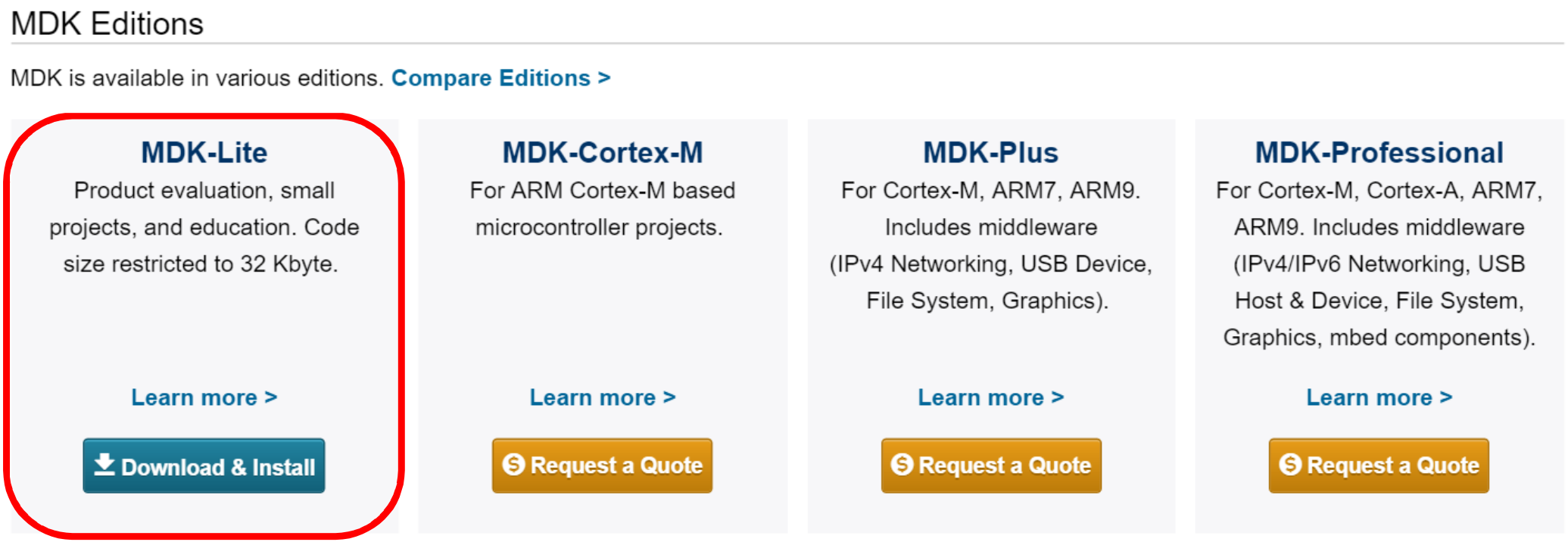
Lesson 0
Setup Environment

Lecturer: Harvard Tseng

Keil MDK Version 5 Development Kit

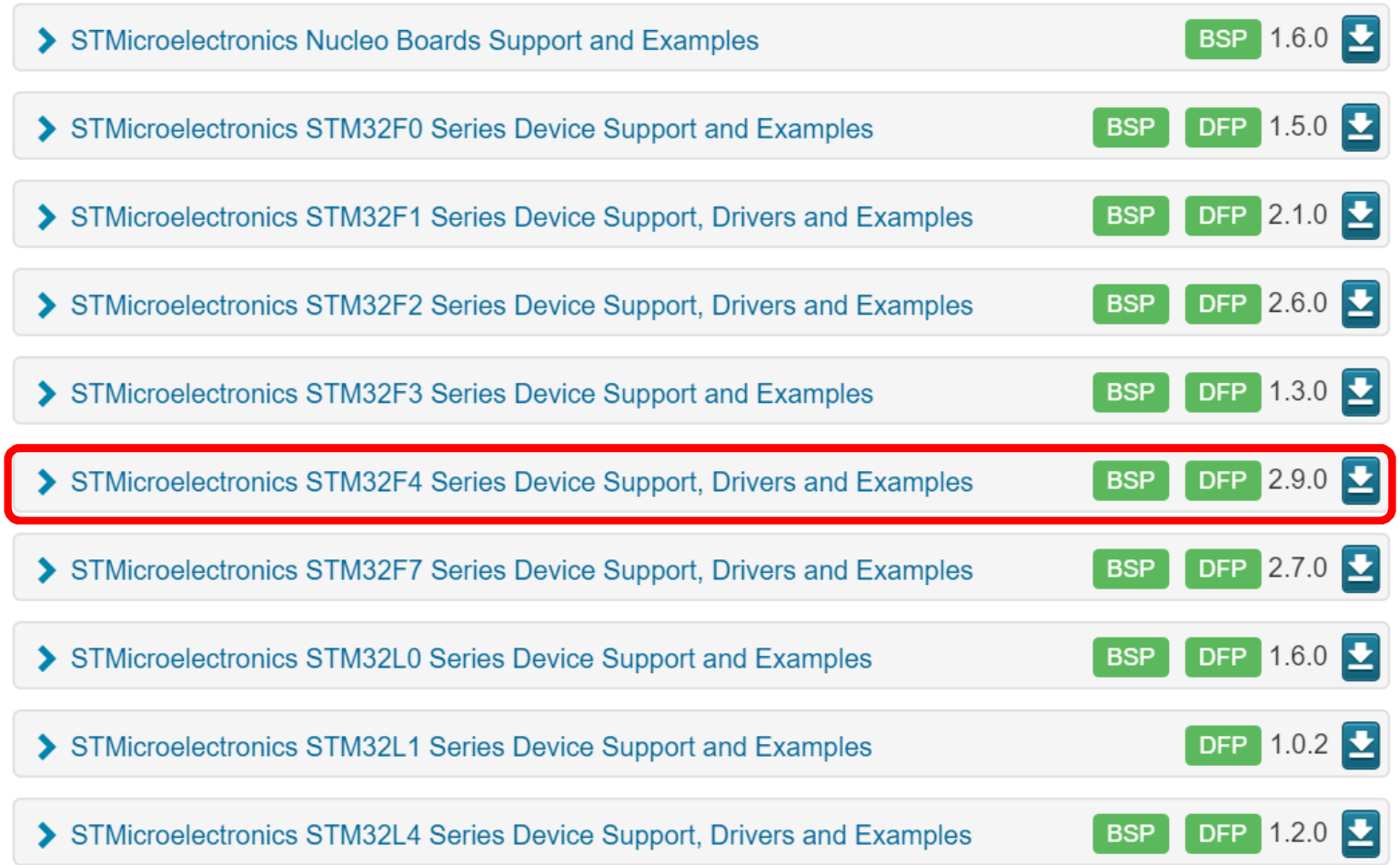
Step1. Install IDE

- Download from Keil.

