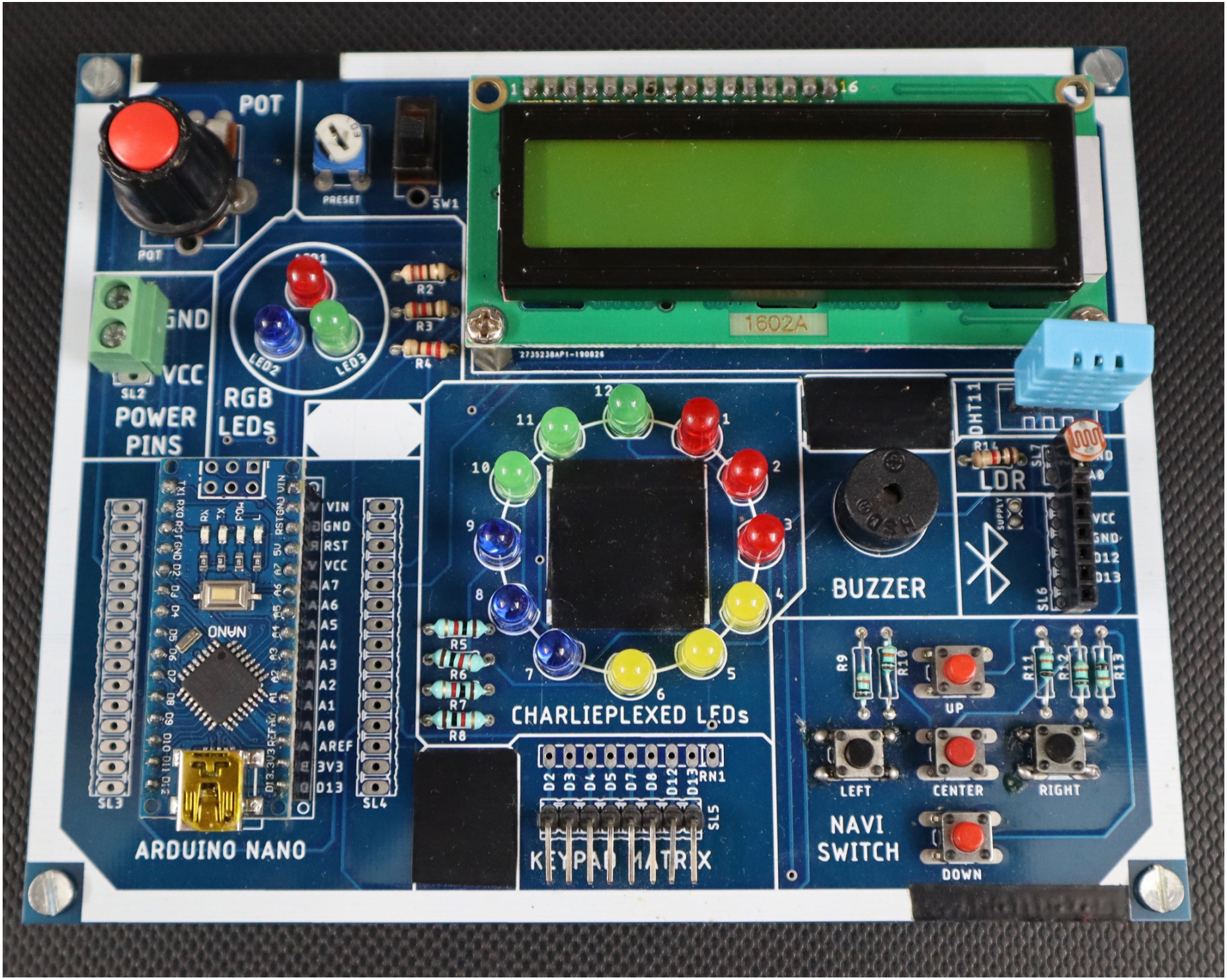
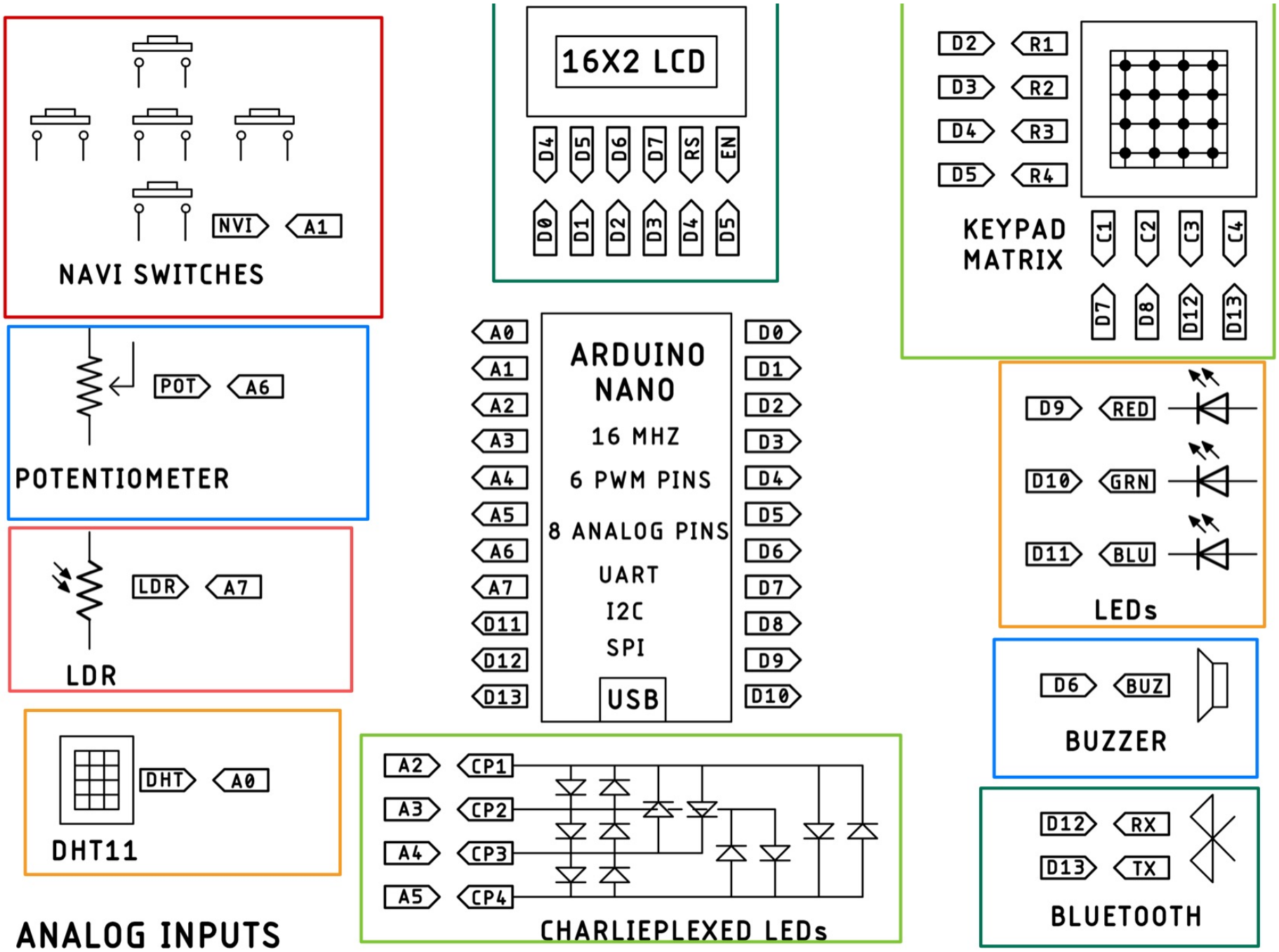

