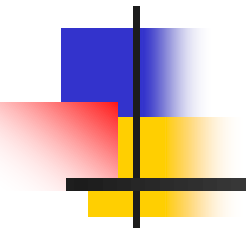
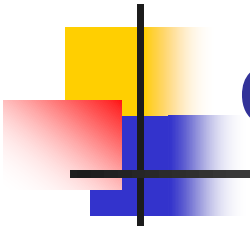


Embedded System Software

(uC/OS-II 포팅 실습)

Fall, 2017

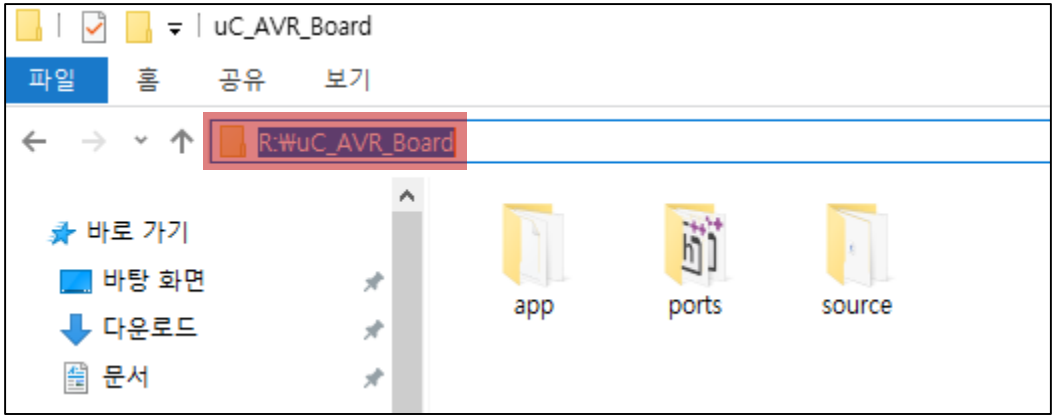


Outline

- 컴파일 환경 설정
- 컴파일
- .hex 파일 전송

컴파일 환경 설정 (1)

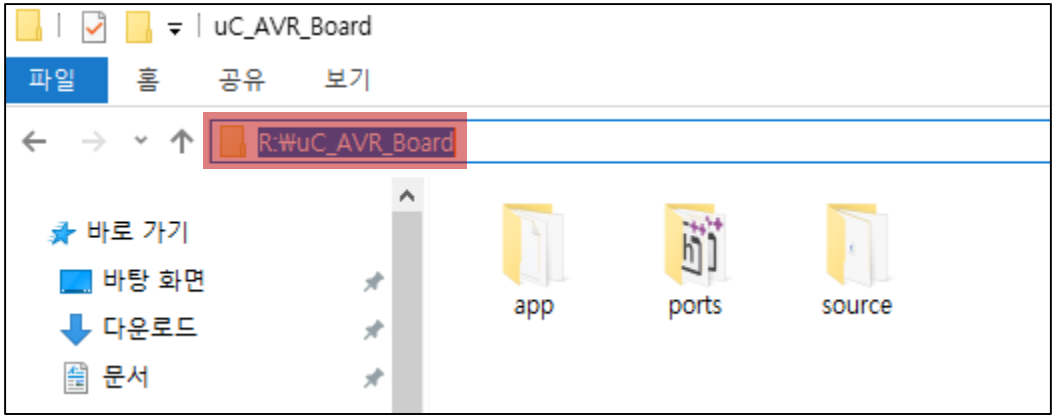
- 1. 압축된 예제 파일 다운로드
  Download compressed file
- 2. 임의 경로에 압축 해제
  Unpack wherever you want
  - 슬라이드에서는 R:\uC_AVR_Board 경로 사용
    Directory “R:\uC_AVR_Board” is used on example



컴파일 환경 설정 (2)