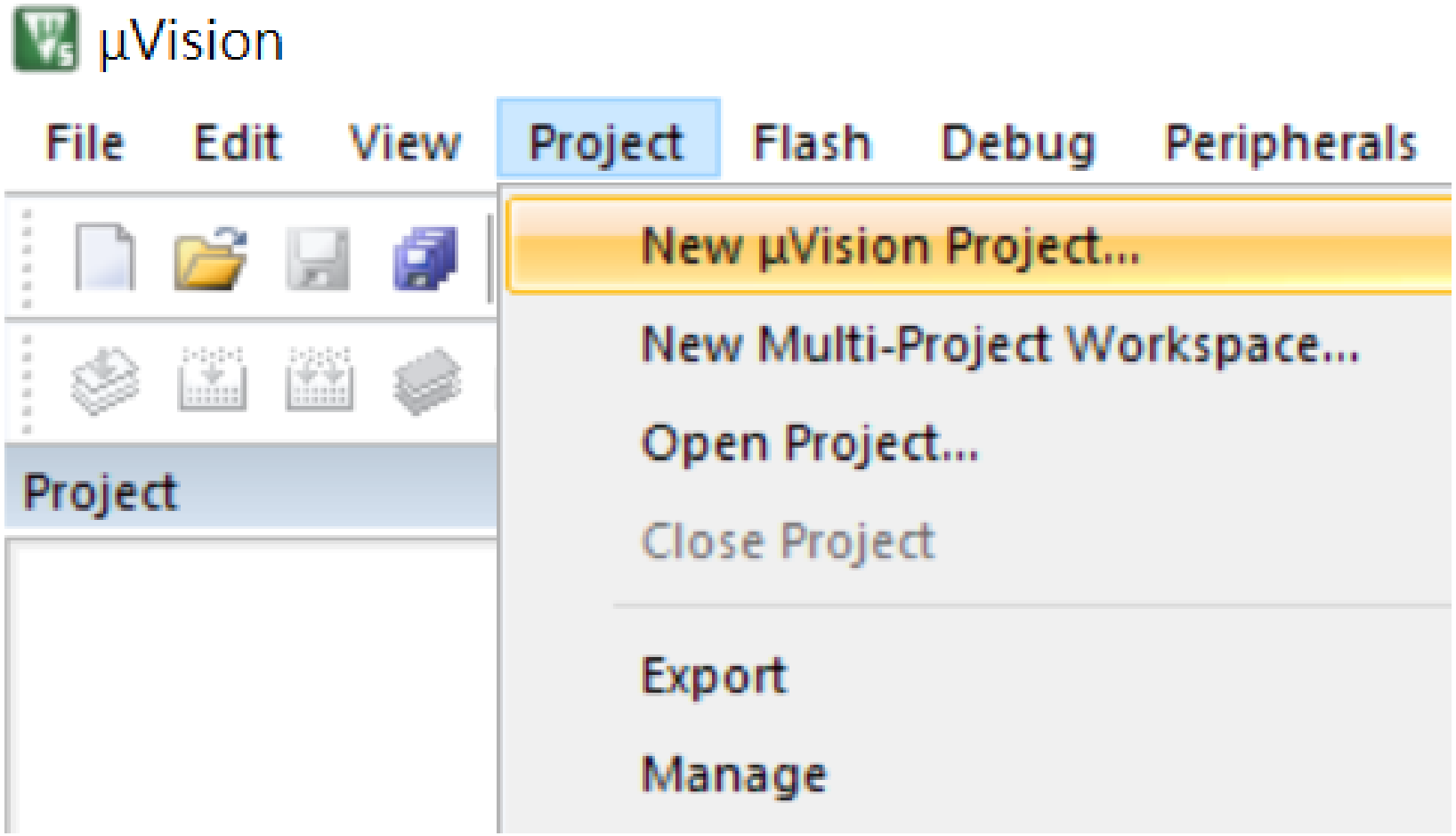


Step2. Install Software Packs

