Experiment: 2

Student Name: Virat Samdarshi	**UID: 22BCS12648**
Branch: B.E(CSE)	**Section/Group: IOT_627-B**
Semester: Fifth	**Date of Performance:26/07/24**
Subject Name: IOT LAB	**Subject Code: 22CSP-329**

1. Aim: To Design LCD interfacing on WOKWI or Any other IoT Simulation Platform.

2. Objective:

- Learn about IoT based simulations.
- Testing and model in IoT based simulation platform

Software Required:

1. Tinker CAD
2. LCD
3. Arduino Uno

3. Procedure :

1.Open the WOKWI or TinkerCad simulation platform in your web browser and create a new project.

2. Select the components needed for LCD interfacing, including an Arduino board, LCD module, and necessary resistors and wires. These components should be available in the platform's component library.

3. Place the Arduino board on the workspace and connect it to the power and ground rails.

4. Connect the LCD module to the Arduino board. Typically, the LCD module will have 16 pins. Connect the appropriate pins of the LCD module to the corresponding pins of the Arduino board. Refer to the datasheet or documentation of the LCD module for the pinout details.

5. Add the necessary resistors to the circuit. The LCD module usually requires a potentiometer or a series of resistors to control the contrast of the display. Connect these components according to the LCD module's datasheet.

6. Use jumper wires to establish the connections between the Arduino board, LCD module, and resistors. Pay attention to the pin configurations and ensure that the connections are correct.

7. Write a program for the Arduino to control the LCD module. Depending on your requirements, you can display text, numbers, or custom characters on the LCD. The programming language used in Arduino is based on C/C++. If you're new to Arduino programming, you can find plenty of examples and tutorials online.

8. Upload the program to the Arduino board using the simulation platform's interface. This will allow you to test the LCD interfacing circuit virtually.

9. Run the simulation to see the output on the LCD module. Make sure the connections and code are correct. If you encounter any issues, debug your circuit and program accordingly.
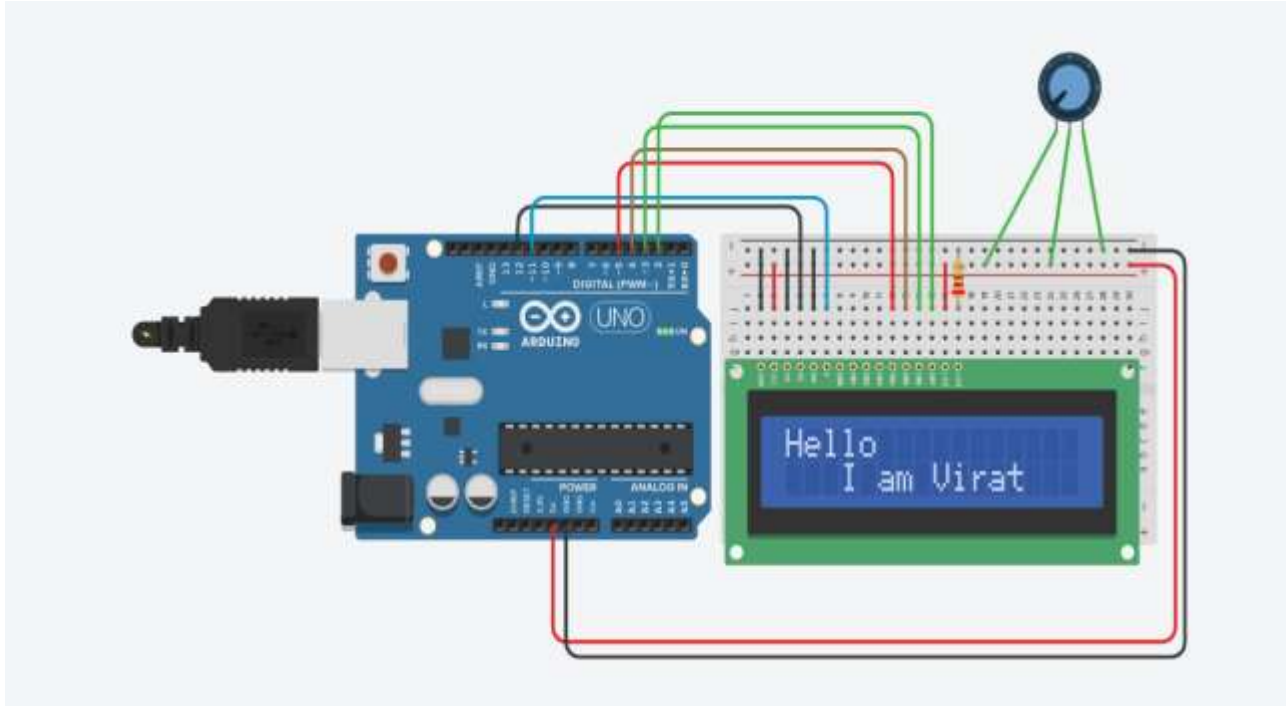
4. Code:

```
#include<LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
void setup()
{
 lcd.begin(16, 2);
}

void loop()
{
  lcd.setCursor(0,0);
  lcd.print("Hello");
  lcd.setCursor(2,1);
  lcd.print(" I am Virat ");
  }
```

5. Output:

6. Learning Outcomes:

- Understand IoT simulations.
- Learn LCD interfacing with Arduino Uno.
- Develop Arduino programming skills.
- Design and test circuits in a simulation platform.
- Improve problem-solving and troubleshooting skills.