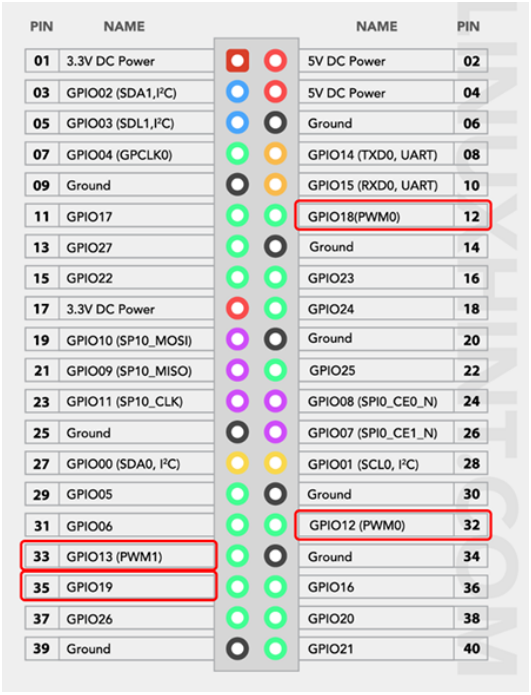
Edge Computing Laboratory

Lab Assignment 1

Name: Viresh Kamlapure
Class: TY AIEC
Enrollment No: MITU23BTCSD082
Roll No: D2233082

Title: "Hello World" to Raspberry Pi

Theory:
GPIO (General Purpose Input/Output) pins on the Raspberry Pi are used for interfacing with other electronic components. BCM numbering refers to the pin numbers in the Broadcom SOC channel, which is a more consistent way to refer to the GPIO pins across different versions of the Raspberry Pi.



Python Code:
A simple Python script to control the LED by turning it on and off will be provided, demonstrating the use of GPIO library and BCM pin numbering.

```
import RPi.GPIO as GPIO

import time

# Set up GPIO using BCM numbering

GPIO.setmode(GPIO.BCM)
```

```
GPIO.setwarnings(False)  # Disable warnings

# Define the LED pin (BCM numbering)
LED_PIN = 18

GPIO.setup(LED_PIN, GPIO.OUT)

try:
    print("Controlling LED (Press CTRL+C to exit)")
    while True:
        # Turn LED on
        GPIO.output(LED_PIN, GPIO.HIGH)
        print("LED ON")
        time.sleep(1)

        # Turn LED off
        GPIO.output(LED_PIN, GPIO.LOW)
        print("LED OFF")
        time.sleep(1)

except KeyboardInterrupt:
    print("\nProgram stopped by user")
finally:
    GPIO.cleanup()
```

Output:

```
Controlling LED (Press CTRL+C to exit)
LED ON
LED OFF
LED ON
LED OFF
LED ON
LED OFF
...
```

Conclusion:

A summary of the key learning points from the manual and encouragement for students to explore further applications and configurations of the Raspberry Pi 4.