POT
PRESET
SW1
1602A
GND
VCC
POWER PINS
SL2
RGB LEDs
LED2
LED3
R2
R3
R4
CHARLIEPLEXED LEDs
R5
R6
R7
R8
BUZZER
DHT11
R14
LDR
SUPPLY
VCC
GND
D12
D13
SL6
ARDUINO NANO
SL3
SL4
VIN
GND
RST
VCC
A7
A6
A5
A4
A3
A2
A1
A0
AREF
3V3
D13
KEYPAD MATRIX
RN1
SL5
D2
D3
D4
D5
D7
D8
D12
D13
NAVI SWITCH
UP
LEFT
CENTER
RIGHT
DOWN
R9
R10
R11
R12
R13


NAVI SWITCHES
NVI
A1
POTENTIOMETER
POT
A6
LDR
LDR
A7
DHT11
DHT
A0
ANALOG INPUTS
16X2 LCD
D4
D5
D6
D7
RS
EN
D0
D1
D2
D3
D4
D5
ARDUINO NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
USB
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D10
CHARLIEPLEXED LEDs
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A3
A4
A5
CP1
CP2
CP3
CP4
KEYPAD MATRIX
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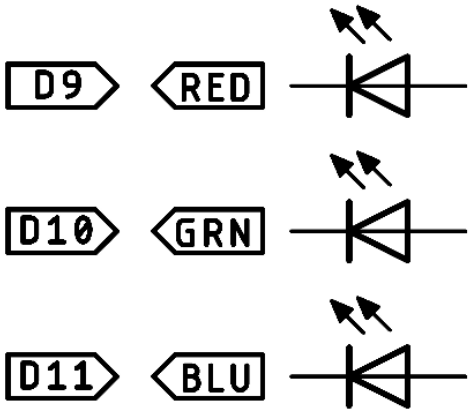
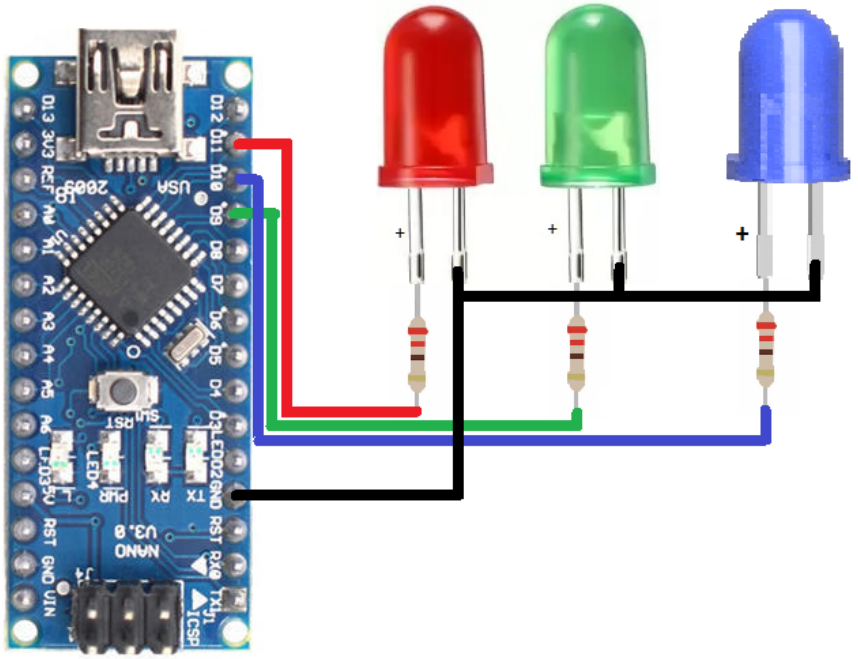
D3
D4
D5
R1
R2
R3
R4
C1
C2
C3
C4
D7
D8
D12
D13
LEDs
D9
RED
D10
GRN
D11
BLU
BUZZER
D6
BUZ
BLUETOOTH
D12
RX
D13
TX

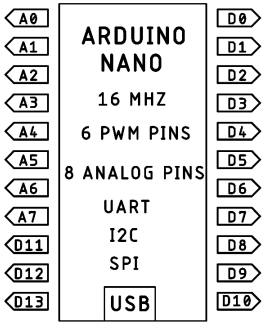
1 LED Control

```
int green = 9;
int blue = 10;
int red = 11;

void setup() {
  pinMode(green, OUTPUT);
  pinMode(blue, OUTPUT);
  pinMode(red, OUTPUT);
}

void loop() {
  digitalWrite(green, HIGH);
  digitalWrite(blue, HIGH);
  digitalWrite(red, HIGH);
  delay(1000);
  digitalWrite(green, LOW);
  digitalWrite(blue, LOW);
  digitalWrite(red, LOW);
  delay(1000);
}
```



