Writing C++ on Your PC (Laptop)

- The essential components: **a compiler** and **an editor**
- Windows: **g++** and **visual studio code**

Installing g++

- Download MinGW: *http://bit.ly/mingw10*

Installing g++

- Install MinGW
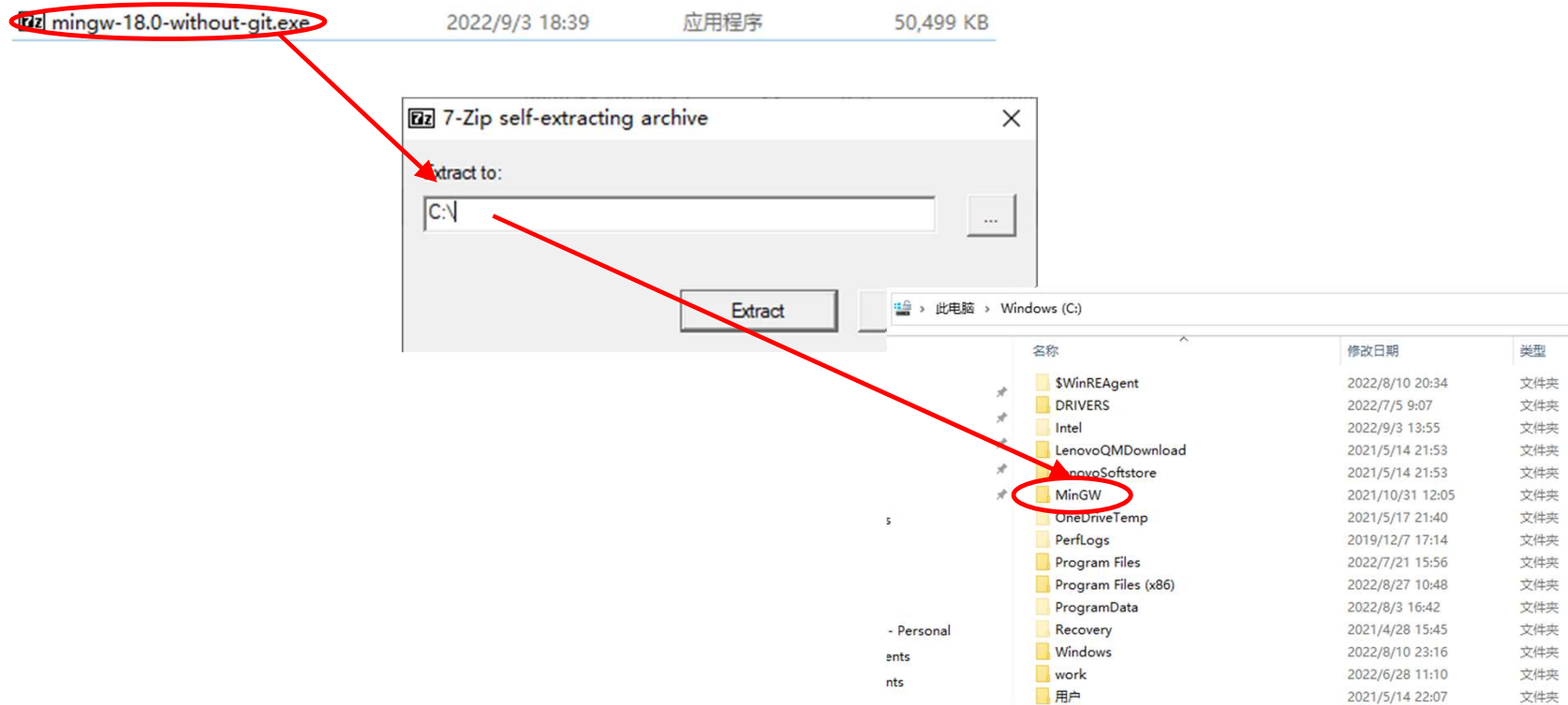
