**KIIT, Deemed to be University**
**School of Computer Engineering**
**Sensors And Automation [EC28005]**

# EXPERIMENT -2

**Aim:**

Interfacing of LCD JHD 16X2 with Arduino Uno and Display Name.

**Component/Software Used:**

| Component/Software | Specification |
|---|---|
| Arduino Uno | - |
| Bread Board, Cables, Connecting Wires, Laptop/Computer | - |
| Software(s) Used | Arduino IDE 2.2.1 |

**Theory:**

**Principle of Working:**

1. **Power Connection:** Connect the VSS pin of the LCD to GND on the Arduino, and the VDD pin to +5V on the Arduino to provide power to the LCD.

2. **Contrast Adjustment:** Connect the V0 pin of the LCD to a potentiometer to adjust the contrast of the display.

3. **Data Lines:** Connect the RW pin of the LCD to GND, RS pin to a digital pin on the Arduino (e.g., pin 12), and E pin to another digital pin (e.g., pin 11) to enable communication with the LCD.

4. **Data Bus:** Connect the D4 to D7 pins of the LCD to digital pins on the Arduino (e.g., pins 5 to 8) to send data to the LCD.

5. **Display Name:** Use the Arduino Uno to send commands and data to the LCD to display characters, numbers, and custom symbols on the 16x2 display.

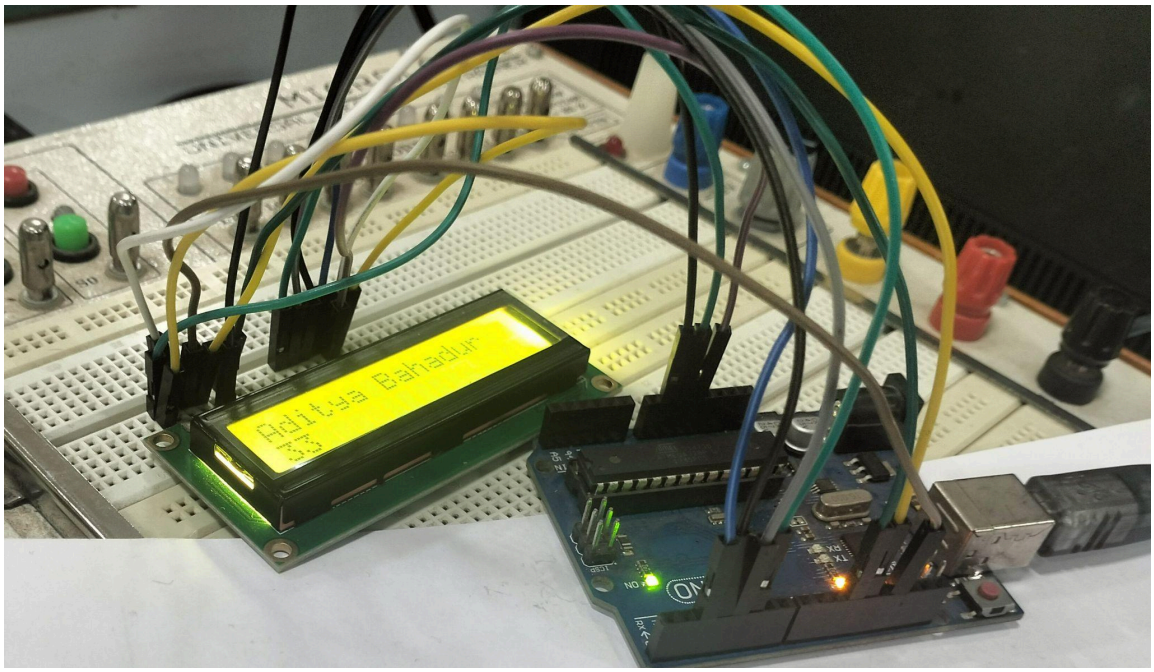
Once these connections are made, we can use Arduino programming to control the LCD and display the desired information.

**Program:**

```
#include <LiquidCrystal.h>  // include the library code:
const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;// initialize the
library by associating any needed LCD interface pin // with the arduino pin
number it is connected to
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);
void setup() {  // set up the LCD's number of columns and rows:
lcd.begin(16, 2);  // Print a message to the LCD.
lcd.print("hello, world!");
}
void loop() {   // set the cursor to column 0, line 1
```

```
lcd.setCursor(0, 1);    // (note: line 1 is the second row, since counting begins
with 0):
lcd.print(millis() / 1000);  // print the number of seconds since reset:
}
```

## Result picture:




**Conclusion:**

Interfacing an LCD JHD 16x2 with an Arduino Uno involves establishing the power connections, adjusting the contrast, connecting the data lines, and utilizing the data bus to send commands and data to the display. By following the principles of working and ensuring the correct connections, we can effectively control the LCD and display desired information using Arduino programming.

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