

COSE321 Computer Systems Design

Assignment #2

No late turn-in accepted

Write an ARM assembly program that sorts data in ascending order from the smallest to the largest. The input data is defined in the data section as "Input_data". After executing your sorting program, "Output_data" in the data section should list the sorted integers of **all 32 input data** from the smallest to the largest. Note that you should add comments right next to each line of your assembly code.

```
.data
.align 4
Input_data: .word 2, 0, -7, -1, 3, 8, -4, 10
            .word -9, -16, 15, 13, 1, 4, -3, 14
            .word -8, -10, -15, 6, -13, -5, 9, 12
            .word -11, -14, -6, 11, 5, 7, -2, -12

Output_data: .word 0, 0, 0, 0, 0, 0, 0, 0
            .word 0, 0, 0, 0, 0, 0, 0, 0
            .word 0, 0, 0, 0, 0, 0, 0, 0
            .word 0, 0, 0, 0, 0, 0, 0, 0
```

What and How to submit:

1. Upload **your assembly code** to Blackboard.
2. Upload **video clip (3-min?)** to Blackboard. Your video clip should have **at least** the following contents:
 - Understandable explanation of the sorting algorithm and assembly code
 - Sorted output (memory dump screen in SDK) after the program execution

Note: This is an individual assignment. You are welcome to discuss, but DO NOT COPY solution. If you are found to copy a solution from others or slightly modify the solution from others, both of you will be given zero credits.