Installing g++

- Setup environmental variables
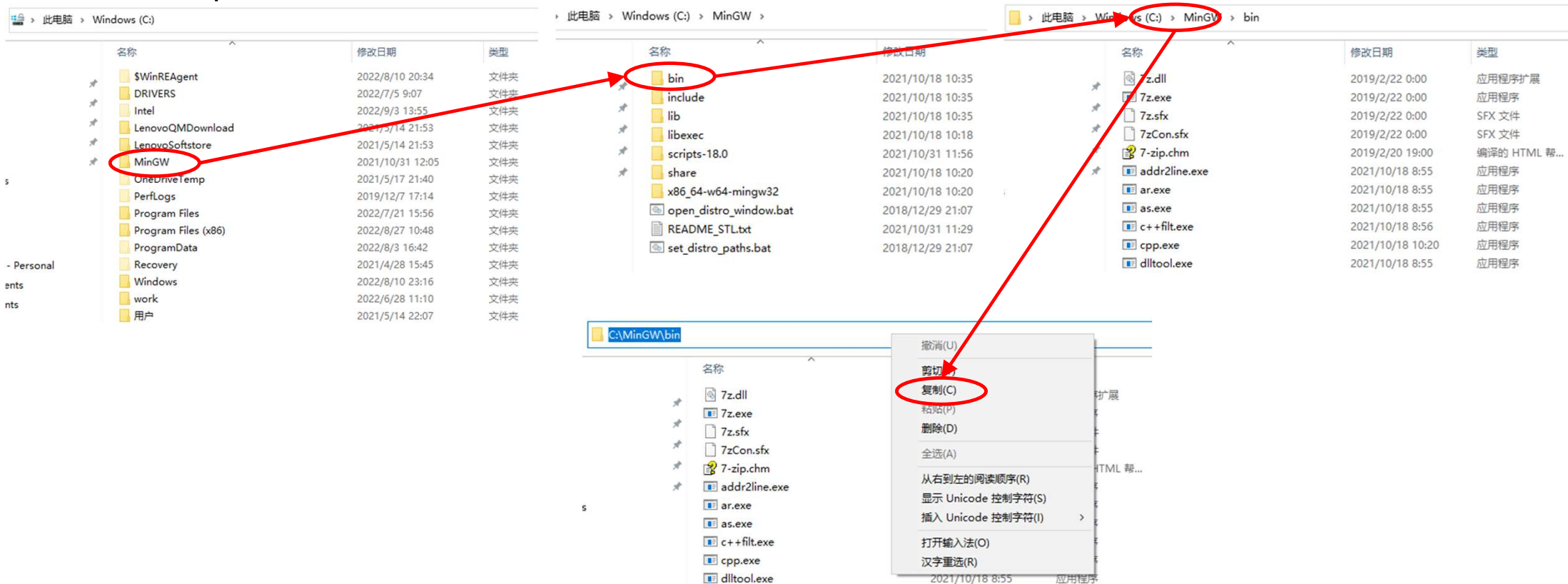
Installing g++
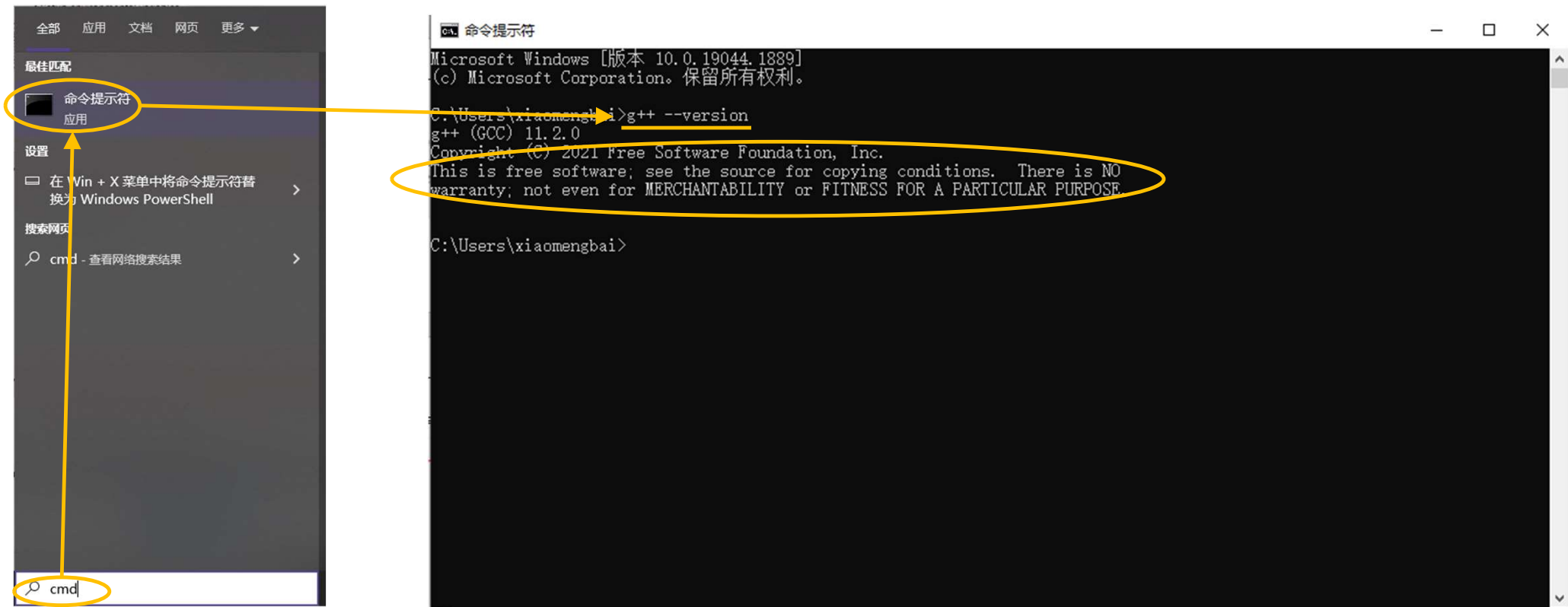
- Setup environmental variables
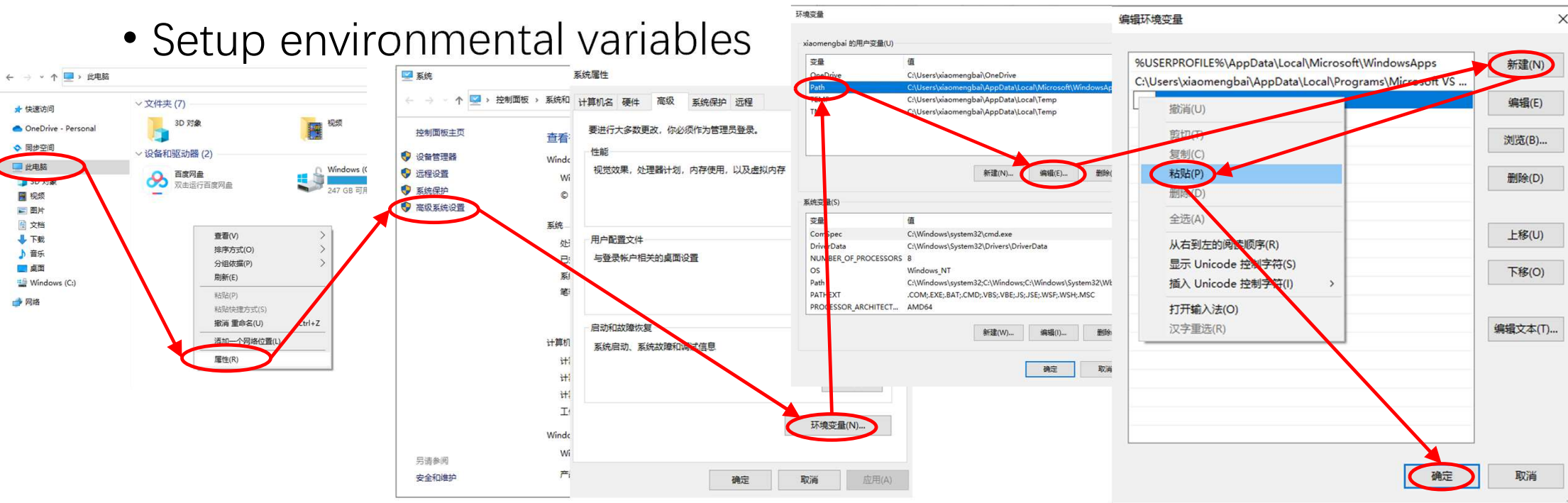
Installing g++

