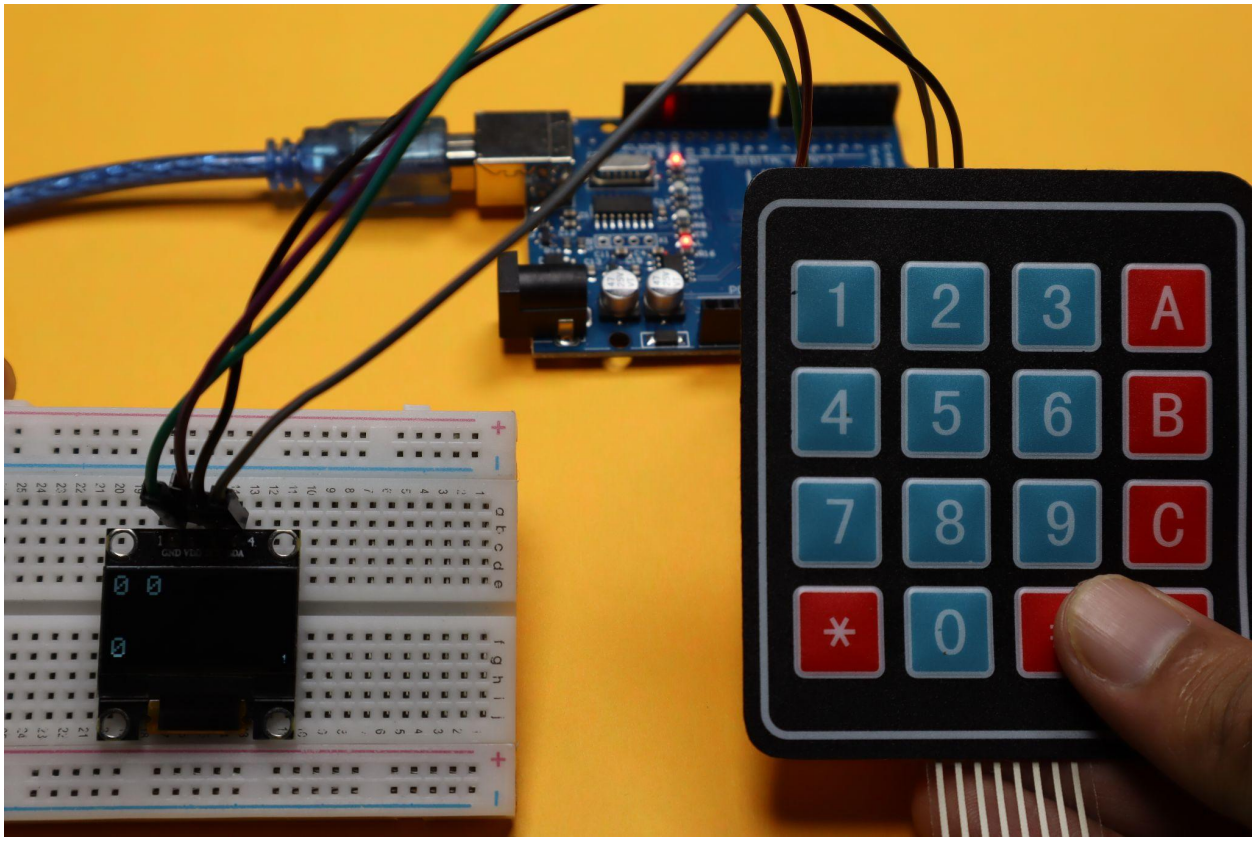
Simple Calculator using OLED Display and Keypad