LEDs




A0
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ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
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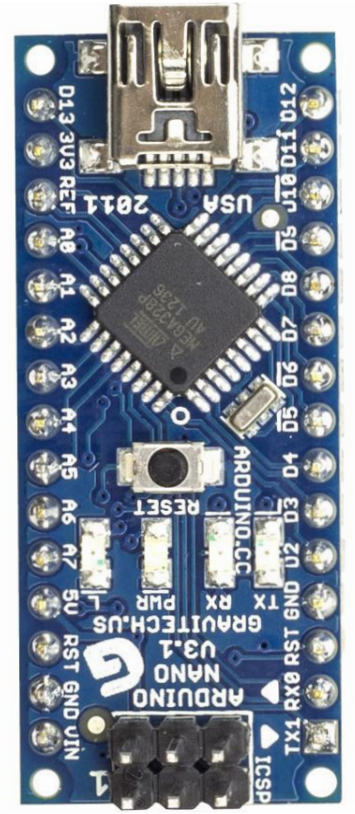
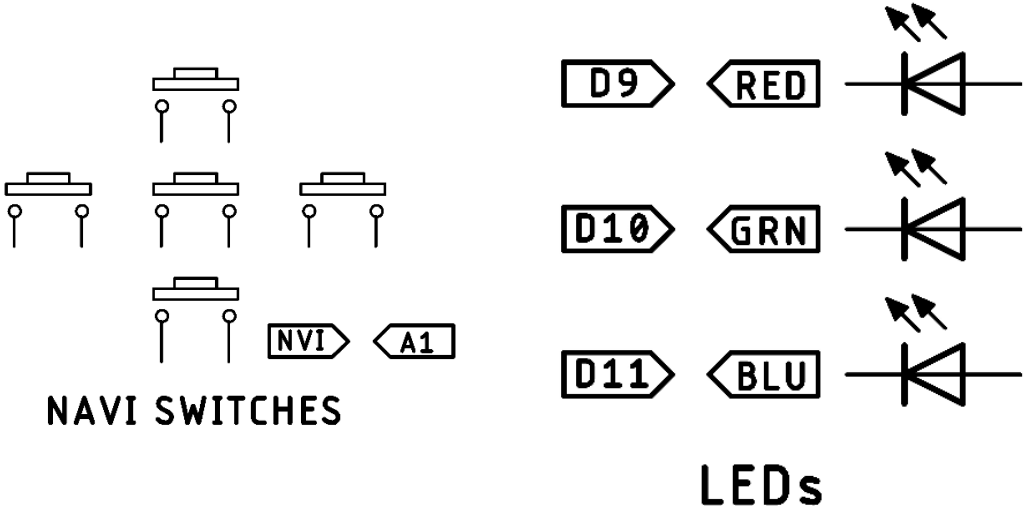

ARDUINO
NANO
V3.1
GRAVITECH.US
RESET
ARDUINO.CC
USA
2011
ICSP

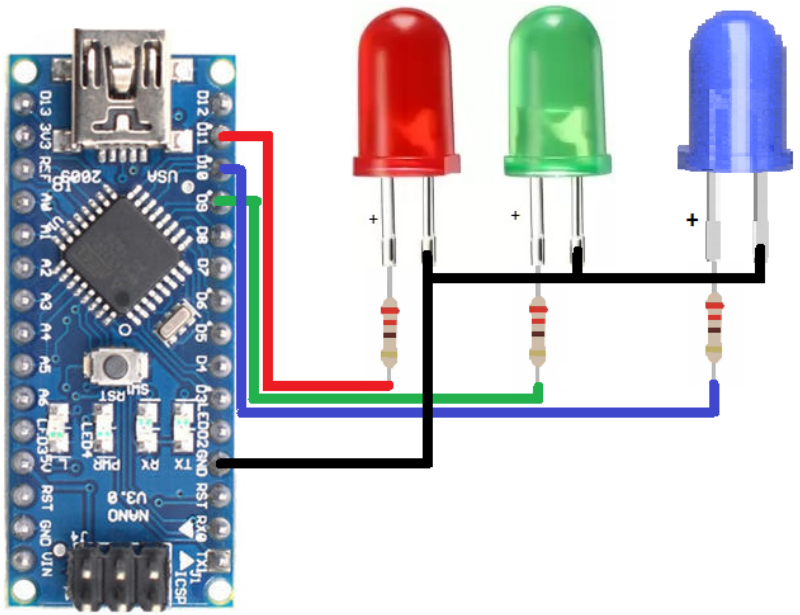
2 Pushbutton With LED

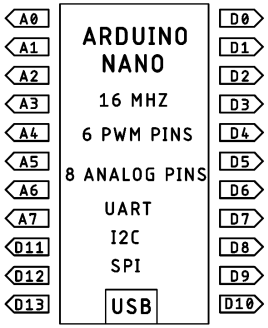
```
int buttonPin = A1;
int ledPin = 11;

int buttonstate;
int prev_buttonstate = HIGH;

void setup() {
  pinMode(buttonPin, INPUT);
  pinMode(ledPin, OUTPUT);
  digitalWrite(ledPin, prev_buttonstate);
}
void loop() {
  buttonstate = digitalRead(buttonPin);
  if (buttonstate != prev_buttonstate) {
    delay(20);
    buttonstate = digitalRead(buttonPin);
    prev_buttonstate = buttonstate;
  }
  digitalWrite(ledPin, buttonstate);
}
```






A0
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ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
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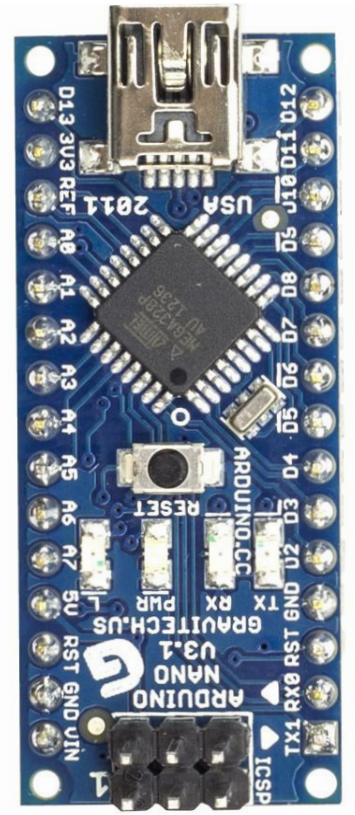
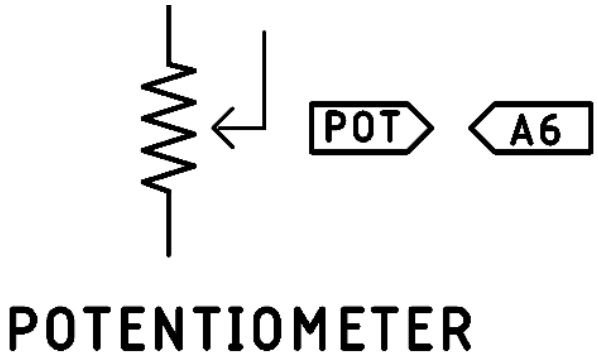

