

# Exercise in Embedded Computing: MSP430 Basics

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The goal of this exercise is to learn how to use a new microcontroller family. The actual tasks are ones that you have already performed on the LPC2148. The focus is on reading the microcontroller's user manual and board schematics of a new platform to learn how to accomplish the same tasks.

1. Copy `makefile` and `do-nothing.c` from `exercises/msp430-basics`, compile the program (type `make`) and download it to the TelosB board (`make program`).
2. Study the schematics of the board in `docs/TelosB/tmote-sky-datasheet.pdf` and locate the three LEDs and the switch. Note which bits in which ports they use, and whether they are active when the pin is low or high.
3. Modify the program to blink the red, green, and blue, LEDs in that order, using the following steps:
  - (a) Modify the program so that it turns the red LED on.
  - (b) Modify it so that the red LED blinks at about once per second, using a delay loop.
  - (c) Modify the program so that the red LED lights, then the green, then the blue, than none of them, and so on. Make sure that the red LED lights after the no-lights period.
4. Modify the program so that the LEDs switch state when the switch is pressed, not after a fixed period. You can use a loop to monitor the switch's state.
5. Modify the program so that it detects that the switch is pressed using an interrupt.