Tutorial 1: Interacting with the LCD on Your Badge

The LCD display on your badge can be used to show text and other graphical elements. In this tutorial, we will display the text **"Im nobody"** on the screen.

Step 1: Import Required Modules

To interact with the LCD, we need to import the required modules:

```
import board
import displayio
import terminalio
from adafruit_display_text.label import Label
from badge.screens import LCD
```

Step 2: Initialize the Display

We create a `displayio.Group()` and assign it to the LCD's root group:

```
splash = displayio.Group()
LCD.root_group = splash
```

Step 3: Create a Text Label

We create a text label using `Label()` and specify:

- The font (`terminalio.FONT`)
- The text (`"Im nobody"`)
- The color (`0xFFFFFF` for white)
- The position (`x=20, y=50`)

```
title = Label(terminalio.FONT, text="Im nobody", color=0xFFFFFF, x=20, y=50)

splash.append(title)  # Add the label to the display
```

Step 4: Display the Text

Once the text label is added to `splash`, it will automatically appear on the screen.

```
import board
import displayio
import terminalio
from adafruit_display_text.label import Label
from badge.screens import LCD

# Initialize display
splash = displayio.Group()
LCD.root_group = splash

# Create text label
title = Label(terminalio.FONT, text="Im nobody",
color=0xFFFFFF, x=20, y=50)
splash.append(title)
```

Tutorial 2: Blinking LEDs in Sequence on Your Badge

This tutorial demonstrates how to blink four LEDs in sequence on your badge.

Step 1: Import Required Modules

First, import the necessary modules:

```
import board
import time
from digitalio import DigitalInOut, Direction
from badge.neopixels import NP  # For controlling NeoPixels
```

Step 2: Define LED Pins

Specify the GPIO pins connected to your LEDs:

```
led_pins = [board.TX, board.RX, board.SCL, board.SDA]  #Replace with actual pins
leds = []
```

Step 3: Initialize LEDs

Loop through the list of LED pins and configure each as an output:

```
for pin in led_pins:
    led = DigitalInOut(pin)
    led.direction = Direction.OUTPUT
    leds.append(led)
```

Step 4: Create the Blinking Function

Each LED will turn on and off sequentially with a short delay:

```
def blink_leds():
    while True:
        for i, led in enumerate(leds):
            led.value = True  # Turn LED on
            NP[i] = (0, 255, 0)  # Set NeoPixel to green
            NP.show()
            time.sleep(0.5)

            led.value = False  # Turn LED off
            NP[i] = (0, 0, 0)  # Turn off NeoPixel
            NP.show()
            time.sleep(0.5)
```

Step 5: Run the Blinking Function

Once the function is defined, call it to start blinking:

```
blink_leds()
```

Complete Code

```
import board
import time
from digitalio import DigitalInOut, Direction
from badge.neopixels import NP

# Define LED pins
led_pins = [board.TX, board.RX, board.SCL, board.SDA]  # Replace with actual
pins
leds = []

# Initialize LEDs
for pin in led_pins:
    led = DigitalInOut(pin)
    led.direction = Direction.OUTPUT
    leds.append(led)

# Function to blink LEDs in sequence
def blink_leds():
    while True:
        for i, led in enumerate(leds):
            led.value = True
            NP[i] = (0, 255, 0)  # Green color
            NP.show()
            time.sleep(0.5)

            led.value = False
            NP[i] = (0, 0, 0)  # Turn off
            NP.show()
            time.sleep(0.5)

# Run LED blinking
blink_leds()
```