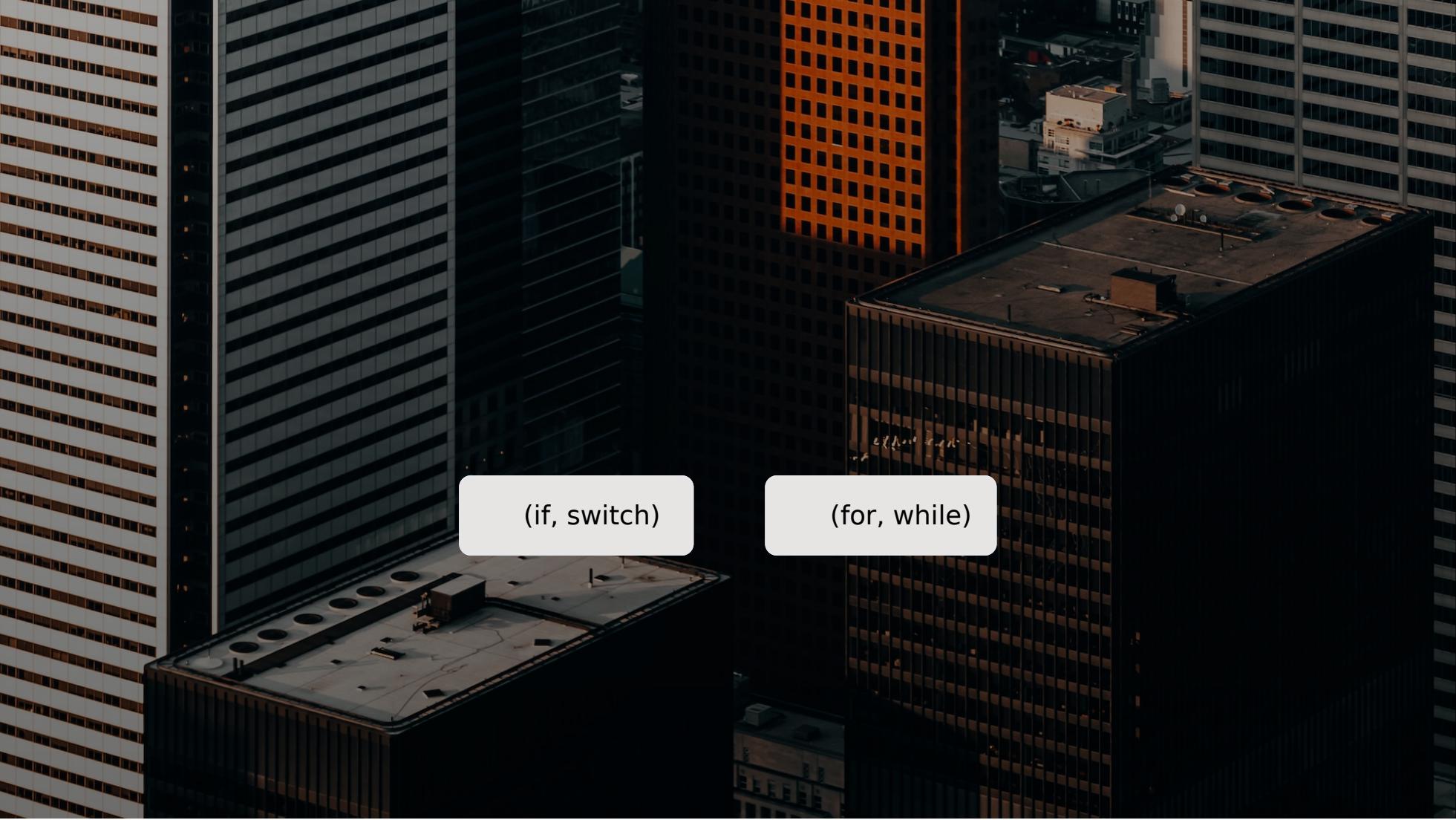
```
char a1 = 127;      // 8 0000 0000 -128 - 127
short a2 = 1;       // 16
int a3 = 0;         // 32
long a4 = 0;        // 64
long long a5 = 0;   // 128 0000 0000 0000 0000 0000 0000 0000

unsigned char b1 = 255; // 8
unsigned short b2 = 1; // 16
unsigned int b3 = 0; // 32
unsigned long b4 = 0; // 64
unsigned long long b5 = 0; // 128
```

```
float c1 = 1.0;      // 32
double c2 = 1.0;     // 64
long double c3 = 1.0; // 128
```

```
char c1 = 'a';
char c2 = '\0';
```

ASCII



A dark, atmospheric cityscape at night, featuring several skyscrapers with illuminated windows. In the foreground, a building's roof is visible, featuring a pattern of circular vents. Two white rectangular callout boxes are overlaid on the image. The left box contains the text '(if, switch)' and the right box contains '(for, while)'. The overall mood is mysterious and modern.