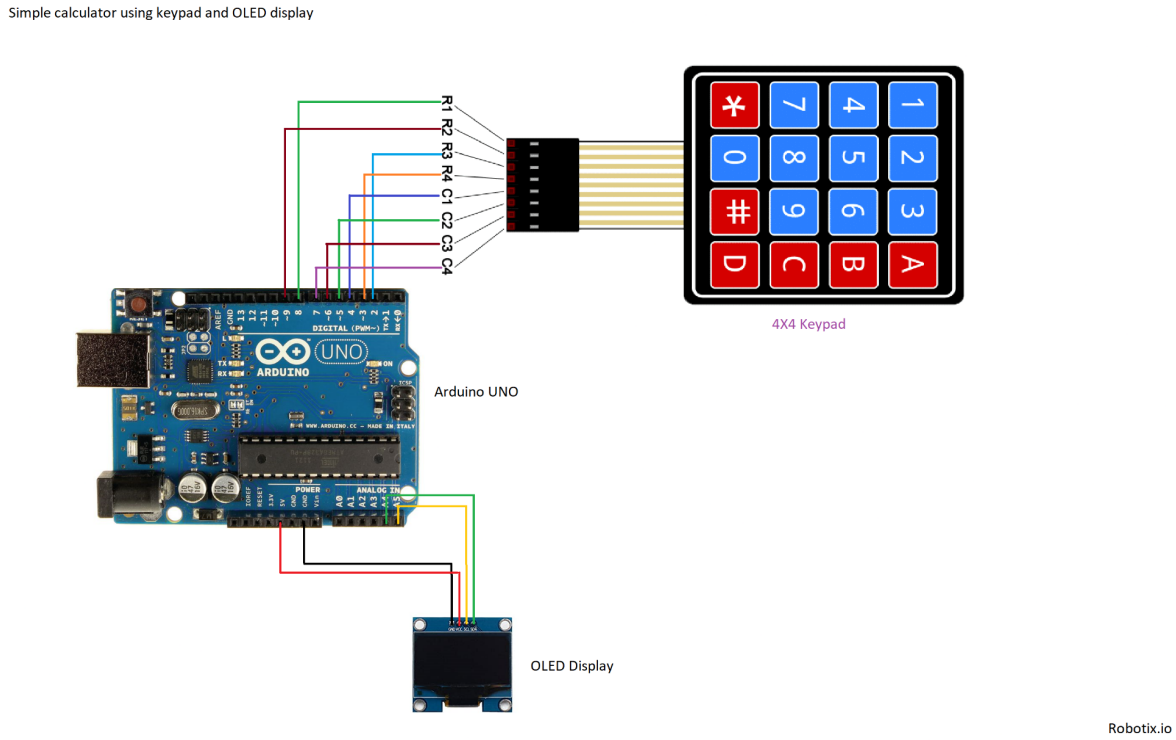
Material Required 🧰 :

S No.	Components	Link
1	Arduino UNO	https://amzn.to/3Ckhn6V
2	Breadboard Small / Large	https://amzn.to/3yx0TqV
3	4x4 Keypad	https://amzn.to/3T6Vv5K
4	Arduino Cable	https://amzn.to/3VeWXop
5	Connecting Wires	https://amzn.to/3rLAWQM
6	OLED display	https://amzn.to/3eg9Hdt

Download These Libraries :

```
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <Keypad.h>
```

Circuit Diagram :