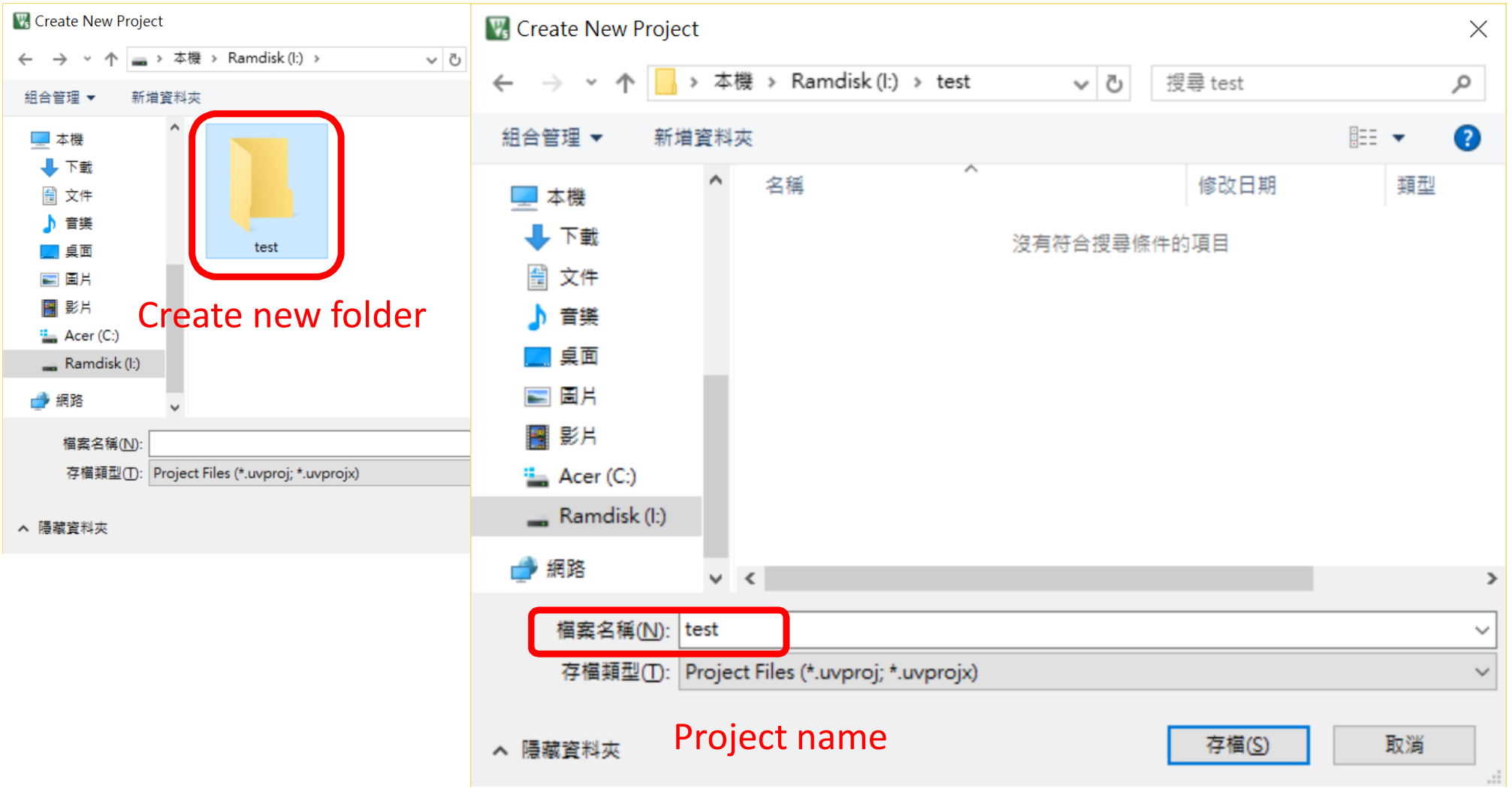
- Download from Keil.



