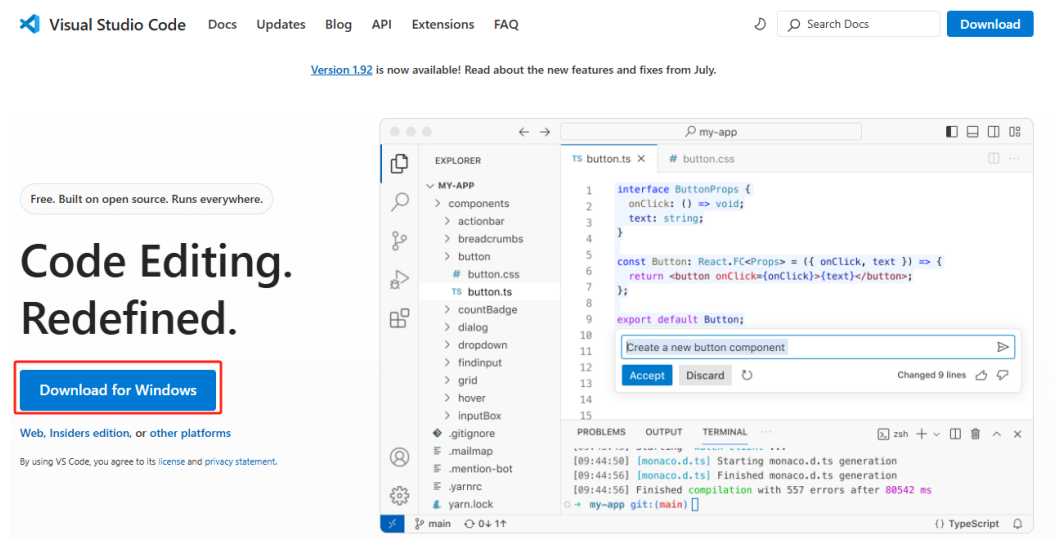


## 实验 1： 熟悉上机实验环境及初级编程

### Experiment 1: Lab Environment and Basic Programming

1. (熟悉 C/C++ 集成开发环境与设置。) Setup and config the Visual Studio Code and the C/C++ environment. Or use the CodeBlocks that has been installed on the lab computer.

- 1.1. download Visual Studio Code and install it



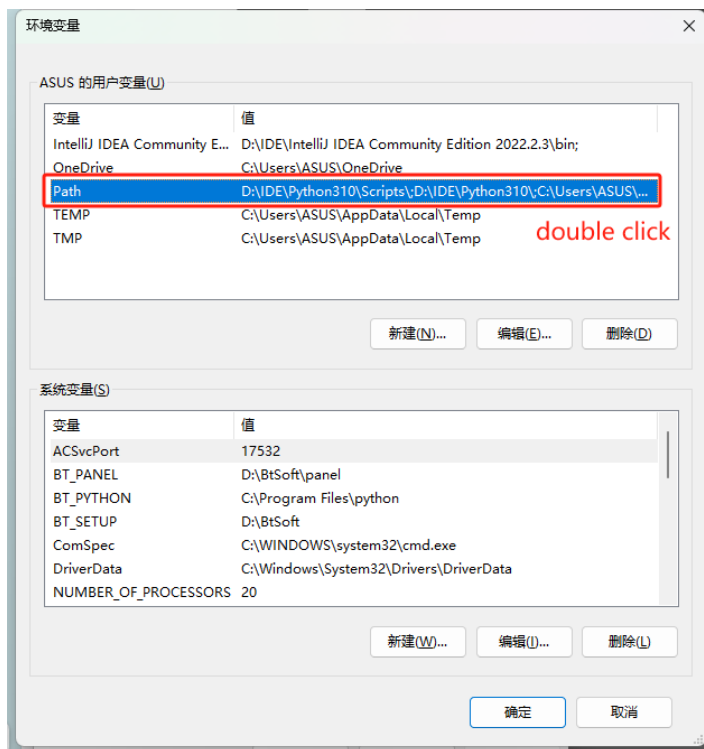
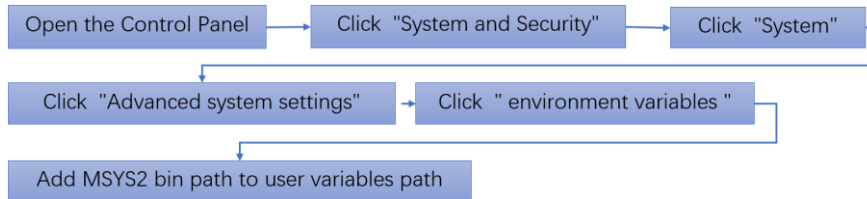
- 1.2. download [MinGW-W64](#) and install it

