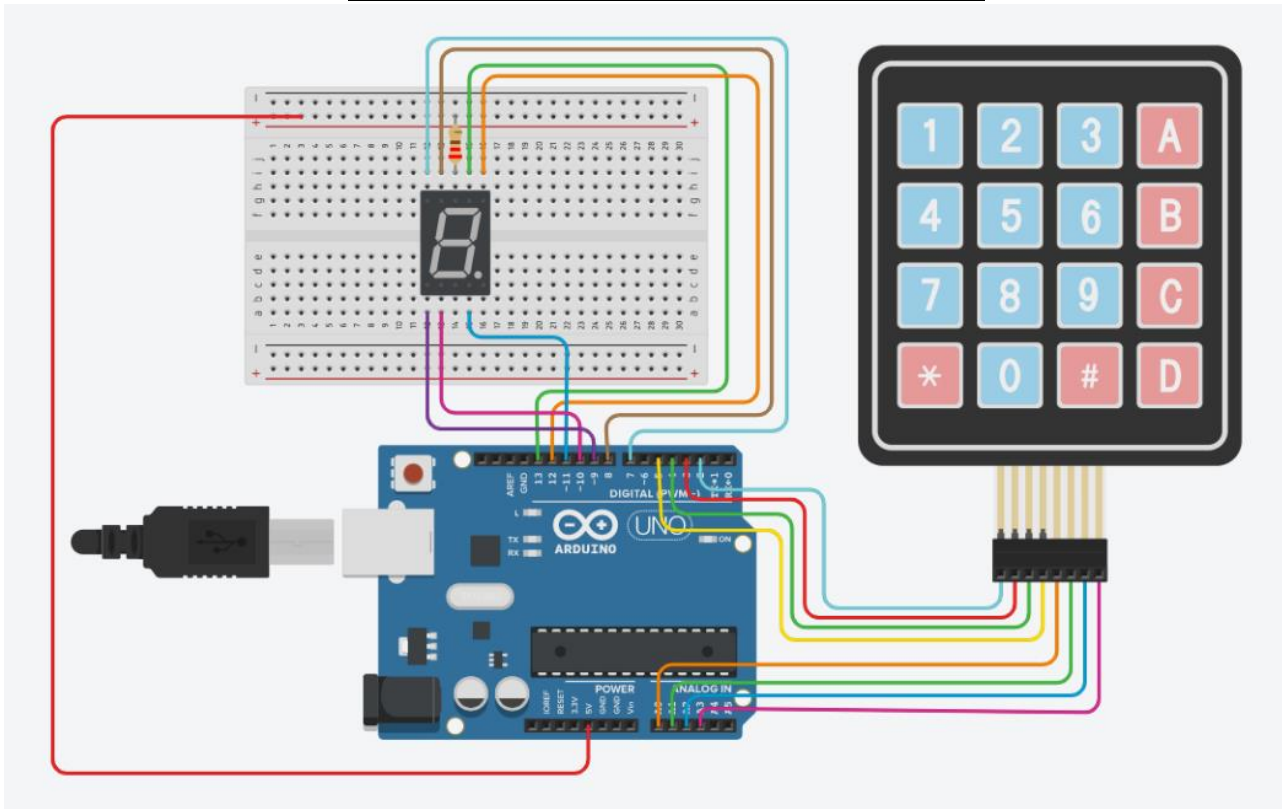# PROYECTO – KEYPAD 4*4 Y DISPLAY



```
//PROGRAMA 01 – KEYPAD 4*4

#include <Keypad.h>
int a=13;
int b=12;
int c=11;
int d=10;
int e=9;
int f=8;
int g=7;
int dp=6;
const byte ROWS = 4; //cuatro filas
const byte COLS = 4; //cuatro columnas
//Definimos el teclado
char hexaKeys[ROWS][COLS] = {
  {'1','2','3','A'},
  {'4','5','6','B'},
  {'7','8','9','C'},
  {'*','0','#','D'}
};
byte rowPins[ROWS] = {2, 3, 4, 5}; //conexiones a los pines
de filas del teclado
byte colPins[COLS] = {14, 15, 16, 17}; //conexiones a los
pines de columnas del teclado
//inicializamos un instante la clase del nuevo teclado
Keypad customKeypad = Keypad( makeKeymap(hexaKeys),
rowPins, colPins, ROWS, COLS);

void setup(){
 Serial.begin(9600);
 for(int i=6; i<14; i++)
 {
 pinMode(i,OUTPUT);
 }
}

 void cero()
{
 digitalWrite(a,LOW);
 digitalWrite(b,LOW);
 digitalWrite(c,LOW);
 digitalWrite(d,LOW);
 digitalWrite(e,LOW);
```

```
 digitalWrite(f,LOW);
 digitalWrite(g,HIGH);
 digitalWrite(dp,LOW);
  }
void uno()
{
 digitalWrite(a,HIGH);
 digitalWrite(b,LOW);
 digitalWrite(c,LOW);
 digitalWrite(d,HIGH);
 digitalWrite(e,HIGH);
 digitalWrite(f,HIGH);
 digitalWrite(g,HIGH);
 digitalWrite(dp,LOW);
 }

void dos()
{
 digitalWrite(a,LOW);
 digitalWrite(b,LOW);
 digitalWrite(c,HIGH);
 digitalWrite(d,LOW);
 digitalWrite(e,LOW);
 digitalWrite(f,HIGH);
 digitalWrite(g,LOW);
 digitalWrite(dp,LOW);
 }
void tres()
{
 digitalWrite(a,LOW);
 digitalWrite(b,LOW);
 digitalWrite(c,LOW);
 digitalWrite(d,LOW);
 digitalWrite(e,HIGH);
 digitalWrite(f,HIGH);
 digitalWrite(g,LOW);
 digitalWrite(dp,LOW);
 }

void cuatro()
{
 digitalWrite(a,HIGH);
 digitalWrite(b,LOW);
```

```cpp
  digitalWrite(c,LOW);
  digitalWrite(d,HIGH);
  digitalWrite(e,HIGH);
  digitalWrite(f,LOW);
  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);

  }

void cinco()
{
  digitalWrite(a,LOW);
  digitalWrite(b,HIGH);
  digitalWrite(c,LOW);
  digitalWrite(d,LOW);
  digitalWrite(e,HIGH);
  digitalWrite(f,LOW);
  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);
  }

void seis()
{
  digitalWrite(a,LOW);
