

## LED Related labs

### Lecture files to help on these labs are:

1led\_1res\_ckt\_For\_Loop\_lec\_b, 2led\_2res\_ckt\_lec\_a,

1) Use Lecture material( Arduino\_tutorial\_lec.pdf)

a) Build a program (**name it 1led\_1res\_ckt\_For\_Loop\_lab\_b**) such that REDLED to blink 11 times and to be ON for 600ms and OFF for 1100ms

b) Change your above program to accomplish the same except using variables names LEDonTime1 and LEDoffTime1 to set your On time (500ms) and OFF time (1000ms)

2) Use file 1led\_1res\_ckt\_For\_Loop\_lec\_b and do the following modifications:

[1led\\_1res\\_ckt\\_For\\_Loop\\_lec\\_b.ino](#)

a) Add 2nd YELLOWLED assigned to pin 10(**name the new file 2led\_2res\_ckt\_For\_Loop\_lab\_b**) such that REDLED blinks 10 times, YELLOWLED blinks 5 times, REDLED to be on 500ms and off for 1000ms and YELLOWLED to be on 500ms and off 1000ms.

b) Change your above program to accomplish the same except using variables names (REDonTime, REDoffTime, YELLOWonTime, YELLOWoffTime, numREDblink, numYELLOWblink to set REDLED ON/OFF times to be 500/1000 ms and YELLOWLED ON/OFF times to be 500/1000 ms, and # of times you want REDLED to blink=10 and # of times for YELLOWLED to blink=5

3) Use file 2led\_2res\_ckt\_For\_Loop\_user\_interface\_lec\_a

a) Run and verify the user interface prompts

b) Use file 2led\_2res\_ckt\_For\_Loop\_user\_interface\_lec\_a to modify such that REDonTime will be **only** prompted and input by user.(**name the new file 2led\_2res\_ckt\_For\_Loop\_user\_interface\_lab\_a**). No prompt for numREDblink and numYELLOWblink. Hard code numREDblink=10 and YELLOWblink=5. prompt should be "how many second do you want REDonTime to be ?"

[2led\\_2res\\_ckt\\_For\\_Loop\\_user\\_interface\\_lec\\_a.ino](#)

**\*6) Use the file below(digitalRead) to modify such that to read the content of output pin 12 into input pin 8. Use serial Monitor and appropriate External connection and then monitor the state of serial Monitor. The serial Monitor should always show HIGH or LOW depending on state of pin 12**

[DigitalRead\\_lec.ino](#)