

## Lab 1 Introduction to 8051 Development Environment

### Part 1 Software Development Environment

#### I. Objectives

- To create 8051 assembly software project with Keil uVision3.
- To write and compile simple 8051 assembly programs.
- To simulate 8051 programs with Keil uVision3.

#### II. Materials

- Keil uVision3 development environment.

#### III. Procedures

Activity 1. Write, compile, and simulate 8051 programs with Keil uVision3.

1. Create an 8051 project by following the “ELEG 3923 Software Manual” posted on the course website. Understand the sample program in the manual. Use the 8051 simulator to single step the execution of the program. Observe the contents of related registers and memory locations by using the simulation function.
2. Write and assemble a program to move the value 99H to Register A. Then from Register A to registers R0 and R4. Record the contents of registers PC, A, R0, R4, and PSW. Explain the contents of PSW.
3. Write and assemble a program to add the following numbers: 92H, 23H, 66H, 87H, F5H, and store the result in R2. Record the contents of CY, AC flags for each step, and explain why.

#### IV. Questions

1. Indicate the largest value (in hex and decimal) that each register can contain. PC, A, B, R0, R1.
2. Find the value of the CY flag after the execution of the following code  
(1) MOV A #85H  
    ADD A #72H  
  
(2) MOV A #85  
    ADD A #72