PRACTICE EXERCISE #4:

USING UART

I.   Student preparation

−   Knowledge of how to install and use UART.

−   Knowledge of how to use Serial UART LCD

II.   Practice content

1. Design a 4x4 keyboard set including the following buttons:

    o   From 0 to 9

    o   The signs + - * /

    o   Sign =

    o   Reset button

2. Using AT89C51/AT89C52 in combination with the module just designed above to design a handheld calculator, display calculations and results on an LCD that receives data via UART.

III.   Report

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).

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. Exercise report.