D13
3V3
REF
A0
A1
A2
A3
A4
A5
A6
A7
5V
RST
GND
VIN
D12
D11
D10
D9
D8
D7
D6
D5
D4
D3
D2
GND
RST
RX0
TX1
ICSP
USA
2011
RESET
ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
TX
RX
PWR
L

3 10k PoT Interfacing

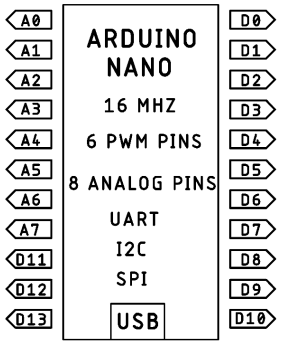


Code 1

```
int pot_pin = A6;
int pot_value;

void setup() {
  Serial.begin(9600);
  pinMode(pot_pin, INPUT);
}

void loop() {
  pot_value = analogRead(pot_pin);
  Serial.println(pot_value);
  delay(100);
}
```

Code 2

```
int green = 9;
int blue = 10;
int red = 11;
int pot_pin = A6;
int pot_value;
int led_value;
void setup() {
  pinMode(green, OUTPUT);
  pinMode(blue, OUTPUT);
  pinMode(red, OUTPUT);
  pinMode(pot_pin, INPUT);
}

void loop() {
  pot_value = analogRead(pot_pin);
  led_value = map(pot_value, 0, 1023, 0, 255);
  analogWrite(green, led_value);
  analogWrite(blue, led_value);
  analogWrite(red, led_value);
  delay(100);
}
```


A0
A1
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D13
ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
USB
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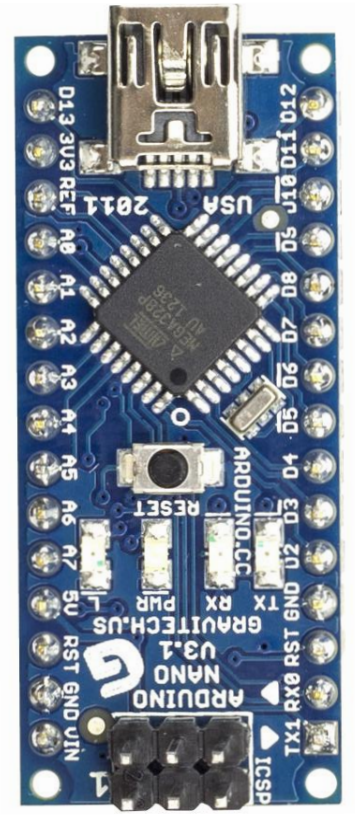
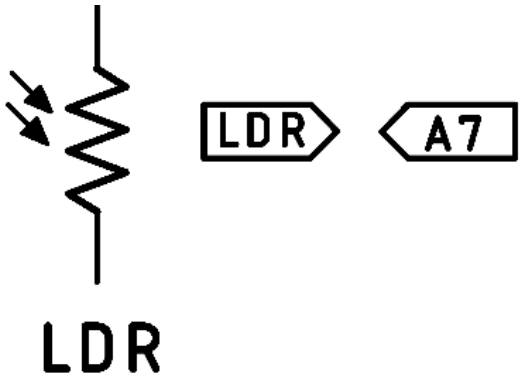

ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
RESET
ICSP
USA
2011

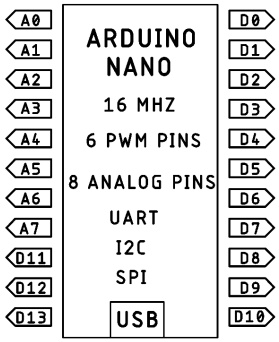
4 LDR Sensor

```
void setup() {
  Serial.begin(9600);
}

void loop() {
  int analog = analogRead(A0);
  float volt = analog * (5 / 1023.0);

  Serial.print("Analog: ");
  Serial.print(analog);
  Serial.print(" / Voltage: ");
  Serial.println(volt);
  delay(1000);
}
```




A0
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ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
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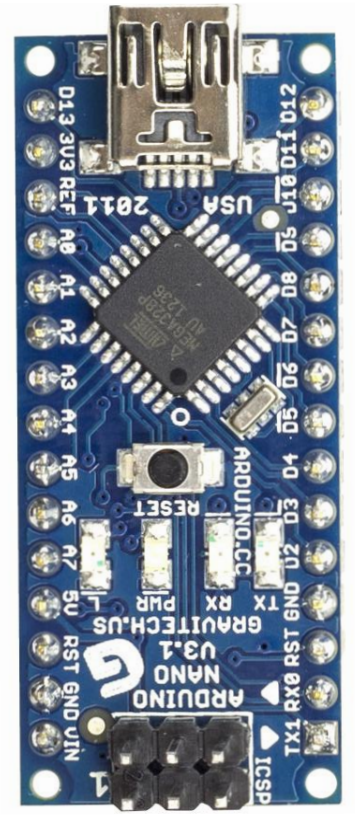
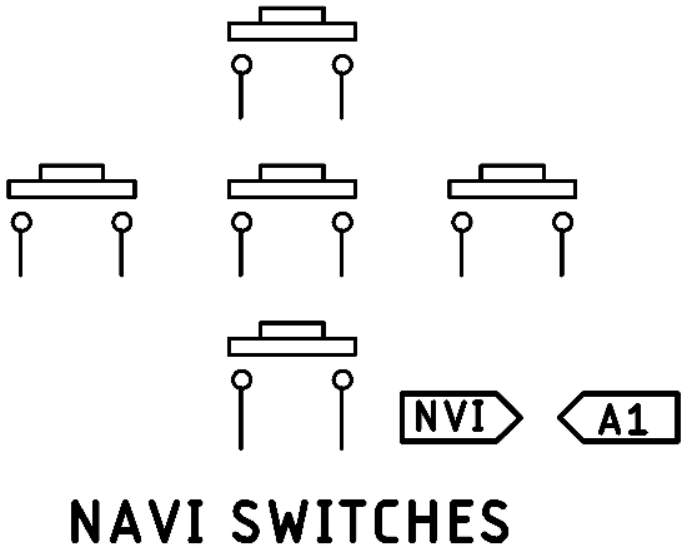
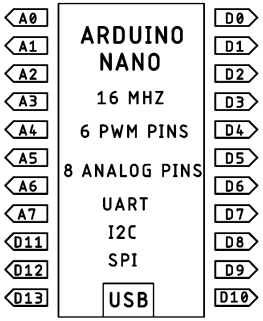

ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
RESET
ICSP
USA
2011

5 5-Push Button With One Analog Pin

```
int Switch_pin = A1;
int switch_value;
int prev_switch_value;
int button;
void setup() {
  Serial.begin(9600);
  pinMode(Switch_pin, INPUT);
  prev_switch_value = analogRead(Switch_pin);
}

void loop() {
  switch_value = analogRead(Switch_pin);
  if ((switch_value > (prev_switch_value + 20)) || (switch_value <
(prev_switch_value - 20)))
    delay(20);
  switch_value = analogRead(Switch_pin);
  if ((switch_value > (prev_switch_value + 20)) || (switch_value <
(prev_switch_value - 20))) {

    if (switch_value < 100)
      Serial.println("UP BUTTON IS PRESSED");

    else if ((switch_value > 400) && (switch_value < 600))
      Serial.println("LEFT BUTTON IS PRESSED");

    else if ((switch_value > 600) && (switch_value < 725))
      Serial.println("CENTRE BUTTON IS PRESSED");

    else if ((switch_value > 725) && (switch_value < 790))
      Serial.println("RIGHT BUTTON IS PRESSED");

    else if ((switch_value > 790) && (switch_value < 850))
      Serial.println("DOWN BUTTON IS PRESSED");

    else if (switch_value > 900)
      Serial.println("BUTTON IS RELEASED");

    prev_switch_value = switch_value;
  }
  delay(100);
}
```




A0
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ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
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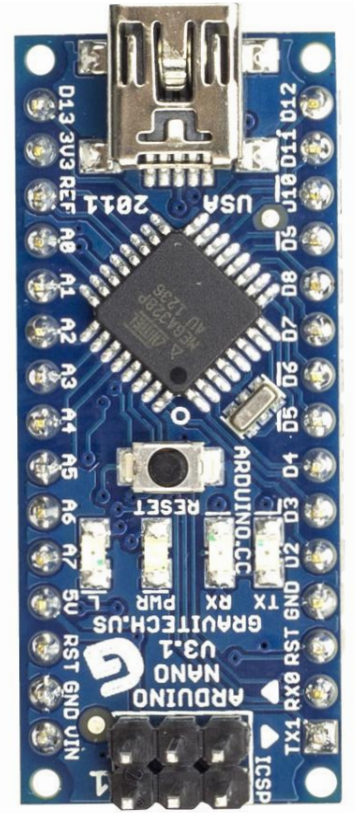

ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
ICSP
RESET
USA
2011

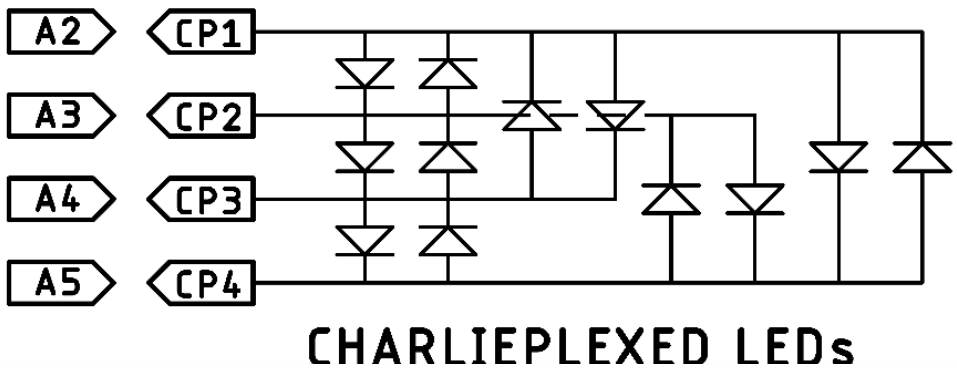
6 Charlieplexed LED

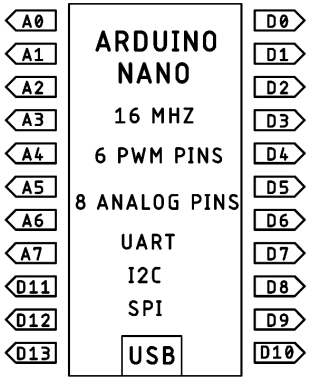
```
const int CP[4] = { A2, A3, A4, A5 };
const int POT = A6;
char pattern[12][4] = {
  "ZZ01",
  "Z0Z1",
  "0ZZ1",
  "Z01Z",
  "0Z1Z",
  "ZZ10",
  "01ZZ",
  "Z1Z0",
  "Z10Z",
  "1ZZ0",
  "1Z0Z",
  "10ZZ"
};

int MAX_DELAY = 1000;
int MIN_DELAY = 0;
int DELAY = MAX_DELAY;

void setup() {
  pinMode(POT, INPUT);
}

void loop() {
  for (int i = 0; i < 12; i++) {
    DELAY = map(analogRead(POT), 0, 1023, 0, 1000);
    for (int j = 0; j < 4; j++) {
      if (pattern[i][j] == 'Z') {
        pinMode(CP[j], INPUT);
      } else {
        pinMode(CP[j], OUTPUT);
        digitalWrite(CP[j], int(pattern[i][j]) - 48);
      }
    }
    delay(DELAY);
  }
}
```