- 3. Makefile 수정
  Modify Makefile
  - 3.1 UCOSDIR, PORTDIR

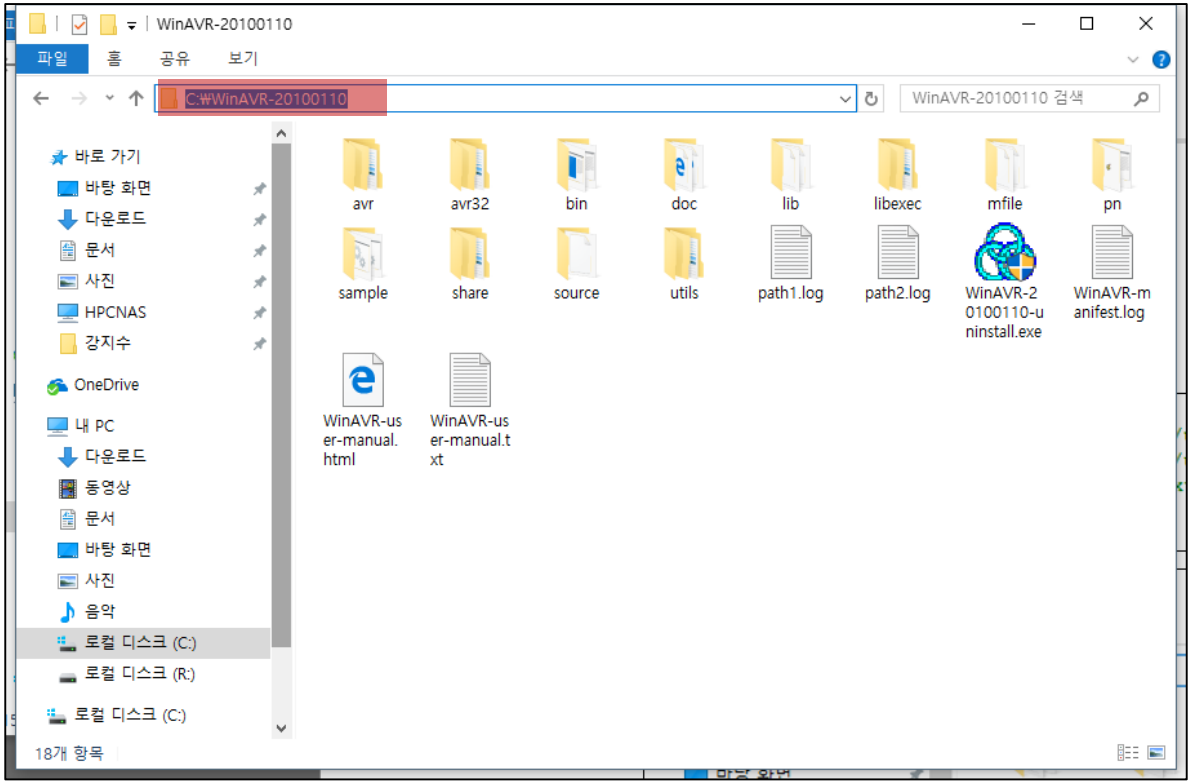
```
55  # If you have uC/OS-II v2.52, use
56  # UCOSDIR = $(wildcard ~/ucos-II/software/uCOS-II/Source)
57  # PORTDIR = $(wildcard ~/Micrium/Software/uCOS-II/Ports/AVR/ATme
58  # With Windows, use something like the next lines
59  UCOSDIR = R:/uC_AVR_Board/source
60  PORTDIR = R:/uC_AVR_Board/ports
```



컴파일 환경 설정 (3)

- 3. Makefile 수정
  Modify Makefile
  - 3.2 DIRAVR

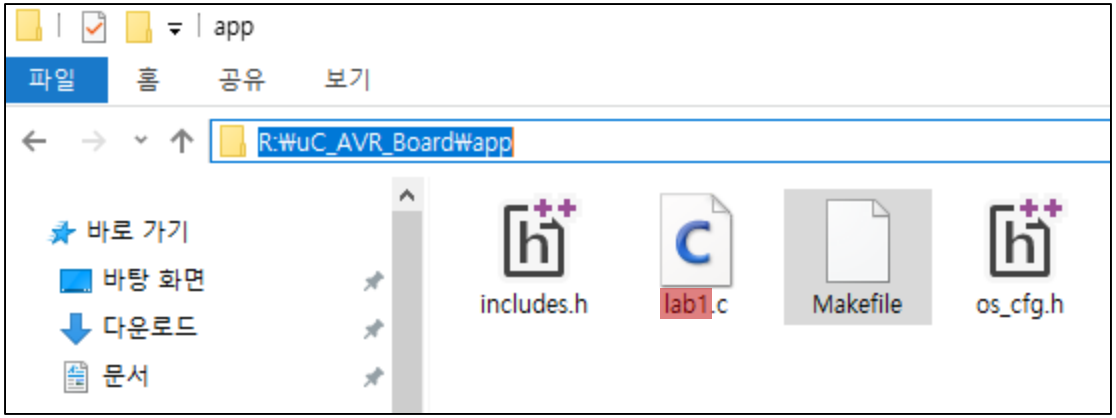
```
178  # Define directories, if needed.
179  DIRAVR = C:\WinAVR-20100110
```