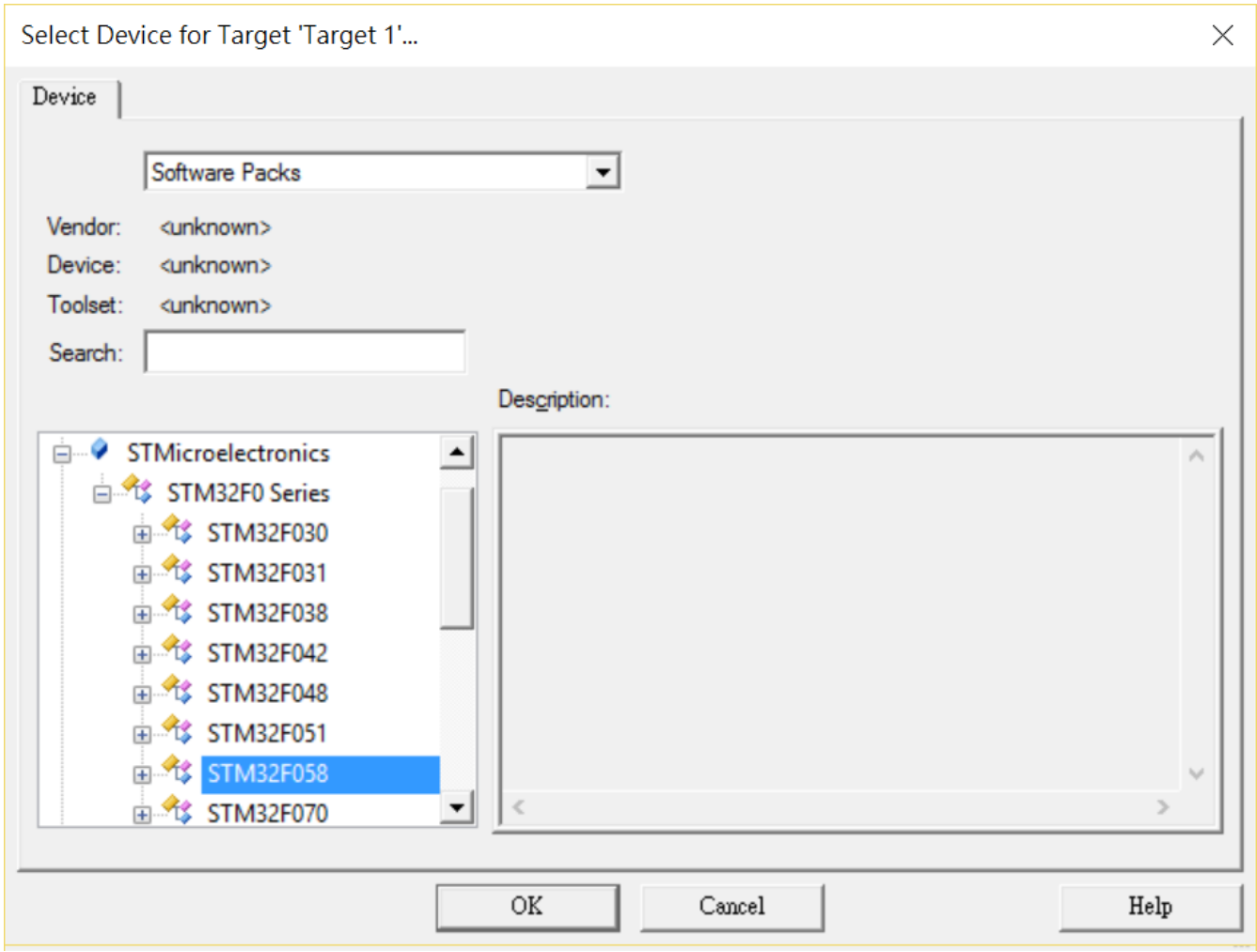
Step3. Create a New Project



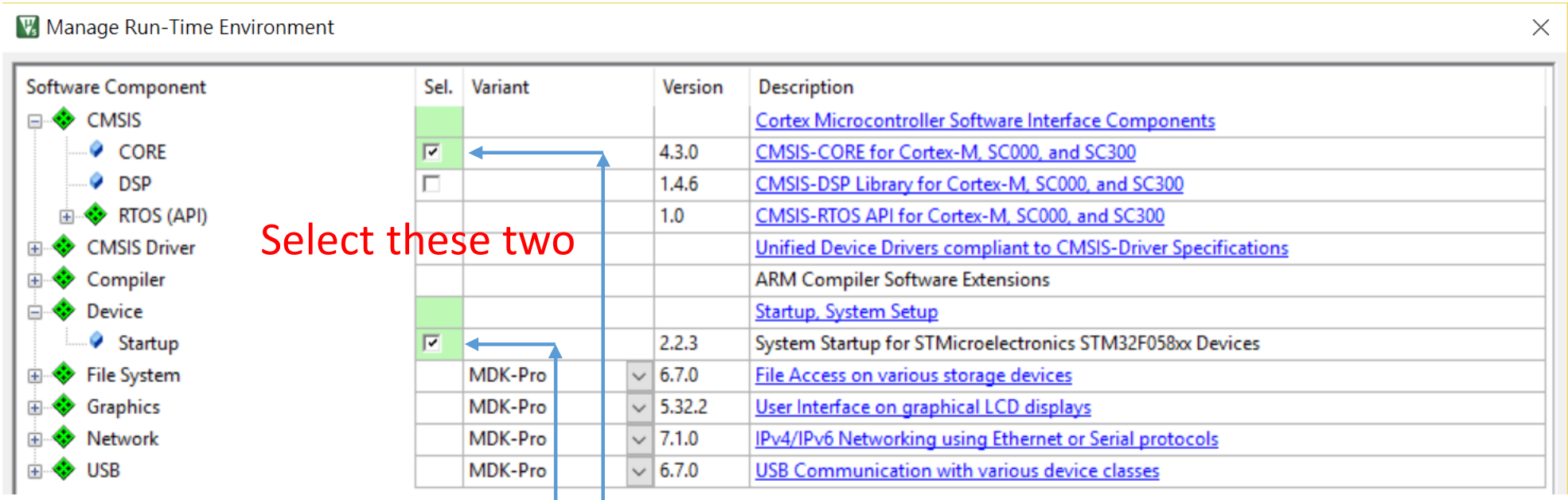
Step3. Create a New Project



Step4. Select Device



Step5. Add Software Component



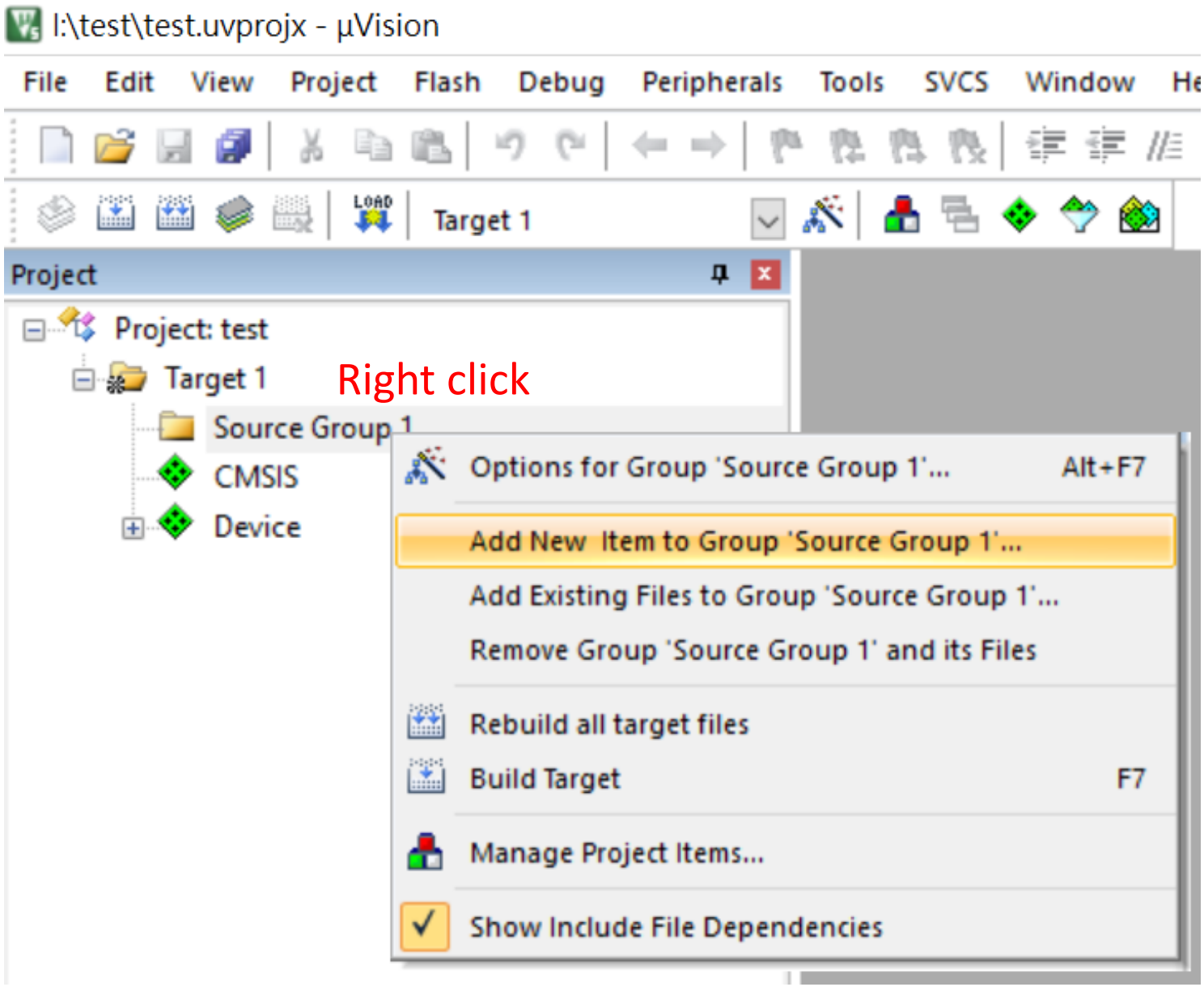
Select these two

core_cmx.h

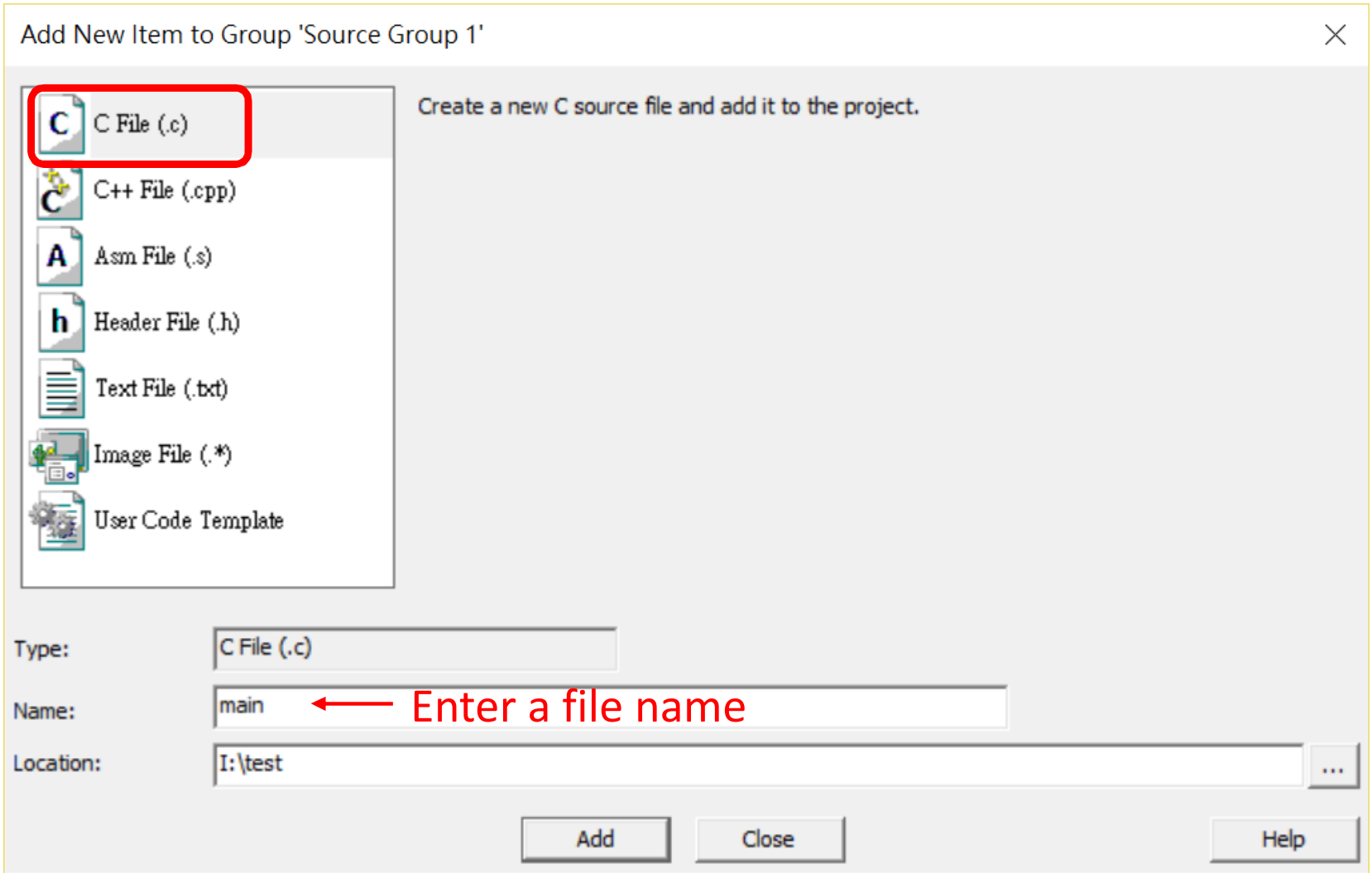
startup_<device>.s

system_<device>.c

