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Term Project
COMP – 2476 – WA
March 26, 2020

Phase 2

Procedure:

The seconds are displayed in RAM location 30H

The minutes are displayed in RAM location 31H

The hours are displayed in RAM location 32H

The values to be displayed in the LCD are in locations from 40H to 47H

The clock is displayed in the LCD in the format 00 00 00 (HH MM SS).

The LCD is cleared and displayed for every interval.

The values are displayed in hexadecimal.

The code checks if Switch 0 has been closed and starts the clock from 00:00:00. A delay function of 0.5 seconds (according to the machine cycle) is used twice to increment the seconds and the minutes are incremented by 1 every time the seconds are incremented 60 times using loops. Similarly, an hour is incremented by 1 every time the minutes are incremented 60 times. Seconds start from 00 after every minute and minutes start from zero after every hour.

Switch 1 is used to reset the timer from 00:00:00 when it is closed. The timer pauses when Switch 1 is closed and resumes from 00:00:00 when Switch 1 is opened.

Switch 0 starts the timer from 00:00:00 and the timer runs for as long as the switch is closed.

Instructions:

Set the frequency to 501500 on the edsim51 simulator.

Load the .asm file.

Assemble and run the program

When the cursor is visible in the LCD, close Switch 0 to start the timer. Open Switch 0 to stop the timer.

Close Switch 1 to reset the values to 00:00:00 and pause the timer. Open Switch 1 (wait for at least 1 second) to resume the timer.

Limitations:

Currently, the second on the clock is not the same as the real world second. The simulator did not support a frequency which could implement a machine cycle of 1 second similar to the real world's 1 second.

There is no limit set on the maximum number of hours. The LCD will display ASCII characters after a point.