컴파일 환경 설정 (4)

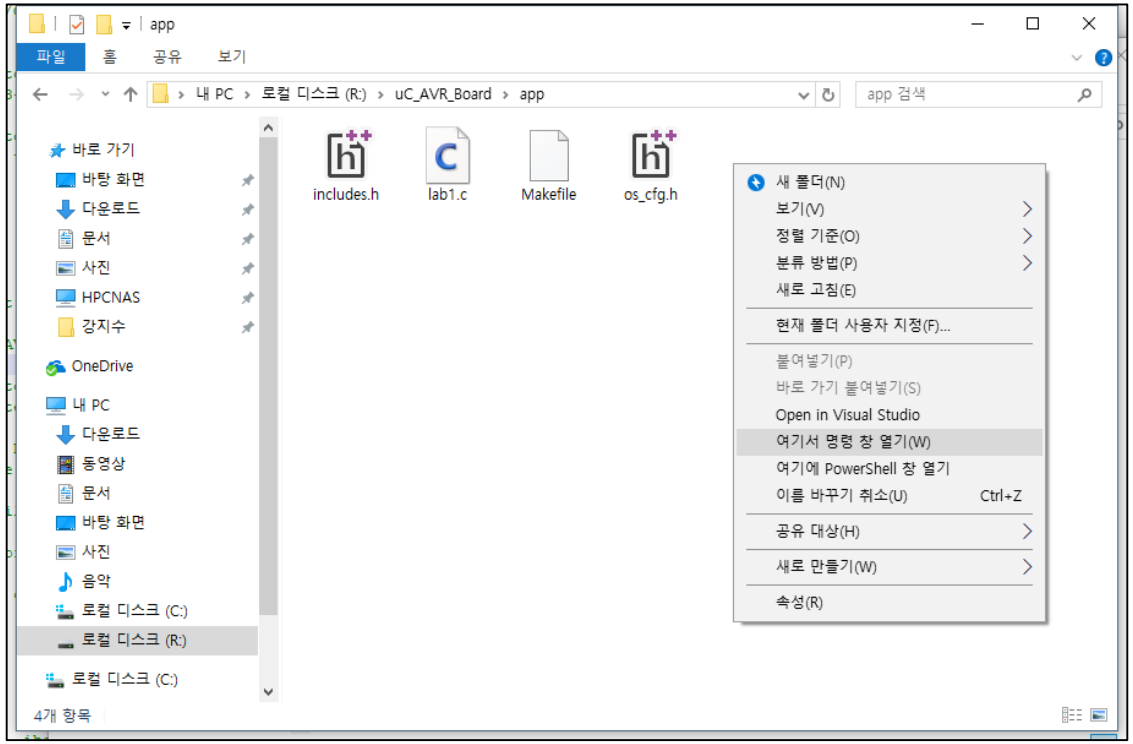
- 3. Makefile 수정
  Modify Makefile
  - 3.3 TARGET (Optional) – without extension

```
43  # Target file name (without extension).
44  TARGET = lab1
```



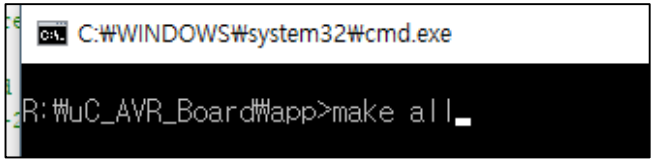
컴파일 (1)

- 1. 경로 이동 “app”
  Move to the directory “app”
- 2. “여기서 명령 창 열기” 클릭
  Click “Open command window here”