- Check if successful install

Installing Visual Studio Code

- download： https://code.visualstudio.com/download
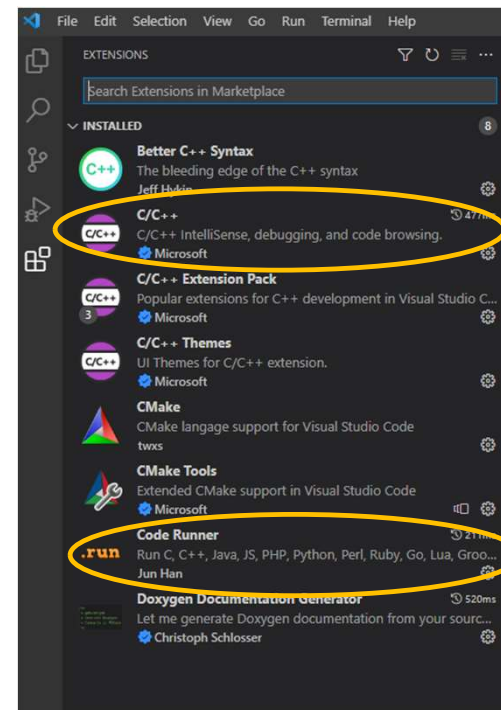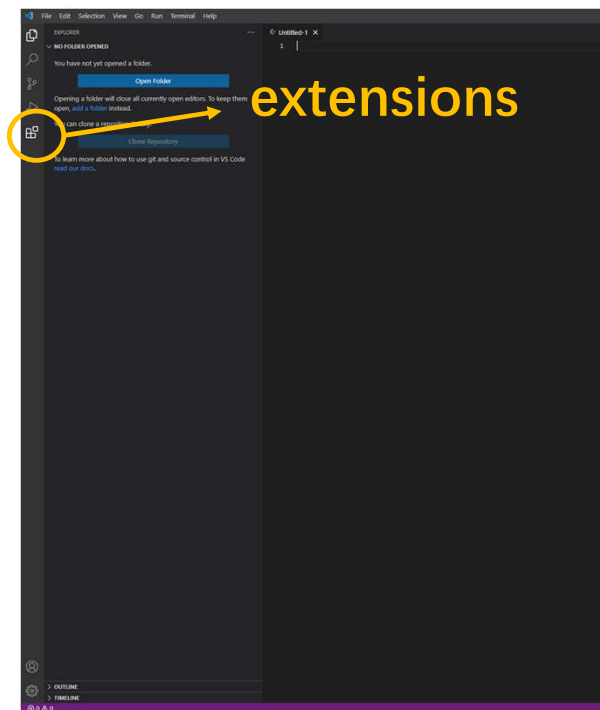
Installing VS Code