(if, switch)

(for, while)

if

```
if (xxx) {  
    ...  
} else if (xxx) {  
    ...  
} else {  
    ...  
}
```

```
if (i == 0)  
    printf("      \n");  
else if (i == 1)  
    printf("      \n");  
else  
    printf("      \n");
```

```
#include <stdio.h>  
int main() { // scope 0  
    int i = 0;  
  
    { // scope 1  
        int a = 0;  
        printf("%d", i);  
    }  
  
    printf("%d", a);  
  
    { // scope 2  
        int b = 0;  
        printf("%d", i);  
    }  
  
    return 0;  
}
```

switch

FSM

```
switch (i)
{
    case 1:
        statement1;
        statement2;
        break;
    case 2:
        statement;
        break;
    ...
    default:
        statement;
}
```

```
#include <stdio.h>
int main() {
    return 0;
}
```

for

```
for (      ;      ;      ) {  
    ...  
}  
  
for (;;) {  
    //  
}
```

while

```
while (      ) {  
    ...  
}
```

Break Continue

```
#include<stdio.h>  
int main() {  
    for(int i = 0; i < 5; i++) {  
        if (i == 3) {  
            continue; //  
            break;    //  
        }  
        printf("%d\n", i); // 0 1 2  
    }  
}
```

1.

$f(x)$

$y = |x|$

```
#include <stdio.h>
```

```
int main() {
```

```
    return 0;
```

```
}
```



2.

```
int add(int a, int b) {  
    return a + b;  
}
```

void ?

void

1.

```
void printSomeSentence()
{
    printf("=====\\n");
    printf("Company *****\\n");
    printf("Fax ***** \\n");
    printf("Email ***** \\n");
    printf("=====\\n");
}
```

2.

```
void printSomeSentence(void)
{
    printf("=====\\n");
    printf("Company *****\\n");
    printf("Fax ***** \\n");
    printf("Email ***** \\n");
    printf("=====\\n");
}
```

main

```
#include<stdio.h>
int main(int argc, char* argv[]) {
    // argc:
    // argv:

    return 0;
}
```

C/C++

```
int a[6];  
  
char b[6];  
  
double c[6];
```

```
#include <stdio.h>  
int main() {  
    char chars[5] = {'a', 'b', 'c', 'd', 'e'};  
    //          0   1   2   3   4  
  
    char chars_first = chars[0];  
    char chars_last = chars[4];  
  
    for (int i = 0; i < 5; i++) {  
        printf("%c\n", chars[i]);
```





```
char chars[10] = {'a', 'b', 'c', 'd', 'e', '\0'};  
printf("%s", chars); // abcde
```

`\0`

```
char chars[10] = {'a', 'b', 'c', 'd', 'e', '\0', 'a'};  
printf("%s", chars); // abcde
```

```
char chars[] = {"abcde"};  
char chars[] = "abcde";
```



C string.h

1.

```
#include <string.h>
char str[] = "abcde";
int len = strlen(str);
```

2.

```
char str1[] = "abcde";
char str2[10];
strcpy(str2 , str1);
```

3.

```
char str1[] = "aaa";
char str2[] = "bbb";

int res = strcmp(str1, str2);

if (res == 0)
    printf("str1      str2\n");
else
    printf("str1      str2      \n");
```

```
#include <stdio.h>
int main(int argc, char *argv[]) {
    int arr[10][10] = {};
    for (int i = 0; i < 10; i++) {
        for (int j = 0; j < 10; j++) {
            printf("%d ", arr[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```

main

```
#include<stdio.h>
int main(int argc, char* argv[]) {
    return 0;
}
```

`#define`

```
#define LIGHT 1
#define DARK 1

enum Week {
    Monday = 0,
    Tuesday = 1,
    Wednesday = 2,
};

int main(int argc, char const *argv[]) {
    printf("%d\n", LIGHT);
    return 0;
}
```

1. (Preprocessing)
 - #include
2. (Compilation)
 -
3. (Assemble)
 -
4. (Linking)
 - (.so / .dll)

templete