A0
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D13
ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
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I2C
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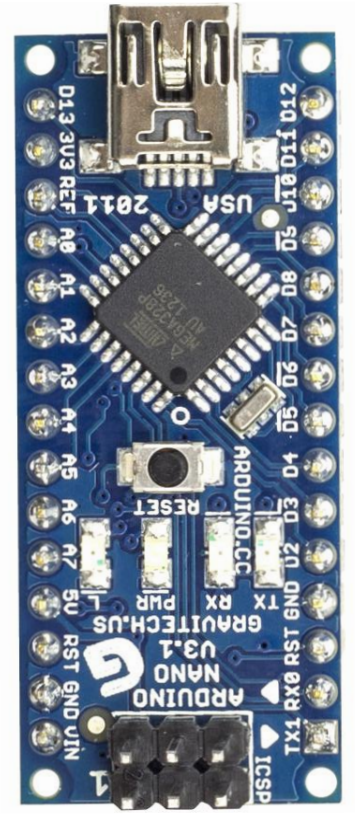
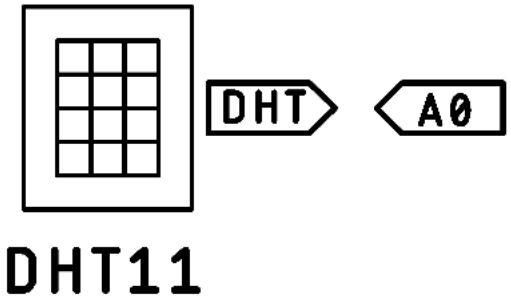

ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
RESET
ICSP
USA
2011

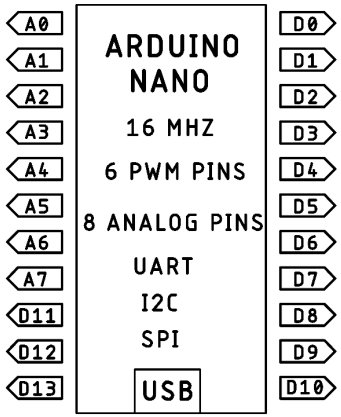
7 DHT11 Sensor

```ino
#include "DHT.h"

#define DHT_TYPE DHT11
#define DHT_PIN A0
DHT dht(DHT_PIN, DHT_TYPE);

void setup() {
  Serial.begin(115200);
  Serial.print(DHT_TYPE);
  Serial.println(" Sensor Test");
  dht.begin();
}
void loop() {
  float h = dht.readHumidity();
  float t = dht.readTemperature();
  if (isnan(h) || isnan(t)) {
    Serial.println("Error!! Reading from DHT sensor");
    return;
  }
  Serial.println("============================");
  Serial.print(" Humidity : ");
  Serial.print(h);
  Serial.println("%");
  Serial.print(" Temperature : ");
  Serial.print(t);
  Serial.print("\xC2\xB0");
  Serial.println("C");
  Serial.println("============================");
  delay(1000);
}
```




A0
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ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
USB
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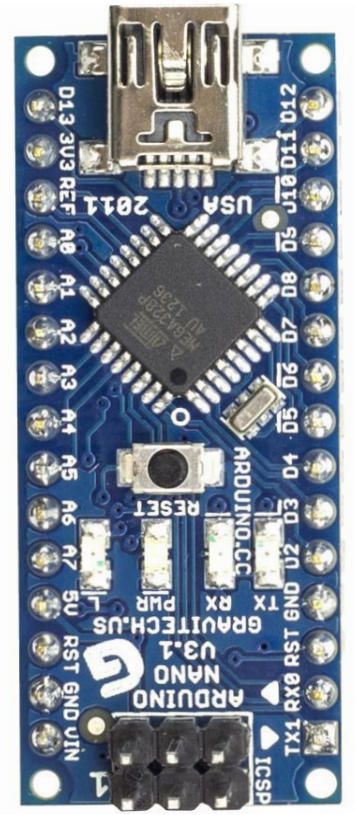

ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
RESET
ICSP

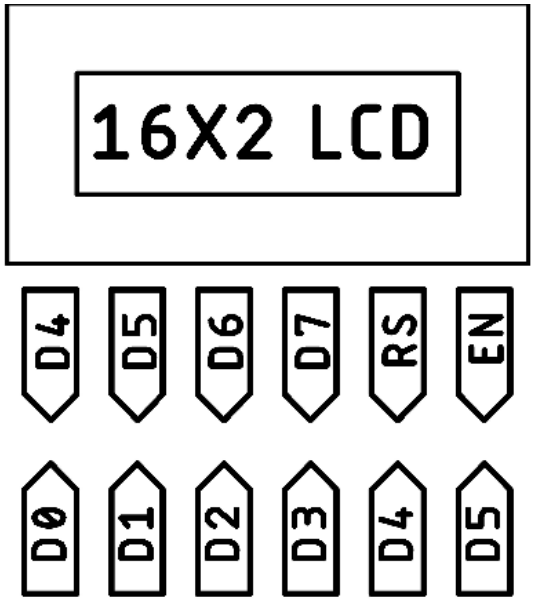
8 16x2 LCD Display

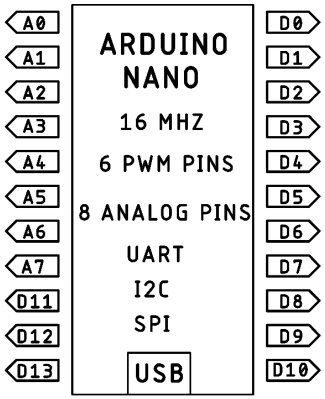
```
#include <LiquidCrystal.h>

const int rs = 4, en = 5, d4 = 0, d5 = 1, d6 = 2, d7 = 3;  //
D4,D5,D0,D1,D2,D3
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

void setup() {
  lcd.begin(16, 2);
  lcd.setCursor(0, 0);
  lcd.print("Justdoelectronic");
}

void loop() {
  lcd.setCursor(5, 1);
  lcd.print(millis() / 1000);
}
```




