Experiment 002 RGB Blink

#WeAreAllMakers

OVERVIEW

In this experiment you will control how the RGB LED on the 321Maker Shield.

OUTCOMES

By the end of this assignment the student will be able to:

- control each of the various color channels for a RGB LED,
- modify the color of a RGB LED by combining color channels.

REQUIREMENTS

- Arduino-Compatible board
- 321Maker Things Shield
- USB Cable
- Arduino Software

PREREQUISITES

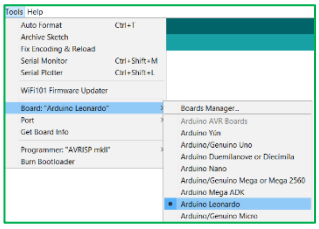
- Getting Started Tutorial: http://321maker.com/start
- Source Code: https://git.io/vpvCq

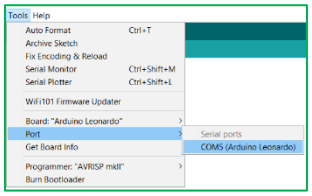
VIDEO TUTORIAL

http://youtube.com/indevelopment

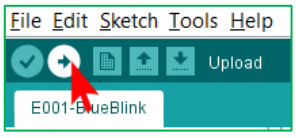
LEVEL 1 PROCEDURE

- [ ] Connect your Arduino to your computer using the USB port.
- [ ] Open the Arduino software.
- [ ] Download the **RGB Blink** program code from here: https://git.io/vpvCq
- [ ] Copy and paste the program code into the Arduino software editor.
- [ ] Make sure you have the correct Board selected for your Arduino device. Click ***Tools, Board, Leonardo***.
- [ ] Make sure you have the correct communications port (COMM) port selected for your Arduino device. Click ***Tools, Ports and choose the highest Comm port number. On a Mac, choose the port that is not Bluetooth.***
- [ ] Click the upload button in the upper left corner to compile and upload the code to the Arduino device. If you see an Orange error in the bottom of your screen, then something went wrong.

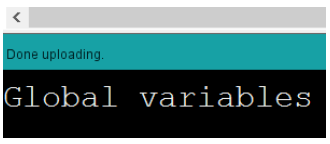




Communications Port



Upload Button



Upload successful

Upload Error

- [ ] Congratulations, your RGB LED should be cycling between 7 different colors. .

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LEVEL 2 PROGRAM MODIFICATION

- [ ] Modify the program code to change the sequence of the lights to the following pattern Blue, White, Red, Green.
- [ ] Modify the program code to make the color sequence change color every 3 seconds.

LEVEL 3 ADVANCED APPLICATION

- [ ] Create your own personalized 15 second light show.

LEVEL 4 PROJECT CHALLENEGE

- [ ] **Controllable Light Show Challenge -** Write a program that cycles through the 7 different color where the speed is controlled by Rotation dial A0 on the board.

- [ ] **Slow the Lights Down Challenge -** Modify the program to progressively cycle through each of the colors 7 colors and have it get slower each time. For example, start at a rate of cycling all 7 colors every second then after 10 cycles cycling it will take 10 seconds to complete the cycle.