Python Starter Kit Project List:

[PythonStarterKit/ at main · inventrdotio/PythonStarterKit]

1. Traffic Light Simulator

Components Needed: 3 LEDs (Red, Yellow, Green), resistors, wires
Objective: Use the Raspberry Pi Pico to cycle through the red, yellow, and green LEDs to simulate a traffic light.

2. Morse Code Machine

Components Needed: 1 LED, 1 button, resistors, wires
Objective: Use the button to input Morse code (short press for dot, long press for dash) and let the LED blink the corresponding Morse code.

3. Night Lights

Components Needed: 1 LED, photoresistor, resistors, wires
Objective: Use a photoresistor to detect the ambient light level and turn on an LED when it gets dark.

4. Reaction Time Tester

Components Needed: 1 LED, 1 button, resistors, wires
Objective: When the LED lights up, the user has to press the button as quickly as possible. The program measures the reaction time.

5. Simon Says Memory Game

Components Needed: Multiple LEDs, multiple buttons, resistors, wires
Objective: Create a memory game where a sequence of LEDs light up and the user has to replicate the sequence using buttons.

6. Binary LED Counter

Components Needed: 8 LEDs, 1 button, resistors, wires
Objective: Use 8 LEDs to display a binary counter that increments each time a button is pressed.

7. LED Brightness Control

Components Needed: 1 LED, 1 button (or two for up/down), resistors, wires
Objective: Use a button to control the brightness level of an LED (via PWM).

8. Temperature Reader

Components Needed: 1 LED (or more for multiple indicators), Raspberry Pi Pico's built-in temperature sensor, resistors, wires
Objective: Use the Raspberry Pi Pico's built-in temperature sensor to indicate whether the temperature is above/below a certain level via an LED.

9. Wi-Fi Temperature Reader

Components Needed: 1 LED (or more for multiple indicators), Raspberry Pi Pico's built-in temperature sensor, resistors, wires
Objective: Use the Raspberry Pi Pico's built-in temperature sensor to indicate whether the temperature is above/below a certain level via an LED.