컴파일 (2)

- 3. 컴파일 “make all”
  “make all” to compile



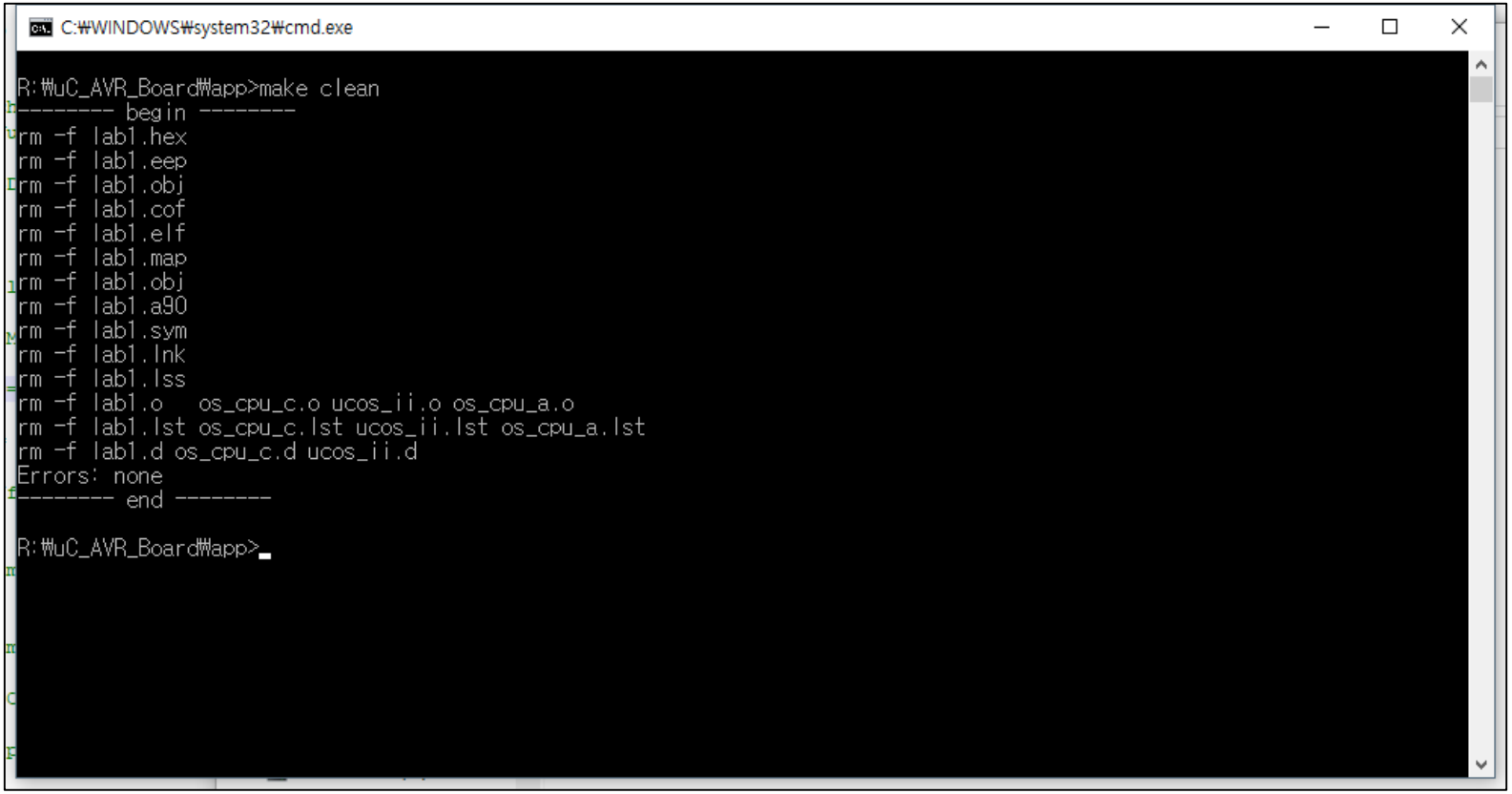

```
avr-gcc -mmcu=atmega128 -I. -IR:/uC_AVR_Board/source -IR:/uC_AVR_Board/ports -O2 -funsigned-char -funsigned-bitfields -f
pack-struct -fshort-enums -Wall -Wstrict-prototypes -Wa,-ahlms=lab1.o lab1.o   os_cpu_c.o ucos_ii.o os_cpu_a.o --output
lab1.elf -Wl,-Map=lab1.map,--cref
avr-objcopy -O ihex -R .eeprom lab1.elf lab1.hex
avr-objcopy -j .eeprom --set-section-flags=.eeprom="alloc,load" ₩
        --change-section-lma .eeprom=0 -O ihex lab1.elf lab1.eep
c:₩WinAVR-20100110₩bin₩avr-objcopy.exe: --change-section-lma .eeprom=0x00000000 never used
avr-objdump -h -S lab1.elf > lab1.lss
Size after:
lab1.elf  :
section    size      addr
.data       264   8388864
.text      3812         0
.bss        680   8389128
.stab       888         0
.stabstr     80         0
Total      5724


Errors: none
-------- end --------

R:₩uC_AVR_Board₩app>
```

