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|---|---|
| **Experiment No :** | **Date of Experiment:** |

## TERMS

Write the letter of the term that matches the provided definition. Each term is used only once.

| | **Definition** | **Term Choices** |
|---|---|---|
| 1. | These devices "listen" to the physical world. They convert varied forms of physical energy into a range of electrical signals. Examples: Buttons, knobs, photo-resistors. | A. Pulse Width Modulation PWM |
| 2. | A sketch instruction that requests a LOW or HIGH reading from a specified input pin | B. Pin |
| 3. | The name of a complete code in Arduino programming | C. analogRead |
| 4. | These devices are outputs; they "take action" in the physical world. They take electrical energy and convert it into physical energy like emitting light or moving control arms. | D. Sensor |
| 5. | A sketch instruction that specifies a 0v / Gnd signal to an Arduino pin | E. HIGH |
| 6. | A sketch instruction that specifies a 5v signal to an Arduino pin | F. Microcontroller |
| 7. | A connection point on the Arduino board. | G. digitalRead |
| 8. | A sketch instruction that specifies an Arduino pin as an input | H. INPUT |
| 9. | A sketch instruction that specifies an Arduino pin as an output | I. Sketch |
| 10. | A sketch instruction that sets any value from 0 – 255 on an analog output pin. | J. analogWrite |
| 11. | These devices "listen" to sensors and "talk" to actuators. They decide what to do based on a set of code instructions. | K. OUTPUT |
| 12. | A method of creating an analog signal on a digital pin. Only available on pins marked with ~ tilde symbol. | L. LOW |
| 13. | Get an analog value from 0 – 1023 from an analog sensor. Must be on Analog pins. | M. Actuator |
| 14. | A sketch instruction that sends a LOW or HIGH voltage to a specified output pin | N. digitalWrite |
| | | |

Answers :

**1 –D**

**2 –G**

**3 –I**

**4 –M**

**5 –L**

**6 –E**

**7 -B**

**8 –H**

**9 -K**

**10 -J**

**11 -F**

**12 -A**

**13 -C**

**14 -N**

## Sketch Programming

Fill in the blank lines to properly complete this Arduino code.

USE PROPER IDE Syntax. IE: if the code line requires the word “high” you must write it as “HIGH” (all capital letters)

### Code Objective:

Light a green LED connected to pin 3 until the switch is pressed on pin 2. If the switch is pressed, toggle flash two red LEDs connected to pins 4 & 5.

```
**********************************************************************************

int switchstate = 0;

void setup(){

  pinMode(3,OUTPUT);                          // declare the LED pins as outputs

  pinMode(4,OUTPUT);

  pinMode(5,OUTPUT);

  pinMode(2,INPUT);                                  // declare the switch pin as an input

}

void loop(){                                  // runs continuously

  switchstate = digitalRead(2);                      // read the value of the switch
```

```
if (switchstate == LOW) {                    // if the button is not pressed (LOW) light green LED
  digitalWrite(3, HIGH);                  // turn the green LED on pin 3 on
  digitalWrite(4, LOW);                    // turn the red LED on pin 4 off
  digitalWrite(5, LOW);                    // turn the red LED on pin 5 off
}
else {                                     // if the button is pressed (HIGH), off on green, on red.
  digitalWrite(3, LOW);                    // turn the green LED on pin 3 off
  digitalWrite(4, LOW);                    // turn the red LED on pin 4 off
  digitalWrite(5, HIGH);                  // turn the red LED on pin 5 on
     delay(250);                           // delay quarter second
  digitalWrite(4, HIGH);                   // turn the red LED on pin 4 on
  digitalWrite(5, LOW);                    // turn the red LED on pin 5 off
  delay(250);                             // wait for a quarter second before changing the light
}}
```