

Experiment No. 3

Aim: To implement Inter-Integrated Circuit (I²C) protocol for serial communication between Arduino and liquid crystal display (LCD) modules, enabling alphanumeric data visualization.

Apparatus: Wokwi Simulator

Circuit Layout:

(a)

(b)

Figure 1: (a) Pin description of LCD (b) I2C Serial Interface Adapter Module Pinout

(a)

(b)

Figure 2: (a) I2C LCD Display Pinout (b) Interfacing I2C LCD with Arduino Uno

Theory:

LCD:

****To be completed by the student**

I2C module:

****To be completed by the student**

Code used:

```
// Add Liquid Crystal I2C library

#include <LiquidCrystal_I2C.h>

/ Add the lcd
LiquidCrystal_I2C lcd(0x27, 16, 2);

void setup() {
  // Initialise the LCD
  lcd.init();
  // Turn on the LCD backlight
  lcd.backlight();
  // Put text on the LCD
  lcd.print("Name");
}
```

```
void loop() {  
  // No code needed for this part, you can put your code here if you want.  
}
```

Simulation Outcome:

(a)

(b)

Figure 3: Depiction on LCD of (a) Roll number (b) Name

Result:

**To be completed by the student