Project 8: Interfacing neopixel strip with Arduino

The components used in this project are:

a) Arduino UNO board:

Arduino is an open-source programmable microcontroller that can be programmed to sense and control objects in the physical world. By responding to sensors and inputs the Arduino board can interact with a wide variety of outputs such as LED's, motors, LCDs etc.

b) Jumper wires:

Jumper wires are a group of electrical wires, with a connector at each end, which is used to interconnect the components of a prototype circuit.

c) Neopixel strip:

It is a strip of RGB LEDs with a built-in IC that makes it programmable. The Neopixel LED consists of 3 pins:

- **Ground:** This pin is connected to the ground of the circuit.
- **Data(DIN):** This is the Data in the pin which is provided with the PWM signal.
- **5V:** This powers the LED with 5V

Description :

Circuit connection involves the following steps:

- The data pin of the Neopixel strip is connected to digital pin 6 of the Arduino board.
- The power pin of the Neopixel strip is connected to the 5v pin of the Arduino board.
- The ground pin of the Neopixel strip is connected to the ground pin of the Arduino board.

Working:

- The circuit is connected and simulated on Tinkercad. The Neopixel strip gives RGB light as output with a delay of 25ms in the direction of the arrows present on the strip.
- The red light glows from in the direction of arrows on the Neopixel with a difference of 25ms.
- The red light switches off in the direction of arrows on the Neopixel with a difference of 25ms.
- The green light glows from in the direction of arrows on the Neopixel with a difference of 25ms.
- The green light switches off in the direction of arrows on the Neopixel with a difference of 25ms.
- The blue light glows from in the direction of arrows on the Neopixel with a difference of 25ms.
- The blue light switches off in the direction of arrows on the Neopixel with a difference of 25ms.