

Embedded Systems

Due: Sunday 15th Apr, 2018

Arduino LAB

Assignment 4

Multi-tasking in Arduino:

The Arduino is a very simple processor with no operating system and can only run one program at a time. Unlike your personal computer or a Raspberry Pi, the Arduino has no way to load and run multiple programs. That doesn't mean that we can't manage multiple tasks on an Arduino. We just need to use a different approach. Since there is no operating system to help us out, we have to take matters into our own hands. Please refer to these two documents explaining how to apply multitasking in Arduino:

- Part 1
- Part 2
- Part 3

It is required to develop a simple system of LEDs to demonstrate the multi-tasking in Arduino.

The circuit consists of two LEDs connected to the Arduino that are blinking at a rate of 1 second by default. Two push buttons - each one is associated with a specific LED - are responsible for decreasing the blinking rate by 100 ms at a time.

You should construct the appropriate connections and use the proper functions while coding to ensure that multitasking is achieved (See examples in the above documents).

Deliverables

• Bring your circuit fully functional with you during the next LAB and be prepared to discuss your work

Good Luck