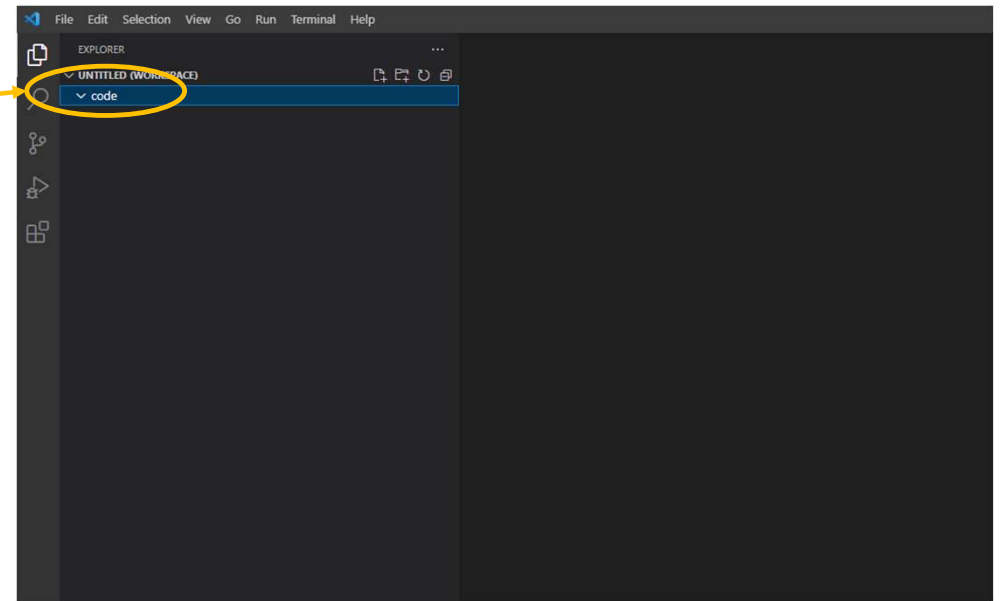- Install VS Code

- Open VS Code

Installing VS Code

- Install Extensions: **C/C++** and **Code Runner**

Hello.cpp

- Open a folder in the workspace
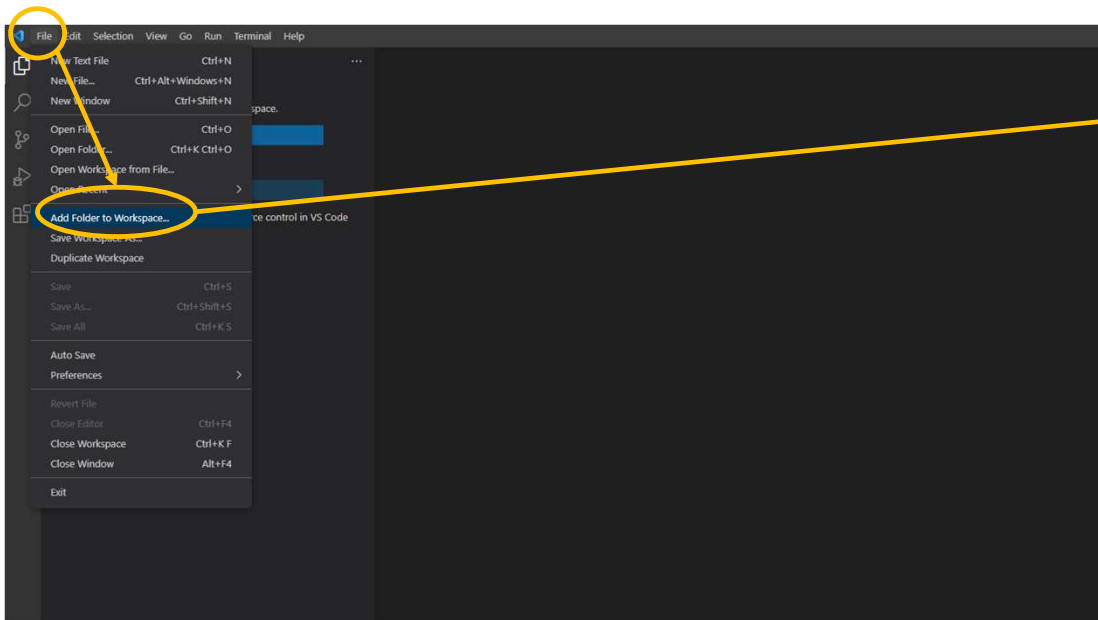
Hello.cpp

