CamJam EduKit Worksheet Four

Project Interact with the user and input your choice.

Description In this project, you will control the red, yellow, or green LEDs depending on your choice.

Equipment Required

The circuit built in CamJam EduKit Worksheet Two.

Code

You are going to use the same circuit again, but this time you are going to control the LEDs with user input. This worksheet will introduce user input as well as using variables to store information that will be used in later code.

Explanations have been placed within the code. These are called 'comments' and in Python they are the text following the '#' symbol. Nothing after the # will be run, and can be left out if you want, although best practice is to use comments to remind you what you intended your code to do.

Create a new file in IDLE3 and type in the following:

```
# CamJam Edukit 1 - Basics
# Worksheet 4 - User Input

# Import Libraries
import os                # Allows you to interact with the operating system
import time              # A collection of time related commands
from gpiozero import LED # The LED functions from GPIO Zero

GPIO.setmode(GPIO.BCM)  # Set the GPIO pin naming mode
GPIO.setwarnings(False) # Supress warnings

# Set up variables to store the pin numbers
LEDRed = 18
LEDYellow = 23
LEDGreen = 24

# Set the LED pins to output
GPIO.setup(LEDRed, GPIO.OUT)
GPIO.setup(LEDYellow, GPIO.OUT)
GPIO.setup(LEDGreen, GPIO.OUT)

os.system('clear') # Clears the terminal window

# Ask the user which colour LED to blink
print("Which LED would you like to blink?")
print("1: Red?")
print("2: Yellow?")
print("3: Green?")
led_choice = input("Choose your option: ")
```

```
# Ensure that the led_choice variable is a whole number (integer)
led_choice = int(led_choice)

# Ask the user how many times they want the LED to blink
count = input("How many times would you like it to blink?")
# Ensure that the count variable is a whole number (integer)
count = int(count)

# Set the variable 'LEDChoice' depending on the LED choice
if led_choice == 1:
    print("You picked the Red LED")
    LEDChoice = LEDRed
elif led_choice == 2:
    print("You picked the Yellow LED")
    LEDChoice = LEDYellow
elif led_choice == 3:
    print("You picked the Green LED")
    LEDChoice = LEDGreen

# If we have chosen a valid choice, flash the LED
if LEDChoice > 0:
    # While the count variable is greater than zero
    while count > 0:
        GPIO.output(LEDChoice, GPIO.HIGH) # Turn the chosen LED on
        time.sleep(1)                     # Sleep for 1 second
        GPIO.output(LEDChoice, GPIO.LOW)  # Turn the chosen LED off
        time.sleep(2)                     # Sleep for 2 seconds
        count = count - 1                 # Decrease the count by one

GPIO.cleanup()
```

Once complete save the file as `4-user-input.py` in the EduKit directory.

Running the Code

Run the code by selecting the Run Module menu option, under the Run menu item, or you can just press the F5 key.

The screen will clear, and you will be prompted for which LED you want to turn on or off. Enter 1, 2, or 3. You will then be prompted for how many times you want the LEDs to flash. The LED you chose will then flash the number of times you requested.

Note

Do not disassemble this circuit, as it will be used in the following worksheets.