Practical 1

1. **Title:** To interface light/Buzzer with Arduino and write a program to turn On LED for 1 sec after every 2 seconds

2. **Outcome:** A LED which turns on for one second at an interval of 2 seconds

3. **Objectives :** To Understand how different ports in Arduino Uno R3 work

4. **Theory:**

   The Arduino is a popular microcontroller board that can be programmed to control various electronic components, including LEDs. LEDs (Light Emitting Diodes) are semiconductor devices that emit light when a current is passed through them. In this experiment, we will interface an LED with the Arduino and write a program to turn it on for 1 second after every 2 seconds.

   To interface an LED with the Arduino, we will use a resistor in series with the LED to limit the current flowing through the LED. The resistor value will depend on the LED's forward voltage and the desired current.

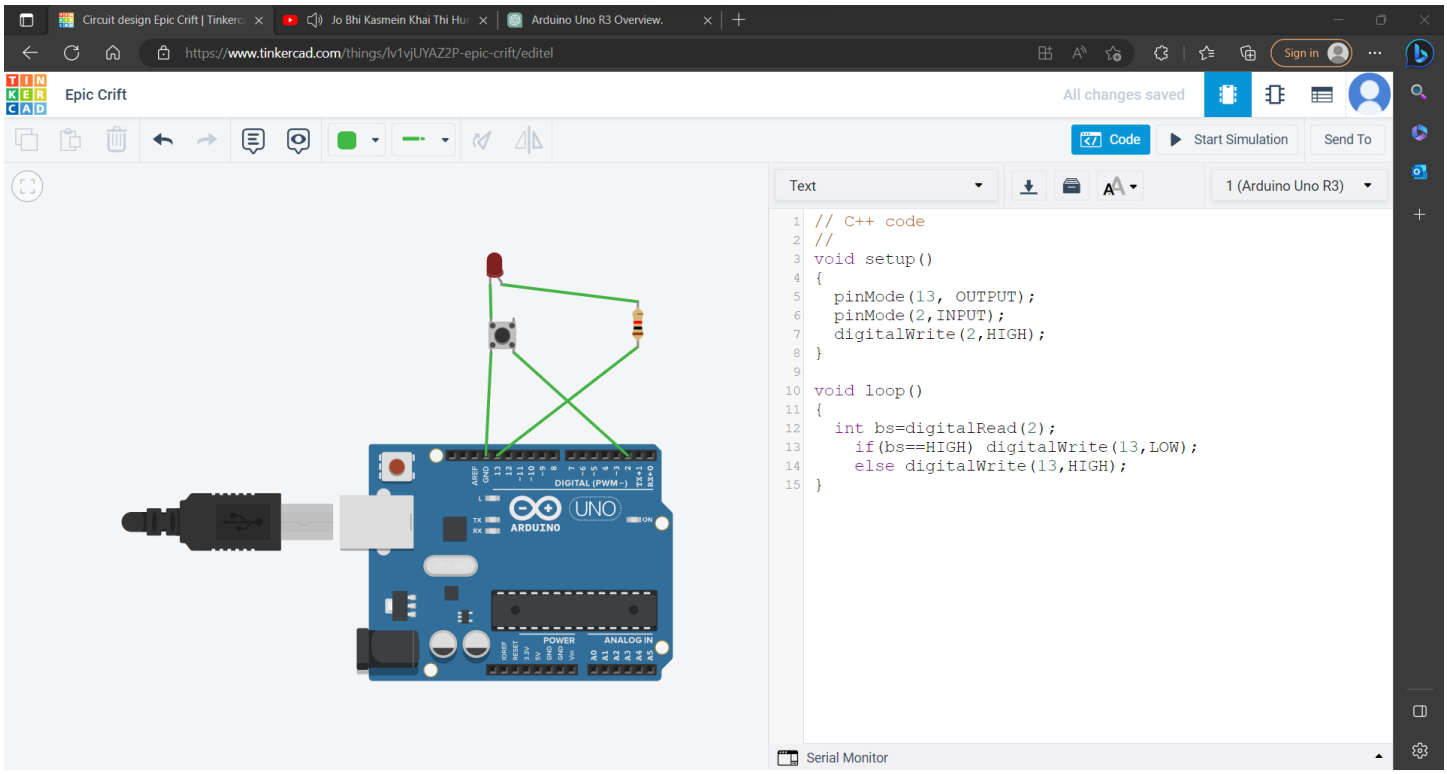
5. **Pre-requisites:**

   To perform this experiment, you will need the following materials:

   a. Arduino Uno board
   b. LED (any color)
   c. Resistor (220 ohm or as per the LED's forward voltage and desired current)
   d. Jumper wires

   Additionally, you will need access to TinkerCAD, an online simulation tool for creating and simulating electronic circuits.

6. Code And Simulation



7. Results:

The experiment involved interfacing an LED with an Arduino and writing a program to turn on the LED for 1 second after every 2 seconds using TinkerCAD.

Upon successful completion of the experiment, the LED should blink ON for 1 second and then OFF for 1 second, continuously. The LED should be connected to the digital pin 13 of the Arduino board through a resistor. The program used for this experiment was written using the Arduino programming language, and it used the delay function to control the ON and OFF periods of the LED.

The simulation in TinkerCAD was used to verify the circuit and the program's functionality before deploying the same on a physical Arduino board. The simulation should demonstrate that the LED turns on and off for the specified periods, indicating that the program is running successfully.

The results of the experiment were successful, and the LED turned ON and OFF for the specified periods as programmed. Therefore, it can be concluded that the experiment was successful in interfacing an LED with the Arduino and writing a program to control it.