- Create a new file `help.cpp`

Hello.cpp

- Write the code


```cpp
#include <stdio.h>

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

Save (Ctrl+S)
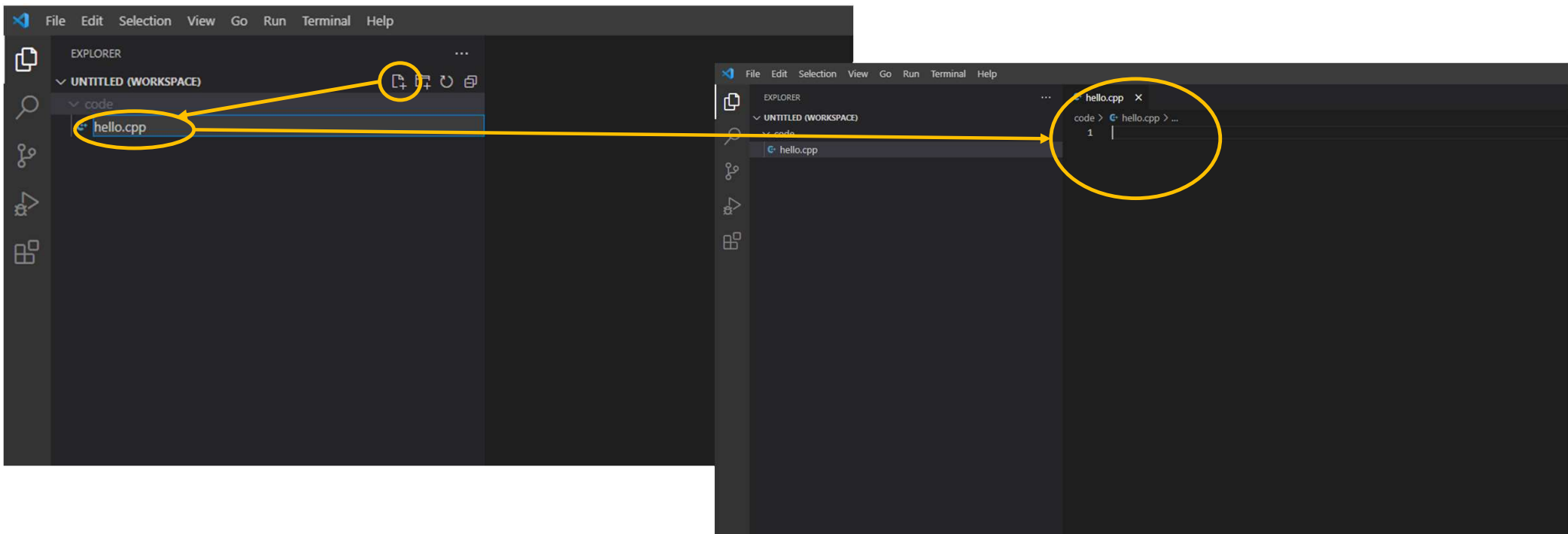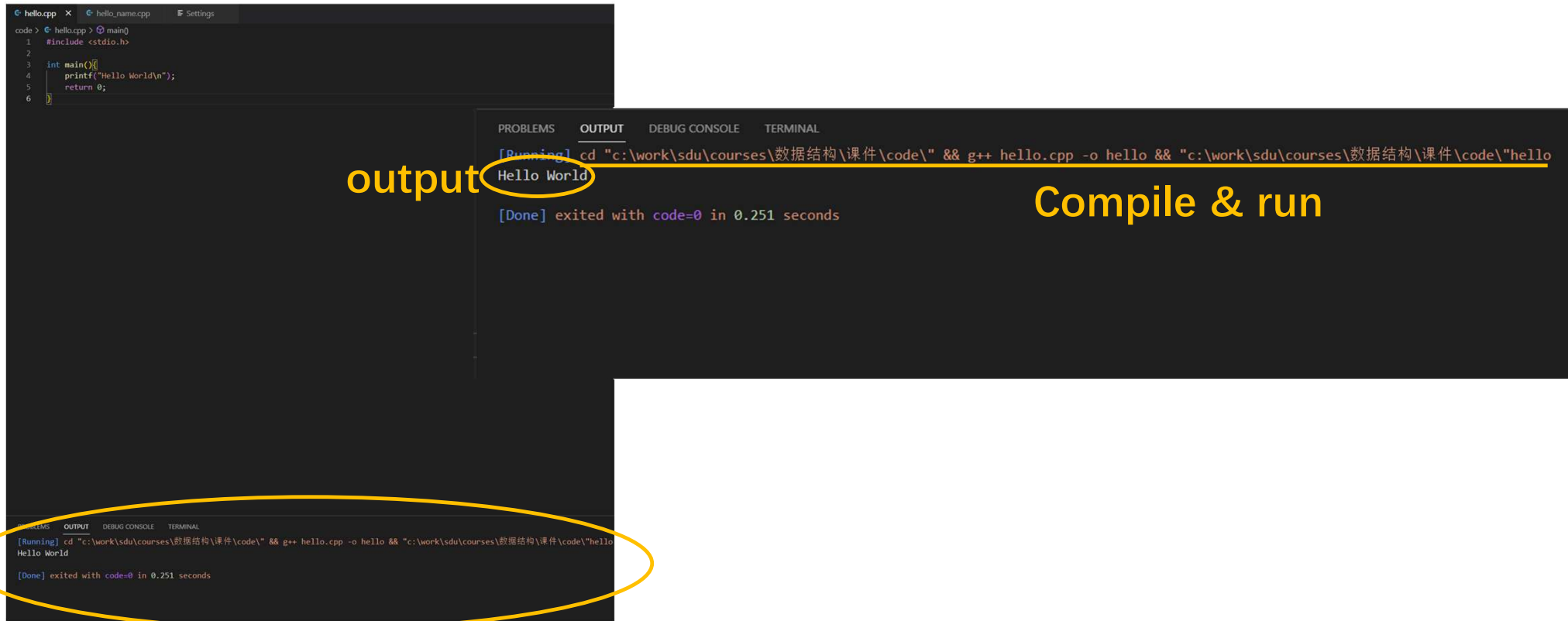
`Hello.cpp`

- Run the code
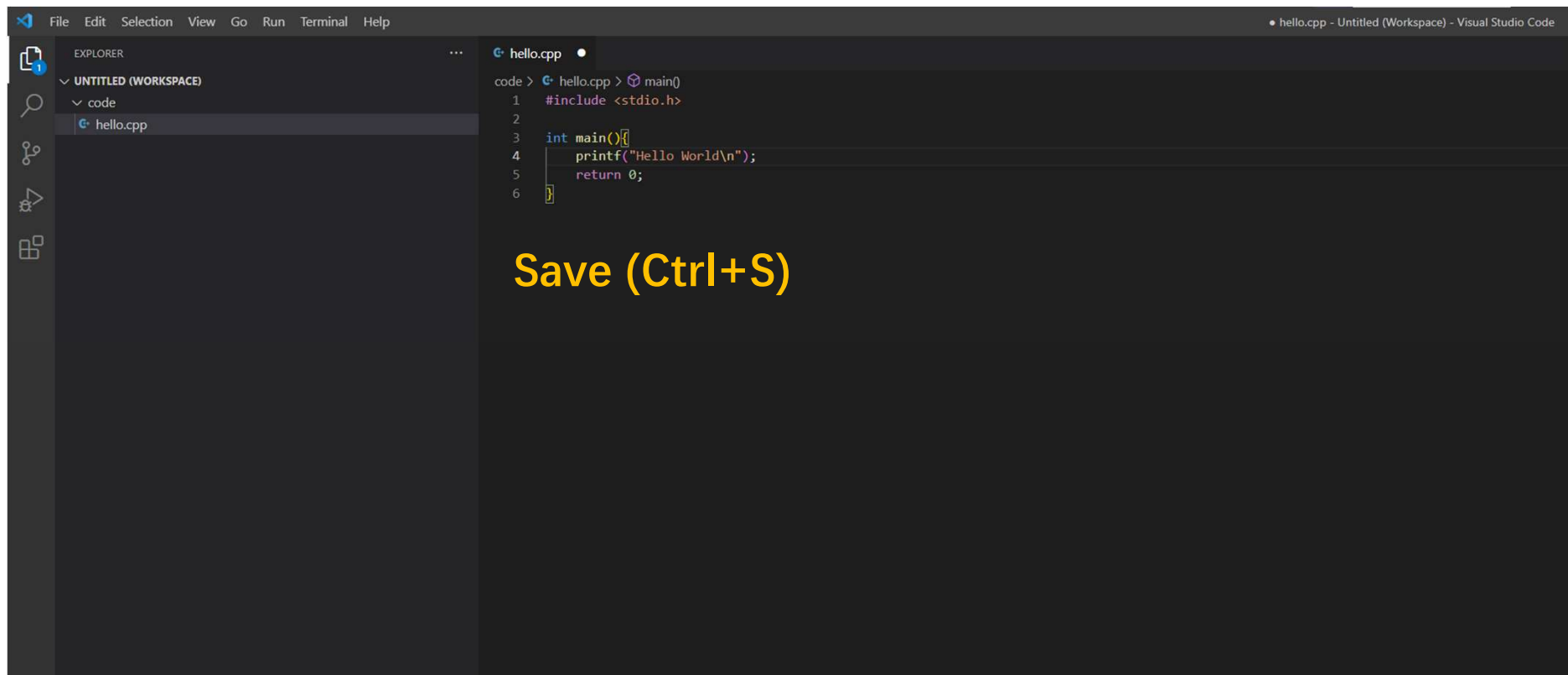