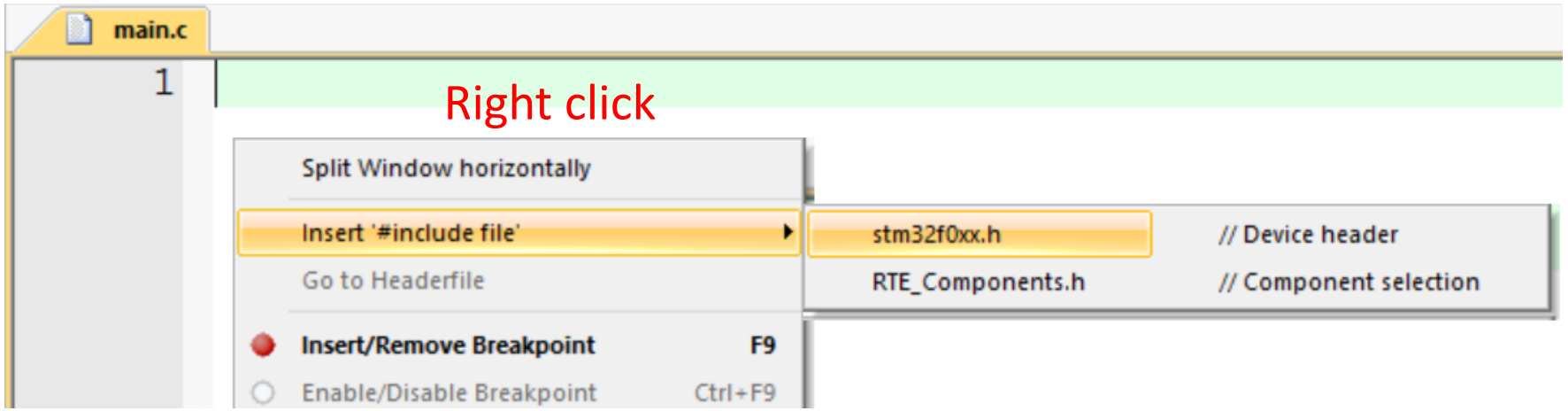
Step6. Add main.c

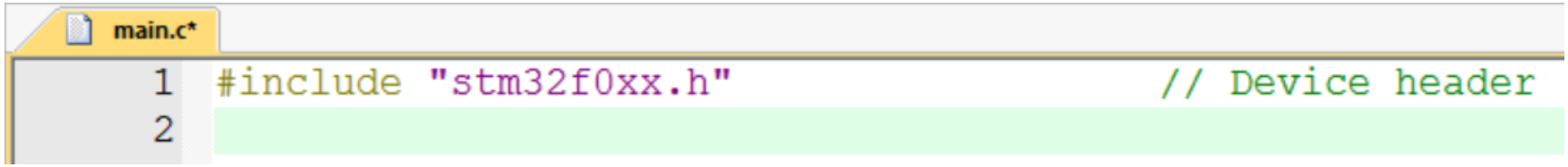


Step6. Add main.c

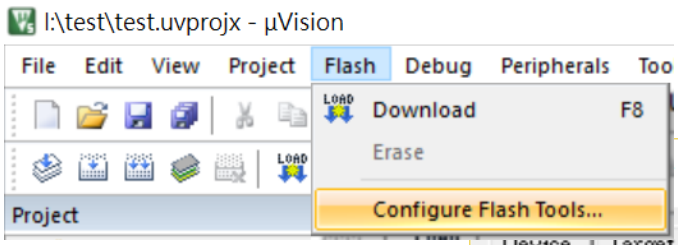


Step7. Include Device Header





Step8. Configure Flash



C/C++

Target 'Target 1'

Device | Target | Output | Listing | User | C/C++ | Asm | Linker | Debug | Utilities

Preprocessor Symbols

Define:

Undefine:

Language / Code Generation

- [ ] Execute-only Code
- Optimization: Level 0 (-O0)
- [ ] Optimize for Time
- [ ] Split Load and Store Multiple
- [x] One ELF Section per Function
- [ ] Strict ANSI C
- [ ] Enum Container always int
- [ ] Plain Char is Signed
- [ ] Read-Only Position Independent
- [ ] Read-Write Position Independent

