King Mongkut’s University of Technology Thonburi

Faculty of Engineering, Department of Computer Engineering

**CPE 223 Computer Architecture**

**PROBLEM SESSION 4: Assembly Language.**

1. Download “visUAL” emulator software to compile and test your ARM assembly source code from this link: <https://salmanarif.bitbucket.io/visual/downloads.html>
2. Write a program from Assembly programming language in the “visUAL” emulator software, you can choose only one between
   1. Insertion sort (get 8 score.)
   2. Selection sort (get 8 score.)
   3. Quick sort (get 10 score.)
3. Test and compile your program on “visUAL” emulator software only, there is no need to compile with your native complier on your workstation.

**Submission**

Submit the source code and the PDF document files with explanation of your source code and output result. This is the problem session for the group of 2-3 students.

**Hint**

- You can download the “Lab4\_GuideLine.pdf” from LEb2 for study about sort algorithm.

- You can download the “BubbleSort.asm” from LEb2 as an example about how to write and compile assembly code with “visUAL” emulator software.

- In “visUAL” emulator software, there is a “Step Forwards” and “Step Backwards” which can help you check each step of your code without running the whole process of your program