Code :

```
#include <SPI.h>
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <Keypad.h>

#define SCREEN_WIDTH 128 // OLED display width, in pixels
```

```
#define SCREEN_HEIGHT 64 // OLED display height, in pixels

#define OLED_RESET 4
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire,
OLED_RESET);


const byte ROWS = 4; // Four rows
const byte COLS = 4; // Four columns

// Define the Keymap
char keys[ROWS][COLS] = {

  {'1','2','3','A'},

  {'4','5','6','B'},

  {'7','8','9','C'},

  {'*','0','#','D'}

};

byte rowPins[ROWS] = { 8, 9, 2, 3 };// Connect keypad ROW0, ROW1,
ROW2 and ROW3 to these Arduino pins.
byte colPins[COLS] = { 4, 5, 6, 7 }; // Connect keypad COL0, COL1 and
COL2 to these Arduino pins.

Keypad kpd = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS
); //  Create the Keypad

 long Num1,Num2,Number;
 char key,action;
 boolean result = false;

void setup() {

  Serial.begin(9600);
    if(!display.begin(SSD1306_SWITCHCAPVCC, 0x3C))
```

```
    { // Address 0x3D for 128x64
    Serial.println(F("SSD1306 allocation failed"));
    for(;;);
    }
  delay(2000);
  display.clearDisplay();
  display.setTextSize(1);
  display.setTextColor(WHITE);
  display.setCursor(20,10);
  display.println("By Robotix.io");
  display.display();
  delay(2000);
  display.clearDisplay();

}

void loop()
{

key = kpd.getKey(); //storing pressed key value in a char

if (key!=NO_KEY)
DetectButtons();

if (result==true)
CalculateResult();

DisplayResult();
}

void DetectButtons()
{
    display.clearDisplay();
    if (key=='*') //If cancel Button is pressed
    {Serial.println ("Button Cancel"); Number=Num1=Num2=0; action = '
'; result=false;}

     if (key == '1') //If Button 1 is pressed
    {Serial.println ("Button 1");
```

```
if (Number==0)
Number=1;
else
Number = (Number*10) + 1; //Pressed twice
}

 if (key == '4') //If Button 4 is pressed
{Serial.println ("Button 4");
if (Number==0)
Number=4;
else
Number = (Number*10) + 4; //Pressed twice
}

 if (key == '7') //If Button 7 is pressed
{Serial.println ("Button 7");
if (Number==0)
Number=7;
else
Number = (Number*10) + 7; //Pressed twice
}


if (key == '0')
{Serial.println ("Button 0"); //Button 0 is Pressed
if (Number==0)
Number=0;
else
Number = (Number*10) + 0; //Pressed twice
}

 if (key == '2') //Button 2 is Pressed
{Serial.println ("Button 2");
 if (Number==0)
Number=2;
else
Number = (Number*10) + 2; //Pressed twice
}
```

```
 if (key == '5')
{Serial.println ("Button 5");
 if (Number==0)
Number=5;
else
Number = (Number*10) + 5; //Pressed twice
}

 if (key == '8')
{Serial.println ("Button 8");
 if (Number==0)
Number=8;
else
Number = (Number*10) + 8; //Pressed twice
}


if (key == '#')
{Serial.println ("Button Equal");
Num2=Number;
result = true;
}

 if (key == '3')
{Serial.println ("Button 3");
 if (Number==0)
Number=3;
else
Number = (Number*10) + 3; //Pressed twice
}

 if (key == '6')
{Serial.println ("Button 6");
if (Number==0)
Number=6;
else
Number = (Number*10) + 6; //Pressed twice
}
```

```
     if (key == '9')
    {Serial.println ("Button 9");
    if (Number==0)
    Number=9;
    else
    Number = (Number*10) + 9; //Pressed twice
    }

      if (key == 'A' || key == 'B' || key == 'C' || key == 'D')
//Detecting Buttons on Column 4
  {
    Num1 = Number;
    Number =0;
    if (key == 'A')
    {Serial.println ("Addition"); action = '+';}
     if (key == 'B')
    {Serial.println ("Subtraction"); action = '-'; }
     if (key == 'C')
    {Serial.println ("Multiplication"); action = '*';}
     if (key == 'D')
    {Serial.println ("Devesion"); action = '/';}

    delay(100);
  }

}

void CalculateResult()
{
  if (action=='+')
    Number = Num1+Num2;

  if (action=='-')
    Number = Num1-Num2;

  if (action=='*')
    Number = Num1*Num2;

  if (action=='/')
```

```
    Number = Num1/Num2;
}

void DisplayResult()
{
  display.setCursor(0, 0);   // set the cursor to column 0, line 1
  display.setTextSize(2);
  display.print(Num1);
  display.print(action);
  display.print(Num2);
  display.display();

  if (result==true)
  {
     display.setCursor(0, 15);   // set the cursor to column 0, line
1
    display.setTextSize(2);
    display.print("=");
    display.print(Number);
  } //Display the result

  display.setCursor(0, 45);   // set the cursor to column 0, line 1
  display.print(Number); //Display the result
}
```