

THE MICROPROCESSORS & MICROCONTROLLERS

Instructor: The Tung Than

PRACTICE EXERCISE #1:

ACQUAINTANCE WITH PROTEUS AND THE 8051 MICROCONTROLLER FAMILY

I. Student preparation

- Knowledge of Assembly programming on 8051. Download and preview “[Assembly instruction set of 8051](#)”.
- Download and install Proteus software version 8.6.

II. Practice content (4 points)

1. Design a heart-led circuit consisting of 32 LEDs controlled by AT89C51. (2 points)
2. Build an Assembly program so that the circuit can run continuously with at least 3 effects, each effect runs within 5 seconds. (3 points)

III. Exercises

Research and write the steps of printed circuits from the design step on the proteus to the step of completing the printed circuit in practice.

IV. Report (6 points)

Compress design files and report files into a file named as follows:

[<LAB...>]-[<Student code>]-Full name

The required report file contains the following contents:

1. Design result (screenshot and pasted in the report). (1 point)
2. Explain the operating principle of the effects, accompanied by a video (send a Google Drive link) to demonstrate the circuit operation in case the instructor cannot run the design file. (3 points)
3. Presentation of the steps to implement the printed circuit. (2 points)