Edge Computing Laboratory

Lab Assignment 1

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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,
                 print("LED ON")
GPIO.HIGH)
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.