A0
A1
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A3
A4
A5
A6
A7
D11
D12
D13
ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
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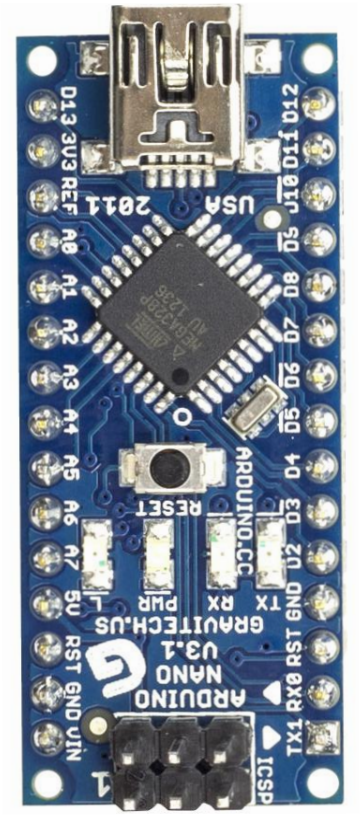
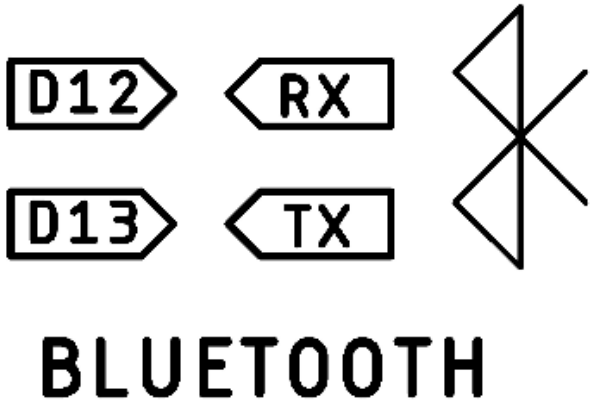
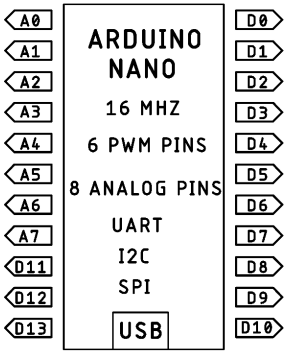
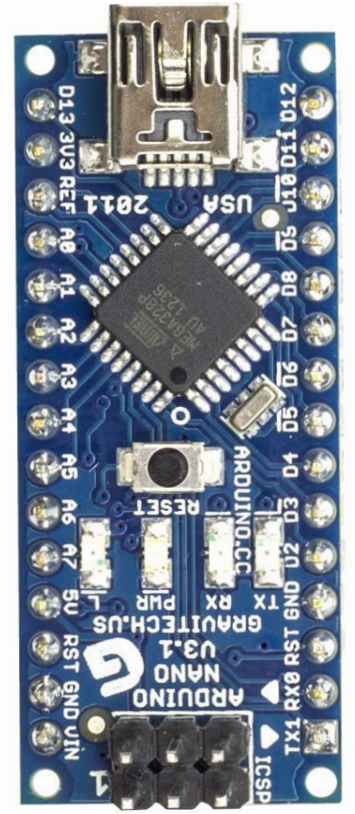

D13
3V3
REF
A0
A1
A2
A3
A4
A5
A6
A7
5V
RST
GND
VIN
D12
D11
D10
D9
D8
D7
D6
D5
D4
D3
D2
GND
RST
RX0
TX1
ICSP
J10
USA
2011
RESET
ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
L
TX
RX
PWR

9 Bluetooth

```
#include <SoftwareSerial.h>

const int Rx = 12;
const int Tx = 13;

SoftwareSerial hc05(Rx, Tx);

void setup() {
  Serial.begin(115200);
  while (!Serial)
    ;
  Serial.println("Serial Started");
  hc05.begin(9600);
  hc05.println("Hello, world?");
}

void loop() {
  if (hc05.available()) {
    Serial.write(hc05.read());
  }
  if (Serial.available()) {
    hc05.write(Serial.read());
  }
}
```

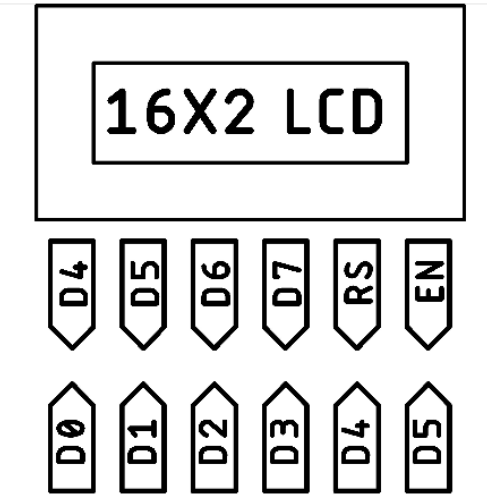


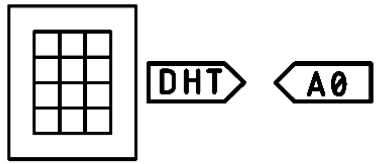

A0
A1
A2
A3
A4
A5
A6
A7
D11
D12
D13
ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
USB
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10


ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
ICSP

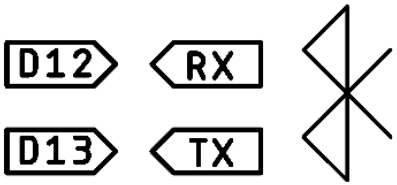
10 DHT11 Sensor With Bluetooth

```
#include "DHT.h"
#include <LiquidCrystal.h>
#include <SoftwareSerial.h>

LiquidCrystal lcd(4, 5, 0, 1, 2, 3);
const int Rx = 12;
const int Tx = 13;

SoftwareSerial hc05(Rx, Tx);

#define DHT_TYPE DHT11
#define DHT_PIN A0
DHT dht(DHT_PIN, DHT_TYPE);

void setup() {
  hc05.begin(9600);
  dht.begin();
  lcd.begin(16, 2);
  lcd.setCursor(0, 0);
  lcd.print("Welcome To");
  lcd.setCursor(0, 1);
  lcd.print("Justdoelectronic");
  delay(3000);
  lcd.clear();
}
void loop() {

  float h = dht.readHumidity();
  float t = dht.readTemperature();
  if (isnan(h) || isnan(t)) {
    Serial.println("Error!! Reading from DHT sensor");
    lcd.setCursor(0, 0);
    lcd.print("DHT Sensor Faild");
    return;
  }

  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Humidity: ");
  lcd.print(h);
  lcd.print("%");
  hc05.print("Humidity: ");
  hc05.print(h);
  hc05.println("%");
  lcd.setCursor(0, 1);
  lcd.print("Temp: ");
  lcd.print(t);
  lcd.setCursor(12, 1);
  lcd.print((char)223);
  lcd.print("C");
  hc05.print("Temp: ");
  hc05.print(t);
  hc05.print((char)223);
  hc05.println("C");

  delay(100);
}
```

