JAVA IOT DEVELOPER LAB

LAB -6

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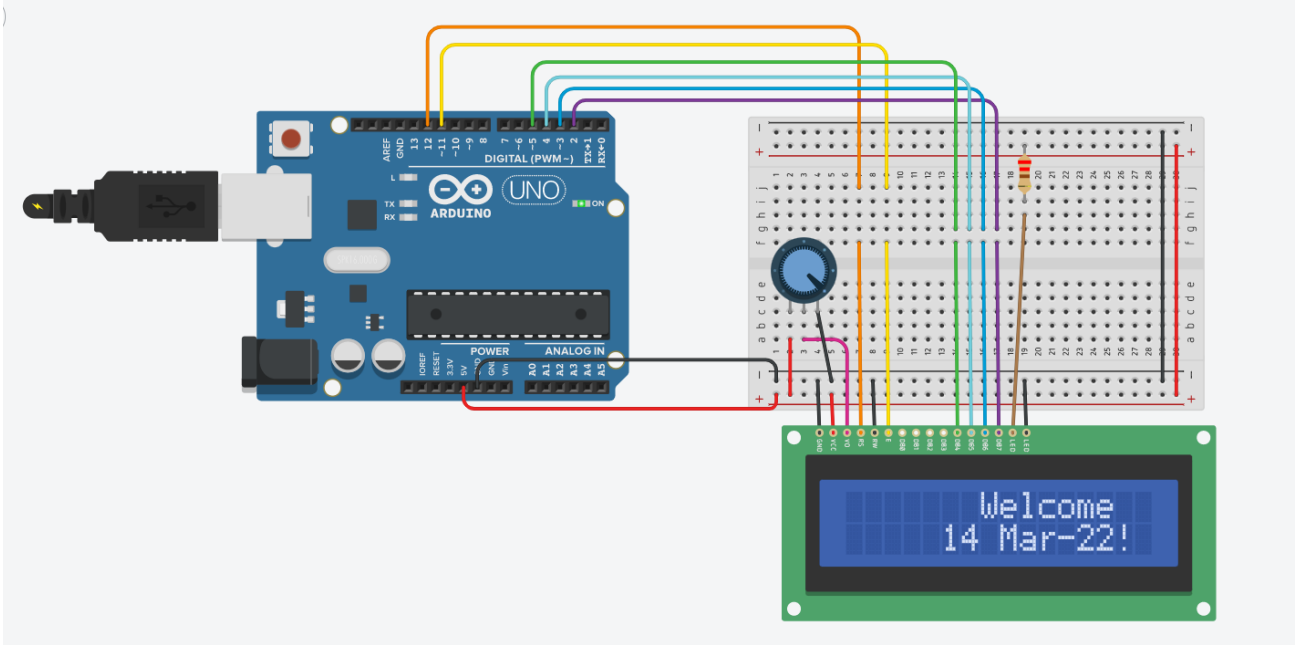
Questions :-

Q1. On an LCD display a scrolling text (that scrolls in both direction). Add text in both the lines. Example was shown in the lab.