  digitalWrite(b,HIGH);
  digitalWrite(c,LOW);
  digitalWrite(d,LOW);
  digitalWrite(e,LOW);
  digitalWrite(f,LOW);
  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);
  }

void siete()
{
  digitalWrite(a,LOW);
  digitalWrite(b,LOW);
  digitalWrite(c,LOW);
  digitalWrite(d,HIGH);
  digitalWrite(e,HIGH);
  digitalWrite(f,HIGH);
  digitalWrite(g,HIGH);
  digitalWrite(dp,LOW);
  }

void ocho()
{
  digitalWrite(a,LOW);
  digitalWrite(b,LOW);
  digitalWrite(c,LOW);
  digitalWrite(d,LOW);
  digitalWrite(e,LOW);
  digitalWrite(f,LOW);
  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);
  }

void nueve()
{
  digitalWrite(a,LOW);
  digitalWrite(b,LOW);
  digitalWrite(c,LOW);
  digitalWrite(d,LOW);
  digitalWrite(e,HIGH);
  digitalWrite(f,LOW);
  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);
  }

void limpiar()
{
  digitalWrite(a,LOW);
  digitalWrite(b,LOW);
  digitalWrite(c,LOW);
  digitalWrite(d,LOW);
  digitalWrite(e,LOW);
  digitalWrite(f,LOW);

  digitalWrite(g,LOW);
  digitalWrite(dp,LOW);
  }


void loop(){
  char customKey = customKeypad.getKey();


  if (customKey){

    switch (customKey)
    {
      case '0':
      limpiar();
      cero();
      Serial.println(customKey);
      break;

      case '1':
      limpiar();
      uno();
      Serial.println(customKey);
      break;

      case '2':
      limpiar();
      dos();
      Serial.println(customKey);
      break;

      case '3':
      limpiar();
      tres();
      Serial.println(customKey);
      break;

      case '4':
      limpiar();
      cuatro();
      Serial.println(customKey);
      break;

      case '5':
      limpiar();
      cinco();
      Serial.println(customKey);
      break;

      case '6':
      limpiar();
      seis();
      Serial.println(customKey);
      break;

      case '7':
      limpiar();
      siete();
      Serial.println(customKey);
      break;

      case '8':
      limpiar();
      ocho();
      Serial.println(customKey);
      break;

      case '9':
      limpiar();
      nueve();
      Serial.println(customKey);
      break;

    }

  }
}
```