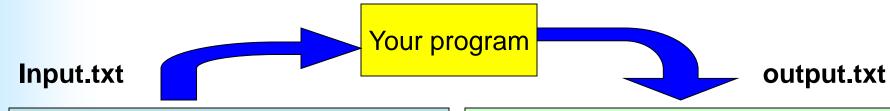
Homework #7 (1)

- Write a ARM assembly program to perform three tasks
 - Read a text file named "input.txt"
 - Transfer lower case letters ('a' to 'z') to upper case letters
 - Other characters are not changed.
 - Output the results to the a text file named "output.txt"

Homework #7 (2)



A little bird was flying south for the winter. It was so cold the bird froze and fell to the ground in a large field. While it was lying there, a cow came by and dropped some dung on it. As the frozen bird lay there in the pile of cow dung, it began to realize how warm it was.

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Assembly Language, CSIE, CCU

Homework #7 (3)

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用ARM assembly code撰寫

Homework #7 (4)

Function: char trans(char)

- Ex: trans('a') => 'A'
- Ex: trans(':') => ':'
- -Ex: trans('B') => 'B'
- -若傳入的字元是小寫英文字母,則傳回相對應的大寫字母;若是其他字元,則不改變直接傳回。
- 使用ARM assembly code實作

Homework #7 (5)

```
Argument1 => Register r0
extern char trans(char);
                                   遵守APCS規則
int main(void)
  /* Open/read the file "input.txt" */
  <char> = trans(<char>);
  /* Write the file "output.txt" */
```

Homework #7 (6)

```
trans() function
        .section .text
        .global trans
        .type trans, %function
trans:
           ip, sp
      mov
      stmfd sp!, {fp, ip, lr, pc}
             fp, ip, #4
      sub
                            請留意是否有callee-saved
 < function body >
                            registers?
      ldmea
             fp, {fp, sp, pc}
```

Assembly Language, CSIE, CCU

Homework #7 (7)

- Program should be assembled and linked by gcc (ARM-ELF format)
- Program should be executed under GDB ARM simulator
- 程式中應有適當的說明(註解)
- Two files: hw7.c trans.s
- 編譯方式:
- \$ arm-elf-gcc -g -00 hw7.c trans.s -o hw7.exe

Homework #7 (8)

- You should turn in to ECOURSE
 - README.txt (純文字檔),描述你程式的內容、如何編譯程式、如何執行你的程式。
 - hw7.c
 - trans.s
 - Makefile
 - Any other files are required in your implementation
 - 你的測試檔: input.txt
 - 你程式執行之後產生的檔案: Output.txt
- Deadline: December 27 (Wednesday), 2017