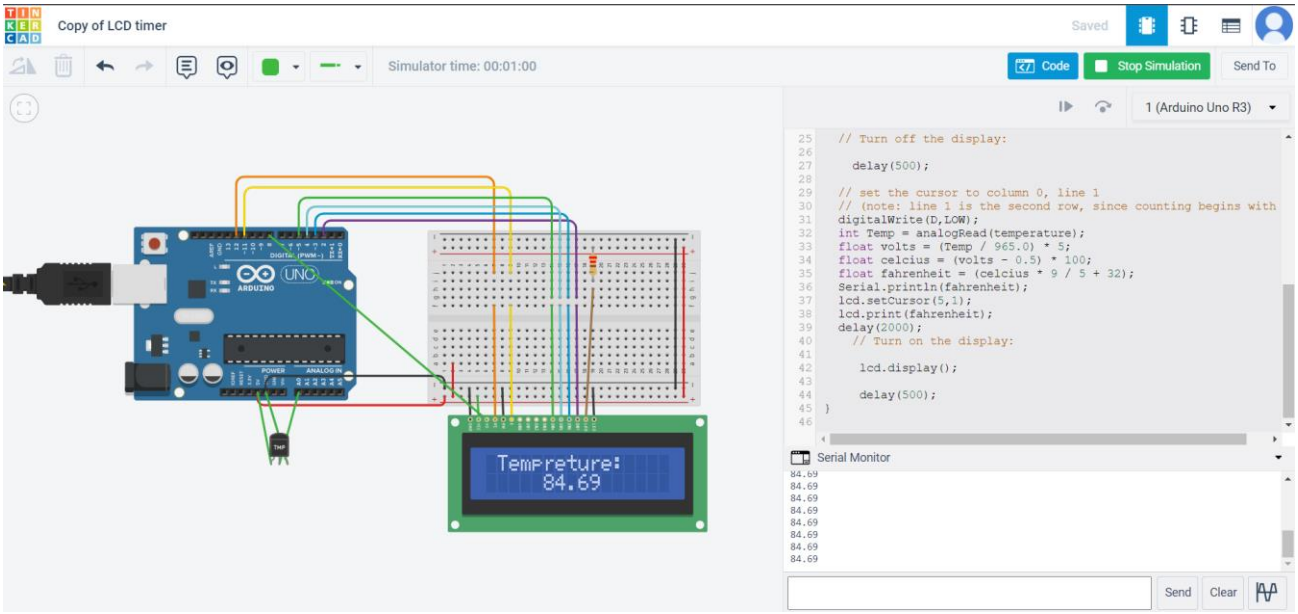
```
        #include <LiquidCrystal.h>

//Initialise the LCD with the arduino.
//LiquidCrystal(rs, enable, d4, d5, d6, d7)
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

void setup() {
  // set up the LCD's number of columns and rows:
  lcd.begin(16, 2);
  // Print a message to the LCD.
  lcd.setCursor(18,0);
  lcd.print("Welcome");
  lcd.setCursor(16,1);
  lcd.print("14 Mar-22!");
}

void loop() {

        lcd.display();
for (int positionCounter = 0; positionCounter < 31; positionCounter++) {
    // scroll one position left:
    lcd.scrollDisplayLeft();
    // wait a bit:
    delay(100);
  }
  for (int positionCounter = 0; positionCounter < 32; positionCounter++) {
    // scroll one position left:
    lcd.scrollDisplayRight();
    // wait a bit:
    delay(100);
  }
  //dISPLAY DETAILS
          delay(100);
}
```



Q2. Read the sensor value from a temperature sensor and display it on a serial monitor and an LCD.

```
// Import/include the Liquid Crystal library

#include <LiquidCrystal.h>

//Initialise the LCD with the arduino.
//LiquidCrystal(rs, enable, d4, d5, d6, d7)
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
const int temperature = A0; //A0 is the analog pin
const int D = 8;

void setup() {
  // set up the LCD's number of columns and rows:
  lcd.begin(16, 2);
  lcd.setCursor(1,0);
            lcd.print("Tempreture:");

  // Print a message to the LCD.
  Serial.begin(9600);
  pinMode(D, OUTPUT);

}

void loop() {

  // Turn off the display:

            delay(500);

  // set the cursor to column 0, line 1
  // (note: line 1 is the second row, since counting begins with 0):
  digitalWrite(D,LOW);
  int Temp = analogRead(temperature);
  float volts = (Temp / 965.0) * 5;
```

```
  float celcius = (volts - 0.5) * 100;
  float fahrenheit = (celcius * 9 / 5 + 32);
  Serial.println(fahrenheit);
  lcd.setCursor(5,1);
  lcd.print(fahrenheit);
  delay(2000);
          // Turn on the display:

           lcd.display();

           delay(500);
}
```



Q3. Using serial communication, send a message from serial terminal to the LCD.

```
// Import/include the Liquid Crystal library

#include <LiquidCrystal.h>

//Initialise the LCD with the arduino.
//LiquidCrystal(rs, enable, d4, d5, d6, d7)
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
const int D = 8;
String input;

void setup() {
  // set up the LCD's number of columns and rows:
  lcd.begin(16, 2);
  lcd.setCursor(1,0);
          lcd.print("INPUT:");

  // Print a message to the LCD.
  Serial.begin(9600);
  pinMode(D, OUTPUT);

}
```

```
void loop() {


 delay(500);

  digitalWrite(D,LOW);

  if(Serial.available()){
        input = Serial.readStringUntil('\n');
            Serial.print("You typed: " );
        Serial.println(input);
        lcd.setCursor(7,0);
                        lcd.print(input);
                        delay(2000);
    }

            lcd.display();

             delay(500);
}
```