```
hello.cpp ×    hello_name.cpp    Settings
code > hello.cpp > main()
1   #include <stdio.h>
2
3   int main(){
4       printf("Hello World\n");
5       return 0;
6   }
```

PROBLEMS   **OUTPUT**   DEBUG CONSOLE   TERMINAL

[Running] cd "c:\work\sdu\courses\数据结构\课件\code\" && g++ hello.cpp -o hello && "c:\work\sdu\courses\数据结构\课件\code\"hello

output Hello World

Compile & run

[Done] exited with code=0 in 0.251 seconds

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

[Running] cd "c:\work\sdu\courses\数据结构\课件\code\" && g++ hello.cpp -o hello && "c:\work\sdu\courses\数据结构\课件\code\"hello
Hello World

[Done] exited with code=0 in 0.251 seconds

Configure to run in a terminal

- A program accepting inputs


```cpp
#include <stdio.h>

int main(){
    char firstName[64];
    char lastName[64];

    printf("Your first name: ");
    scanf("%s", firstName);
    printf("Your last name: ");
    scanf("%s", lastName);
    printf("Hello! %s %s\n", firstName, lastName);
    return 0;
}
```
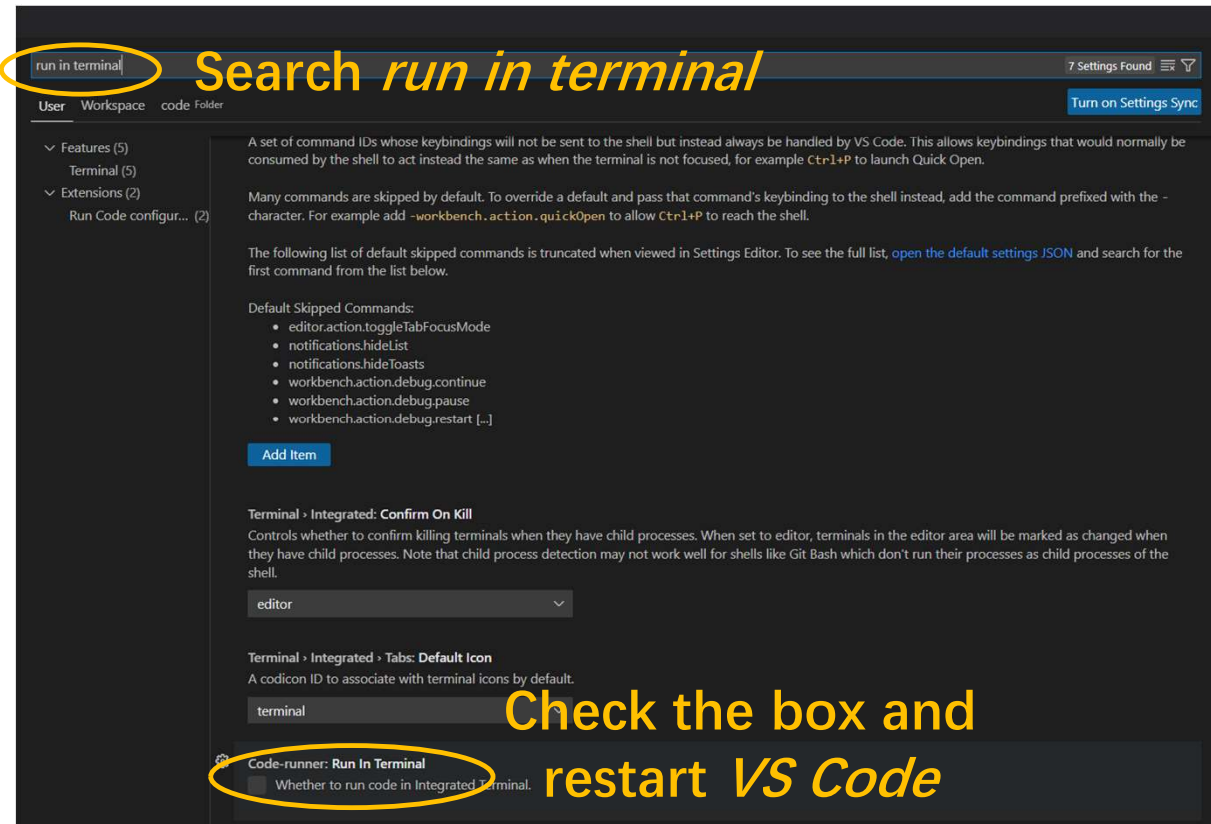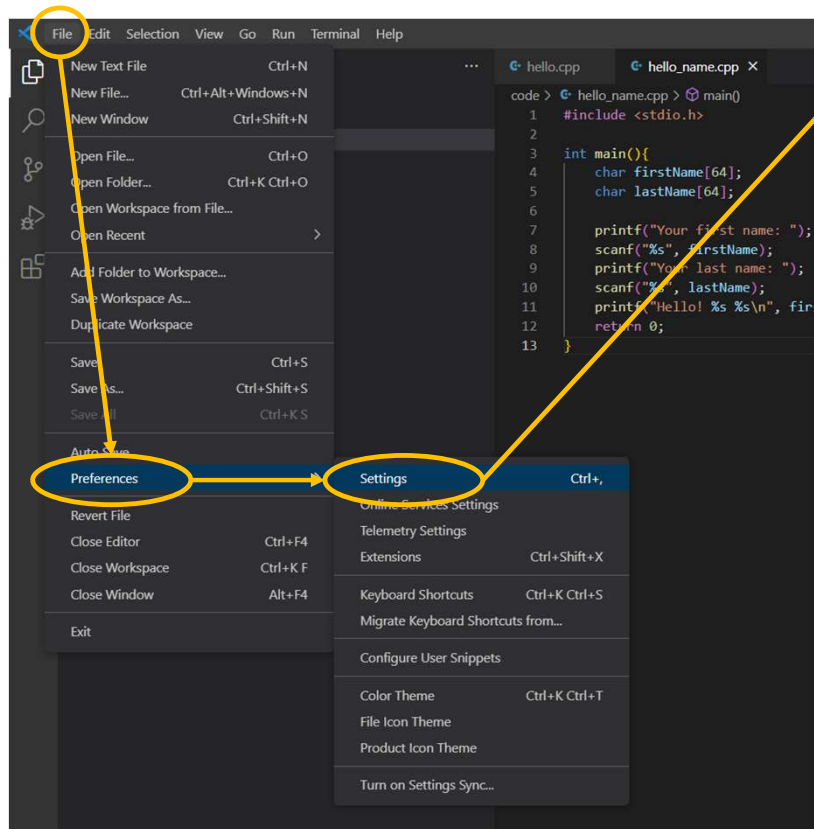
