

# Homework #1 (1)

- 建議: 在自己的PC或筆電上安裝Vmware or VirtualBox等虛擬化軟體，並在其上安裝Linux作業系統。
- 至Ecourse課程網頁下載已經編譯好的ARM software development tools
- Install **ARM software development tools** (cross-binutils, cross-compiler, cross-newlib, and cross-debugger) in Linux or Unix-like system.
  - Target machine: **arm-none-eabi**
  - 安裝目錄自己決定

# 請使用apt-get安裝下列的軟體套件 (1)

- `sudo apt-get install autoconf`
- `sudo apt-get install autogen`
- `sudo apt-get install texinfo`
- `sudo apt-get install zlib1g-dev`
- `sudo apt-get install tcl-dev`
- `sudo apt-get install tk-dev`
- `sudo apt-get install libgmp-dev`
- `sudo apt-get install libmpc-dev`
- `sudo apt-get install libmpfr-dev`

## 請使用apt-get安裝下列的軟體套件 (2)

- `sudo apt-get install mesa-common-dev`
- `sudo apt-get install libjpeg-dev`
- `sudo apt-get install libtogl-dev`
- `sudo apt-get install python-dev`
- `sudo apt-get install flex`
- `sudo apt-get install bison`
- `sudo apt-get install itcl3`
- `sudo apt-get install itk3`
- `sudo apt-get install iwidgets4`

# Homework #1 (2)

- 利用安裝好的cross assembler, 組譯組合語言程式 (hw1.s)

```
$arm-none-eabi-as hw1.s -o hw1.o
```

- 利用安裝好的cross compiler, 編譯組合語言程式 (hw1.s)

```
$arm-none-eabi-gcc hw1.s -o hw1.exe
```

# Homework #1 (3)

- 利用安裝好的cross compiler, 編譯 C程式 (sample.c) , 產生相對應的組合語言程式

```
$arm-none-eabi-gcc -O0 -S sample.c -o  
sample_00.s
```

```
$arm-none-eabi-as sample_00.s -o  
sample_00.o
```

```
$arm-none-eabi-gcc -O3 -S sample.c -o  
sample_03.s
```

```
$arm-none-eabi-as sample_03.s -o  
sample_03.o
```

# Homework #1 (4)

- 請回答下列問題:
  - Q1: 請描述自己安裝與執行ARM software development tool的過程 (不超過1頁)
  - Q2: 請說明hw1.o與hw1.exe的差別?
  - Q3: sample\_O0.o與sample\_O3.o檔案大小的差別?
- 請把答案寫在純文字檔(檔名:answer.txt), 連同所產生的hw1.o, hw1.exe, ... 一起上傳到ECOURSE
- Deadline: October 15, 2018 (Monday), 24:00  
(此次作業, 不可補交)