Engineering Principles Electrical Engineering Color Wheel 4.5.1 Doc: Pin Map

Date_____ Team _____

Name_____

Problem statement

Develop a persistence-of-vision color wheel utilizing 8 RGB diodes and an Arduino UNO R3 board.

Documentation:

1. Finish the schematic if not already done.

Documentation: Pin Map

- 2. Make a table (using Excel) showing which LED pins are connected to which Digital I/O's. Also indicate which Analog I/O pin the Hall-effect sensor is connected to.
- 3. Save the file and upload it to your group's file space on Canvas. Give a printed copy of this to your programmer.

Example:

Arduino Pin	Connected Pin	Description		
Digital 0	Row1	Row 1 common pin = 0 for ON		
Digital 1	Row2			
Digital 9	Red1	Common pin for 4 Red LEDS		
Digital 10	Red2	Common pin for 4 Red LEDS		
Analog 0	Sensor	Hall-effect sensor Output		

Atmega168 Pin Mapping

Arduino function		~ ~	1	Arduino function
reset	(PCINT14/RESET) PC6	1 - 28	PC5 (ADC5/SCL/PCINT13	 analog input 5
digital pin 0 (RX)	(PCINT16/RXD) PD0	2 27	PC4 (ADC4/SDA/PCINT1:	2) analog input 4
digital pin 1 (TX)	(PCINT17/TXD) PD1	3 26	PC3 (ADC3/PCINT11)	analog input 3
digital pin 2	(PCINT18/INT0) PD2	4 25	PC2 (ADC2/PCINT10)	analog input 2
digital pin 3 (PWM)	(PCINT19/OC2B/INT1) PD3	5 24	PC1 (ADC1/PCINT9)	analog input 1
digital pin 4	(PCINT20/XCK/T0) PD4	6 23	PC0 (ADC0/PCINT8)	analog input 0
VCC	VCC	7 22	GND	GND
GND	GND	8 21	AREF	analog reference
crystal	(PCINT6/XTAL1/TOSC1) PB6	9 20	AVCC	VCC
crystal	(PCINT7/XTAL2/TOSC2) PB7	10 19	PB5 (SCK/PCINT5)	digital pin 13
digital pin 5 (PWM)	(PCINT21/OC0B/T1) PD5	11 18	□ PB4 (MISO/PCINT4)	digital pin 12
digital pin 6 (PWM)	(PCINT22/OC0A/AIN0) PD6	12 17	PB3 (MOSI/OC2A/PCINT	 digital pin 11(PWM)
digital pin 7	(PCINT23/AIN1) PD7	13 16	PB2 (SS/OC1B/PCINT2)	digital pin 10 (PWM)
digital pin 8	(PCINT0/CLKO/ICP1) PB0	14 15	PB1 (OC1A/PCINT1)	digital pin 9 (PWM)

Digital Pins 11,12 & 13 are used by the ICSP header for MOSI, MISO, SCK connections (Atmega168 pins 17,18 & 19). Avoid lowimpedance loads on these pins when using the ICSP header.

Developed through a partnership between the University of Utah College of Engineering and Granite School