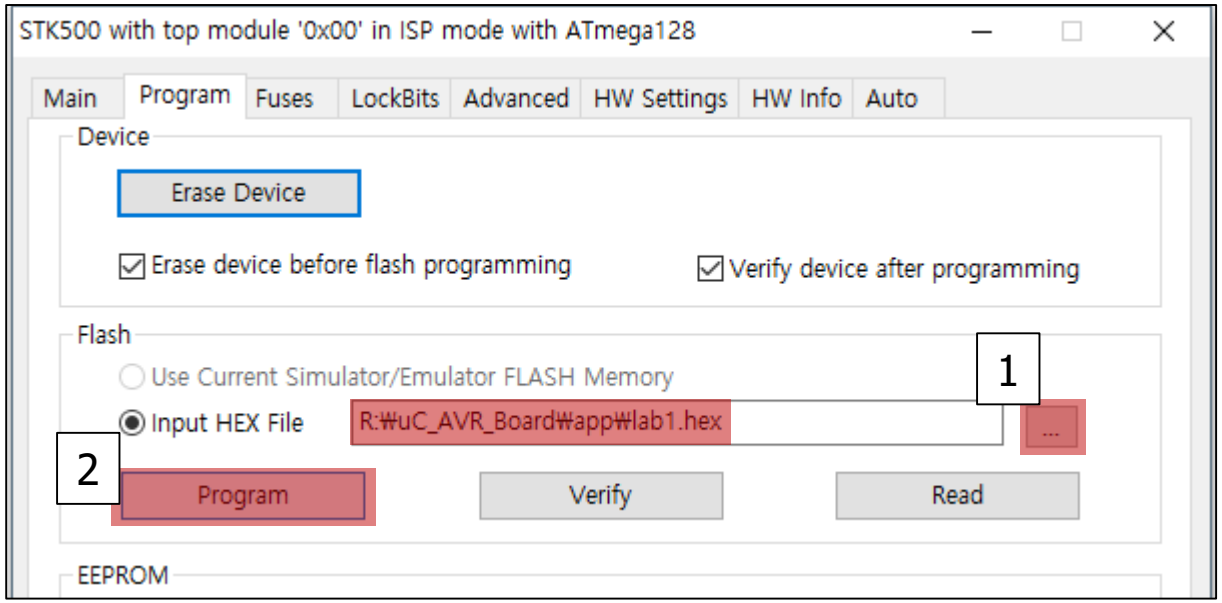
컴파일 (3)

- (참고) 컴파일 결과 제거 “make clean”
  (FYI) “make clean” to clear



.hex 파일 전송

- 1. AVR studio 4에서 아무 프로젝트 열기
  Open any project in AVR studio 4
- 2. 컴파일된 .hex 파일 전송
  Upload compiled .hex file



Assignments

- 과제 없습니다!
  No assignment!
- 남은 시간 프로젝트 준비해주세요
  Prepare your project for the rest of the time
- 앞으로 수업시간 외 보드 대여 불가
  Unable to borrow board out of the class
  - 수요에 따라 1회의 보강 가능, 약 2 – 3시간 진행
    There may be an additional lab class(about 2 to 3 hours) depending on demand

- 실습 후 Erase device 해주세요.
- Before you go out,
  please click “Erase device” button.