Warnings: All Warnings

- [ ] Thumb Mode
- [ ] No Auto Includes
- [x] C99 Mode

Click C99 Mode

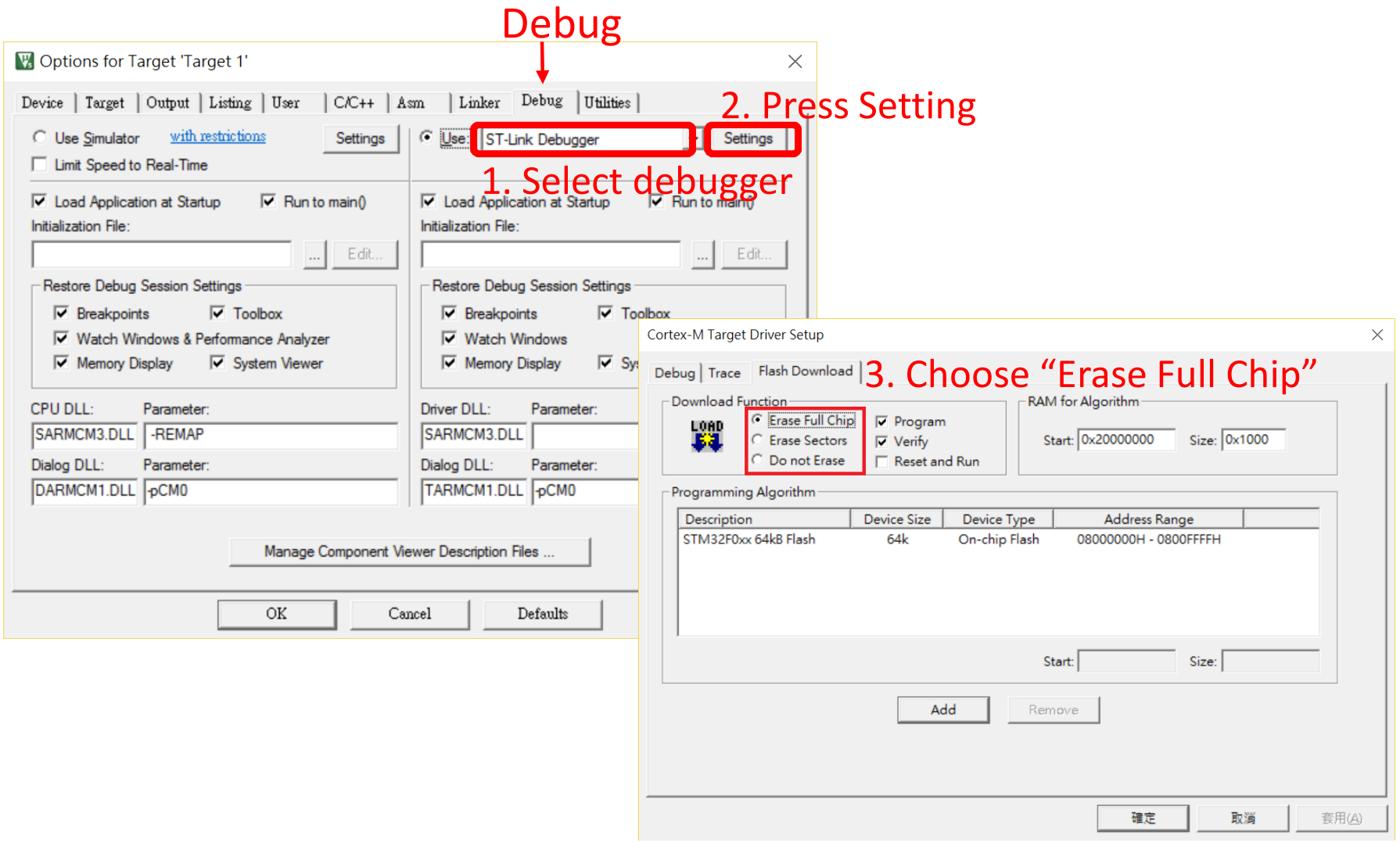
Include Paths

Misc Controls

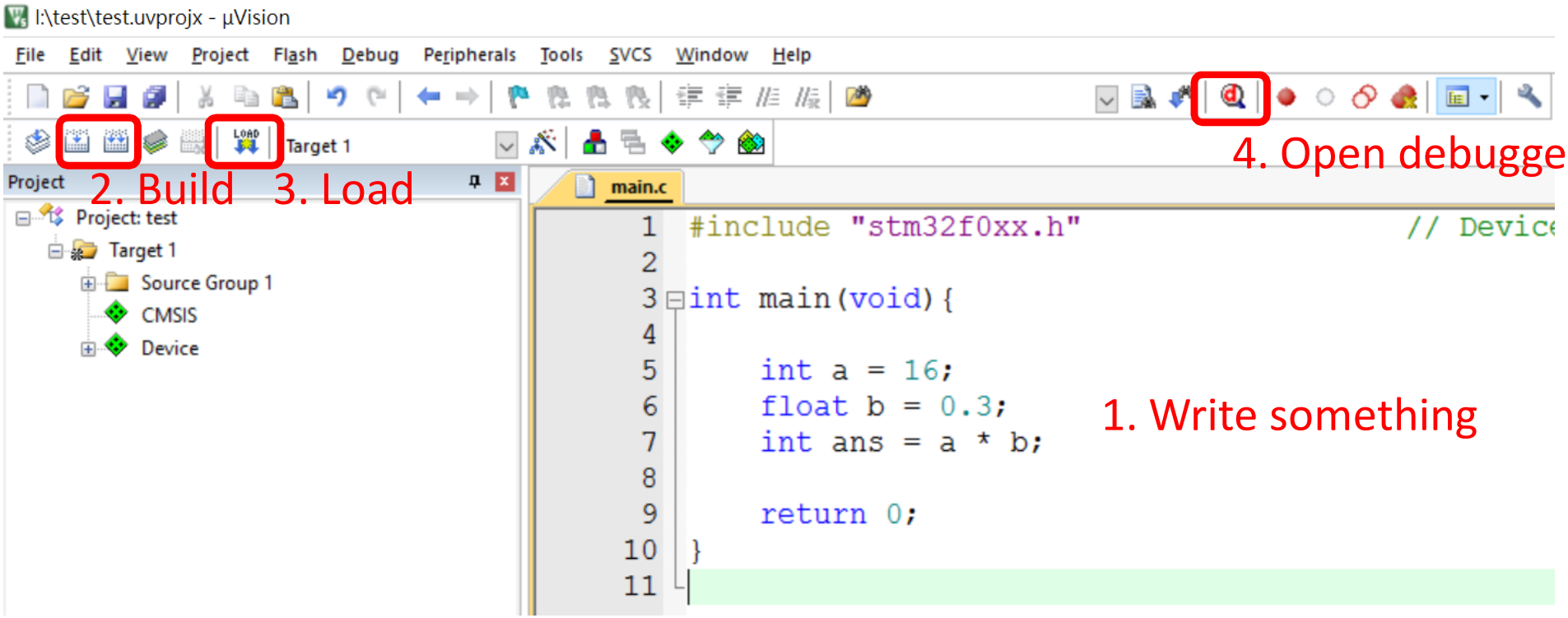
Compiler control string: --c99 -c --cpu Cortex-M0 -D__EVAL -g -O0 --apcs=interwork --split_sections -I I:\test\RTE

OK | Cancel | Defaults | Help

Step8. Configure Flash

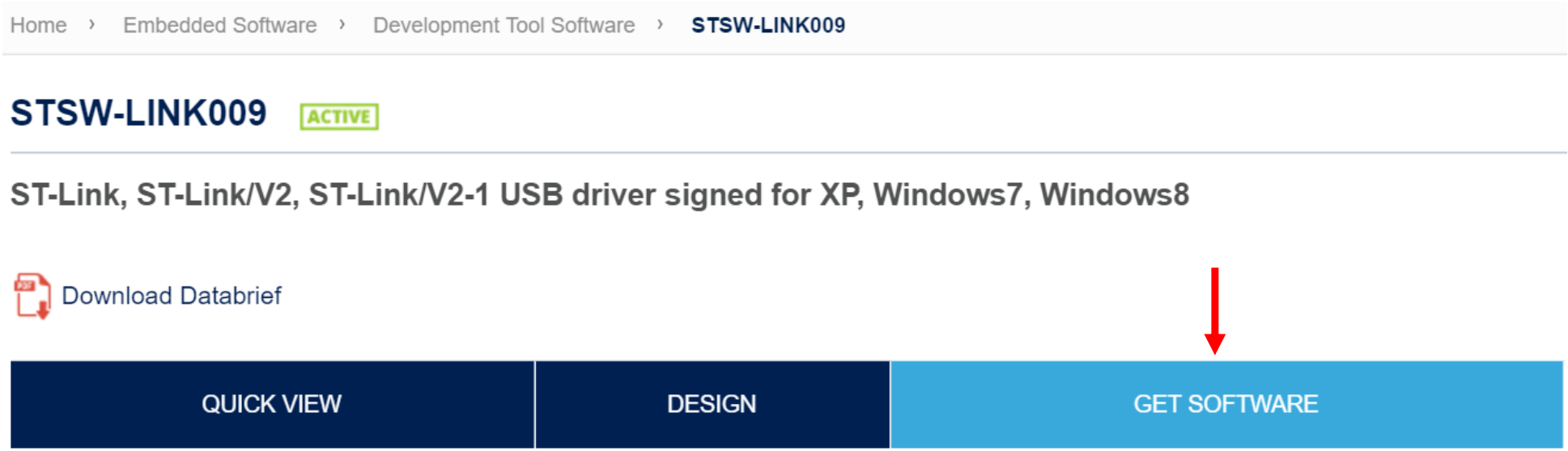


Step9. Test


I:\test\test.uvprojx - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Target 1
2. Build
3. Load
4. Open debugger
Project
Project: test
Target 1
Source Group 1
CMSIS
Device
main.c
1 #include "stm32f0xx.h" // Device
2
3 int main(void){
4
5 int a = 16;
6 float b = 0.3;
7 int ans = a * b;
8
9 return 0;
10 }
11
1. Write something

Install Debugger USB Driver

- If your board debugger doesn't work, download from ST.



Content

- Introduction
- Hardware
- Software
- Exercise

Exercise

Do it back home.

Basic C Operator

main.c

```c
#include "stm32f0xx.h"

int a = 3, b = 6, ans;
int main(void){
    while(1){
        ans = a + b;
        ans = a - b;
        ans = a * b;
        ans = a / b;
        ans = a % b;
        ans = a | b;
        ans = a & b;
        ans = a ^ b;
        ans = ~ans;
    }
    return 0;
}
```

Use Debugger

- Review answer step by step.
- Monitor the variable you want.
- Set break points.