SADARC Arduino Course

Digital Inputs and Outputs Quick Summary

pinMode (pin, mode);   Where mode is one of the following **INPUT**, **OUTPUT**, or **INPUT_PULLUP**

```
Examples:-

pinMode ( 13, OUTPUT );        // Set digital pin 13 as output
pinMode ( 12, INPUT  );        // Set digital pin 12 as input
pinMode ( 12, INPUT_PULLUP );  // Set digital pin 12 as input with pullups
```

digitalWrite (pin, value)   Where value is either HIGH or LOW

```
Examples:-

pinMode ( 13, OUTPUT );        // Set pin 13 as an OUTPUT

digitalWrite ( 13, LOW );      // Set pin 13 LOW
digitalWrite ( 13, HIGH):      // Set pin 13 HIGH
```

Caveat: Arduino output pins can source and sink up to 40 mA, if you want to drive higher current devices you need a relay or transistor switch.

digitalRead (pin)   Returns either **HIGH or LOW**

```
Examples:-

pinMode ( 13, INPUT_PULLUP);   // Set pin 13 as INPUT with pullups

// read a switch connected between pin 13 and ground
if ( digitalRead (13) == LOW ) {
    Serial.print("Switch Pressed");
}
```

Analog Input and Output Quick Summary

```
pinMode ( pin, OUTPUT);
analogWrite( pin, value);    // generates a PWM signal

PWM duty cycle is 0 to 255,  where 0 is 0% duty cycle and 255 is 100%

analogRead( pin );  // returns a number from 0-1023 for a 10 bit ADC
                    //  some boards have a 12 bit adc which is 0-4095

int value;
void loop () { value=analogRead(analogPin);
            Serial.println(value);
}
```