**Python Planning**

**Rev. 0 – 4/5/2024 -- Created**

**MicroPython Starter Course -Ordered Kit**

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Learn Python programming with the new Raspberry Pi Pico W!

From talking in Morse Code to making an LED blink from the other side of the earth, our kit includes the following to get you started with programming in MicroPython in no time:

**Components:**  
1× Official Raspberry Pi Pico W (Yes, the new Pico with Wi-Fi and Bluetooth!)  
20× Male to Male Dupont cable  
1× 400 hole Breadboard  
15× LED lights (colors vary)  
10× Resistor 220ohm  
10× Resistor 1K  
10× Resistor 10K  
10× Resistor 100K  
2× Photoresistor 5516  
6× Buttons (colors vary)  
1× 9V Battery Connector  
  
**Some of the projects you will be completing:**

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.