Advanced Embedded Systems

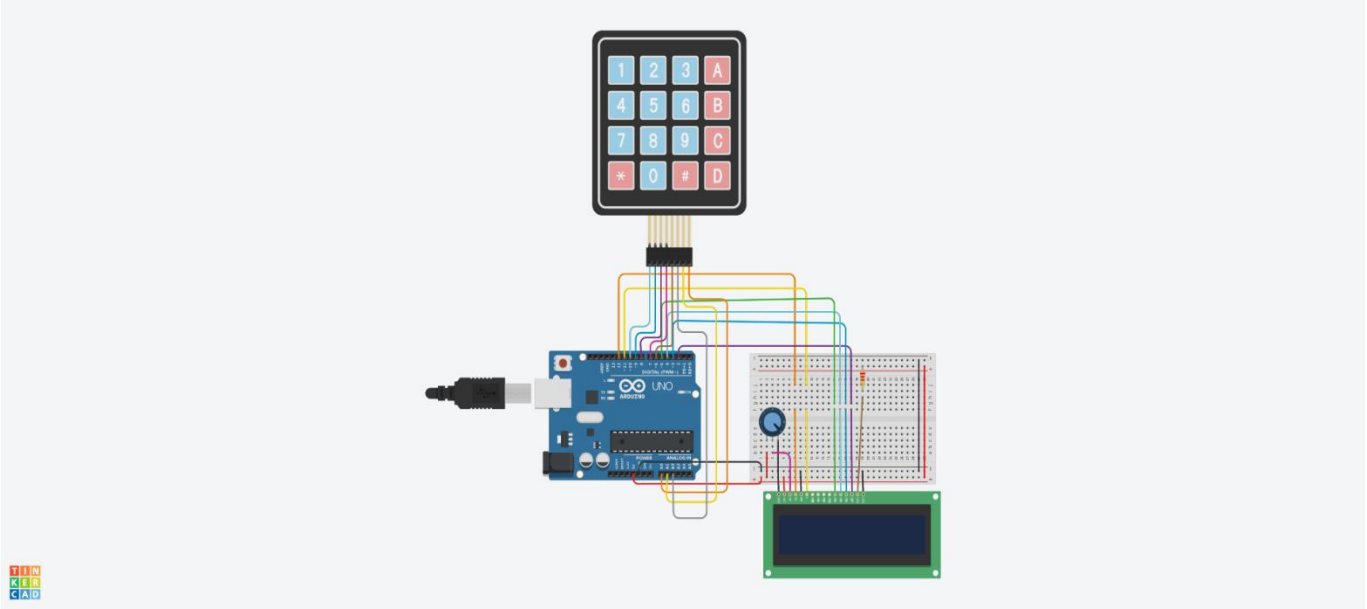
Mini Project

Aim: Using a LCD monitor and a 4 x 4 Keypad with Arduino.

Components:

- Arduino UNO (1x).
- USB 2.0 Cable Type A/B (1x).
- LCD I2C (16 rows, 2 columns) (1x).
- Keypad (4 x 4) (1x).
- Jump Wires (Male / Female) (12x).

Circuit Diagram:



Connections:

Groups	Pins	
	From	To
Arduino to Keypad	A0	C4
	A1	C3
	A2	C2
	6	C1
	7	R4
	8	R3
	9	R2
	10	R1

Source Code:

```
#include <LiquidCrystal.h>
#include <Key.h>
#include <Keypad.h>

// initialize the library with the numbers of the interface pins
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
const byte ROWS=4;
const byte COLS=4;

char keys[ROWS][COLS]={
 {'1','2','3','A'},
 {'4','5','6','B'},
 {'7','8','9','C'},
 {'*','0','#','D'}
};
byte colPins[ROWS]={6,A2,A1,A0}; //Connect to the row pinouts of keypad
byte rowPins[COLS]={10,9,8,7};//Connect to the row pinouts of keypad
Keypad keypad = Keypad (makeKeymap(keys),rowPins,colPins,ROWS,COLS);
int LCDROW=0;

void setup() {
  Serial.begin(9600);
  lcd.begin(16, 2);
  lcd.setCursor(LCDROW ,0);

}

void loop() {

  char key=keypad.getKey();
  if(key)
  {

     lcd.print(key);
     lcd.setCursor(++LCDROW ,0);
    }  }
```