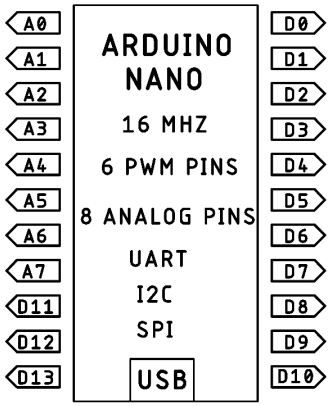


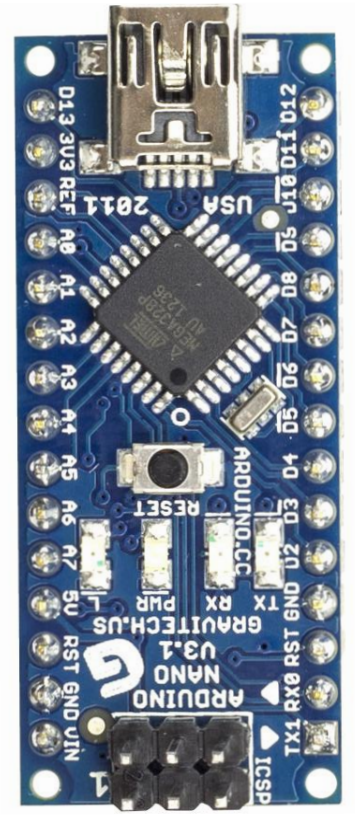


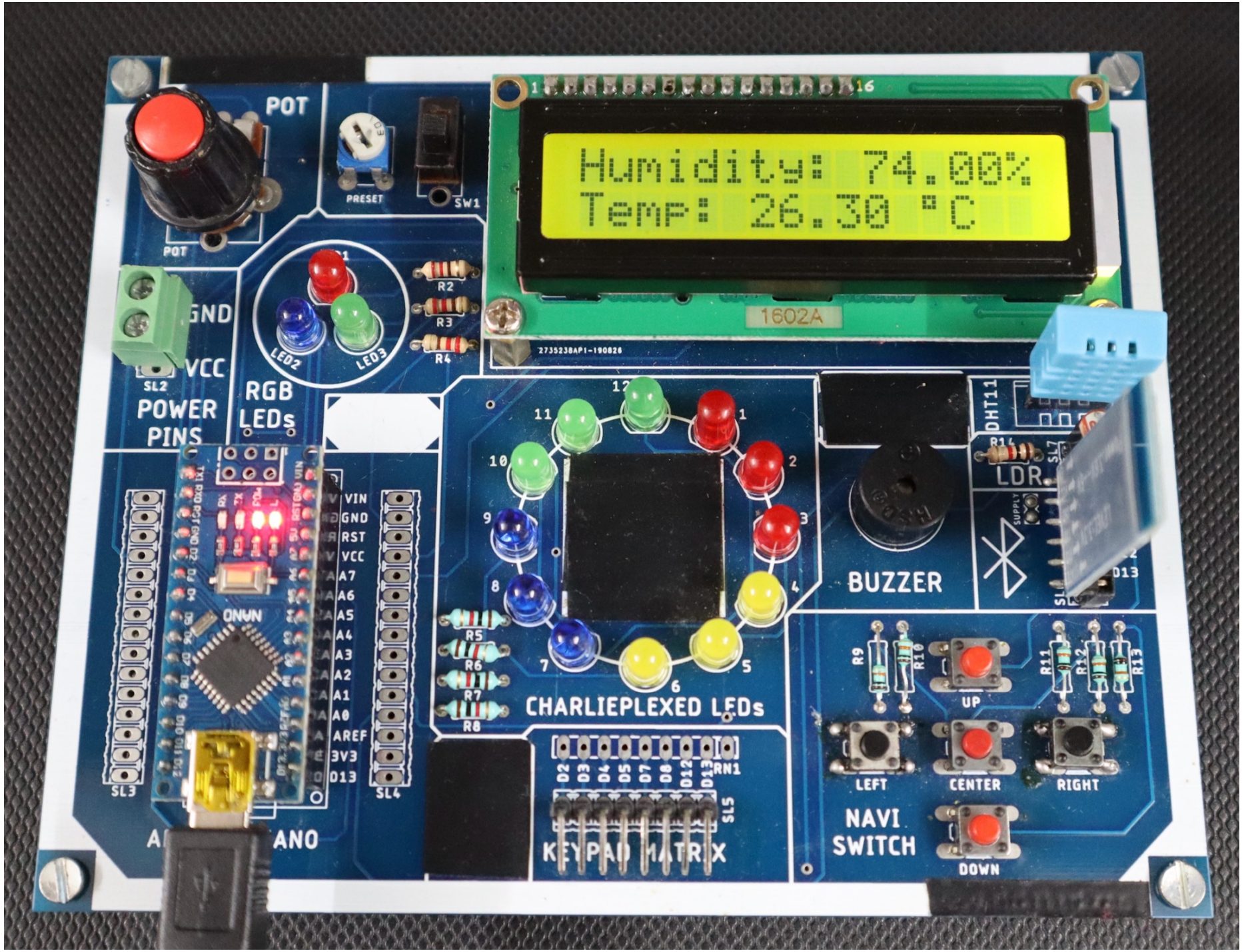
DHT11



BLUETOOTH


A0
A1
A2
A3
A4
A5
A6
A7
D11
D12
D13
ARDUINO
NANO
16 MHZ
6 PWM PINS
8 ANALOG PINS
UART
I2C
SPI
USB
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10


ARDUINO.CC
GRAVITECH.US
ARDUINO
NANO
V3.1
RESET
ICSP
USA
2011


Humidity: 74.00%
Temp: 26.30 °C
1602A
POT
PRESET
SW1
R2
R3
R4
LED2
LED3
GND
VCC
SL2
POWER PINS
RGB LEDs
DHT11
LDR
BUZZER
R5
R6
R7
R8
CHARLIEPLEXED LEDs
VIN
GND
RST
VCC
A7
A6
A5
A4
A3
A2
A1
A0
AREF
3V3
D13
SL3
SL4
KEYPAD MATRIX
RN1
SL5
R9
R10
UP
R11
R12
R13
LEFT
CENTER
RIGHT
NAVI SWITCH
DOWN