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

[Running] cd "c:\work\sdu\courses\数据结构\课件\code\" && g++ hello_name.cpp -o hello_name && "c:\work\sdu\courses\数据结构\课件\code\"hello_name

Cannot input
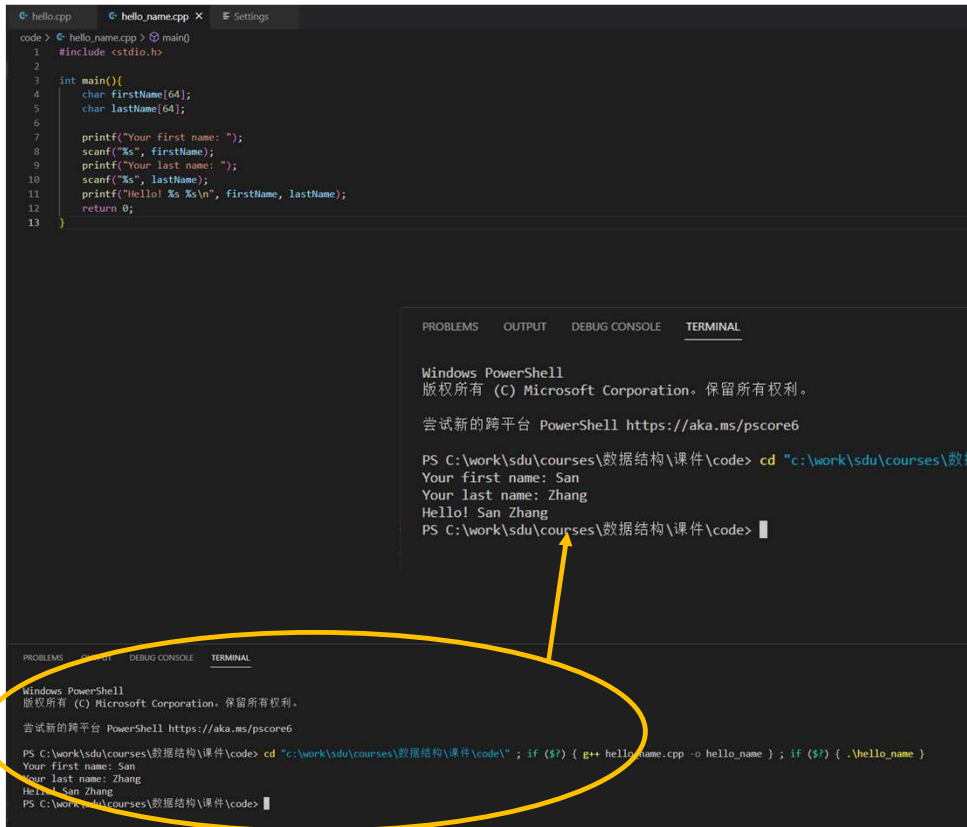
Ctrl + Alt + M: terminate the running program

Configure to run in a terminal

- Configure the code-runner extension

Configure to run in a terminal

- Run the program again

Run C/C++ in Linux

- g++ and nano/vim/emacs/···

```
~/code$ nano hello.cpp_

  GNU nano 4.8                        hello.cpp                        Modified
#include <stdio.h>

int main(){
    printf("Hello World\n");
    return 0;
}_




^G Get Help   ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos    M-U
^X Exit       ^R Read File   ^\ Replace     ^U Paste Text  ^T To Spell    ^_ Go To Line M-E
```

Save & Exit: Ctrl + x, y, Enter

```
xiaomb@LAPTOP-IUK2M5JJ:~/code$ nano hello.cpp
xiaomb@LAPTOP-IUK2M5JJ:~/code$ g++ hello.cpp -o hello
xiaomb@LAPTOP-IUK2M5JJ:~/code$ ./hello
Hello World
xiaomb@LAPTOP-IUK2M5JJ:~/code$ _
```

Compile & run