Homework #2 (1)

- Write an ARM assembly program that does the following computation and puts the result at register r0. (不考慮overflow)

  – r0 = 2*r1 + 3*r2 + 4*r3

- The initial values of r1, r2, and r3 are assigned by yourself.

Template

```
/* ============================ */
/*         TEXT section         */
/* ============================ */
        .section .text
        .global main
        .type main,%function
main:
        mov   r1, #10          /* r1 = 10 */

        Your codes

        nop
        .end
```

- 一開始指定給r1, r2, r3的數值
- 助教批改作業時, 可能會測試不同的數值
- 因為編碼的緣故，不是每個數都能表示，請直接在GUI上修改register的值

- #num : 表示10進位數字
- #0xnum : 表示16進位數字
- #0bnum: 表示2進位數字
- #0num: 表示8進位數字

Template (1)

```
/* ============================ */
/*        TEXT section          */
/* ============================ */
        .section .text
        .global main
        .type main,%function
main:
        mov   r1,#10            /* r1 = 10 */
        mov   r2,#20            /* r2 = 20 */
        mov   r3,#12            /* r3 = 12 */

        Your codes

        nop
        .end
```

執行到nop時，r0的值為答案。

Template (2)

```
/* ============================ */
/*        TEXT section          */
/* ============================ */
        .section .text
        .global main
        .type main,%function
main:
        ldr   r1,=#10          /* r1 = 10 */
        ldr   r2,=#20          /* r2 = 20 */
        ldr   r3,=#12          /* r3 = 12 */

        Your codes

        nop
        .end
```

執行到nop時，r0的值為答案。

Homework #2 (2)

- How to compile:

```
$ arm-none-eabi-gcc -g -O0 hw2.s -o \
hw2.exe
```

- How to execute
  - arm-none-eabi-insight

Homework #2 (3)

- Program should be assembled and linked by GNU cross toolchain.
- Program can be executed under **GDB ARM simulator**
- 程式中應有適當的說明（註解）
- You should turn in to **ECOURSE2**
  - "**README.txt**" file: 文字檔，描述你程式的內容、如何編譯程式、程式的執行環境、如何執行你的程式
  - "**hw2.s**": Your ARM assembly program
  - "**hw2.exe**": 編譯好的執行檔
  - 請將欲繳交的檔案壓縮成 <**hw2_學號.tar.bz2**>，上傳壓縮檔
- **Deadline: October 12 (Monday), 2020, 24:00**

(此次作業, 不可補交)