

CamJam EduKit Worksheet Four

Project Interact with the user and input your choice.

Description In this project, you will control the red, yellow, or the 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.

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

```
# Load Libraries
import os
import time
import RPi.GPIO as GPIO

GPIO.setmode(GPIO.BCM) # Set the GPIO pin naming mode
GPIO.setwarnings(False) # Suppress 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 screen

print("Which LED would you like to blink")
print("1: Red?")
print("2: Yellow?")
print("3: Green?")

# Prints prompts to the screen and waits for input from the user
led_choice = input("Choose your option: ")
count = input("How many times would you like it to blink?: ")

# Convert user input from string (text) to integer
led_choice = int(led_choice)
count = int(count)

# Set the LEDChoice variable depending on the LED choice
if led_choice == 1:
    print("You picked the Red LED")
```

```
LEDChoice = LEDRed
if led_choice == 2:
    print("You picked the Yellow LED")
    LEDChoice = LEDYellow
if 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 count > 0:
        GPIO.output(LEDChoice, GPIO.HIGH)
        time.sleep(1)
        GPIO.output(LEDChoice, GPIO.LOW)
        time.sleep(1)
        count = count - 1

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.