Assets 15		
msys2-base-x86_64-20240727.packages.txt	1.46 KB	3 weeks ago
msys2-base-x86_64-20240727.sfx.exe	46.5 MB	3 weeks ago
msys2-base-x86_64-20240727.sfx.exe.sha256	101 Bytes	3 weeks ago
msys2-base-x86_64-20240727.sfx.exe.sig	566 Bytes	3 weeks ago
msys2-base-x86_64-20240727.tar.xz	46.7 MB	3 weeks ago
msys2-base-x86_64-20240727.tar.xz.sha256	100 Bytes	3 weeks ago
msys2-base-x86_64-20240727.tar.xz.sig	566 Bytes	3 weeks ago
msys2-base-x86_64-20240727.tar.zst	47.5 MB	3 weeks ago
msys2-base-x86_64-20240727.tar.zst.sha256	101 Bytes	3 weeks ago
msys2-base-x86_64-20240727.tar.zst.sig	566 Bytes	3 weeks ago
msys2-x86_64-20240727.exe	79.4 MB	3 weeks ago
msys2-x86_64-20240727.exe.sha256	92 Bytes	3 weeks ago
msys2-x86_64-20240727.exe.sig	566 Bytes	3 weeks ago
Source code (zip)		Apr 5
Source code (tar.gz)		Apr 5

- 1.3. After finishing the installation, open MSYS2 and enter the following command to install the toolchain:

```
pacman -S --needed base-devel mingw-w64-ucrt-x86_64-toolchain
```

- 1.4. Configure system environment variables



- 1.5. use the following commands to test the installation of environment:

```

C:\Windows\system32\cmd.exe
Microsoft Windows [版本 10.0.22631.3296]
(c) Microsoft Corporation. 保留所有权利。

C:\Users\27437>gcc --version
gcc (Rev3, Built by MSYS2 project) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

C:\Users\27437>g++ --version
g++ (Rev3, Built by MSYS2 project) 13.2.0
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

C:\Users\27437>gdb --version
GNU gdb (GDB) 14.1
Copyright (C) 2023 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
  
```

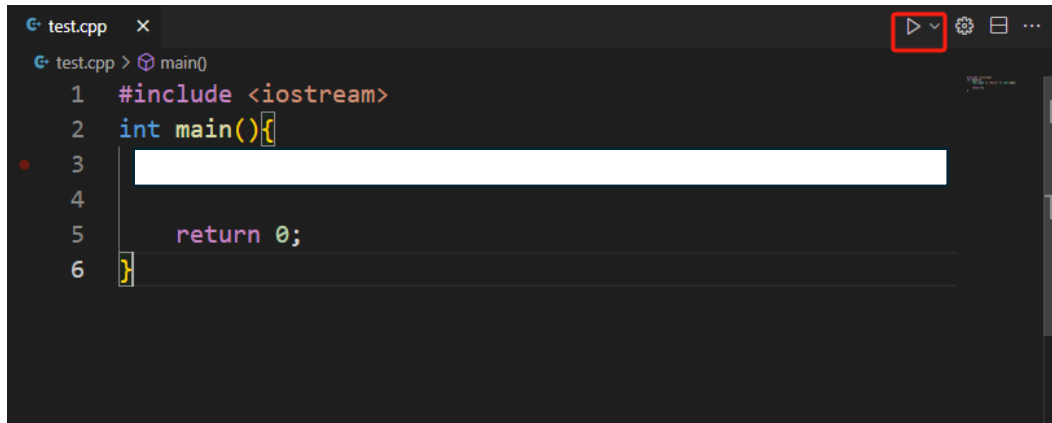
- 1.6. open Visual Studio Code, search for "C++" in extensions and install it:

Test whether vscode can run c++ files, or use following commands

```
g++ -o test test.cpp
```

```
./test
```

2. (实现 “Hello World” 程序。 ) Implement the “Hello World” program



```
test.cpp x
test.cpp > main()
1 #include <iostream>
2 int main(){
3
4
5     return 0;
6 }
```

3. (不同类型的变量的定义和赋值。 ) The definition and assignment of different types of variables.

- 3.1. Create a string variable, assign a string value to it.
- 3.2. Create an int variable, assign an integer value to it.
- 3.3. Create a float variable, assign a float value to it.
- 3.4. Print out the string, the int, and the float variables together.