# MIT AI2 204

# IoT with MIT App Inventor

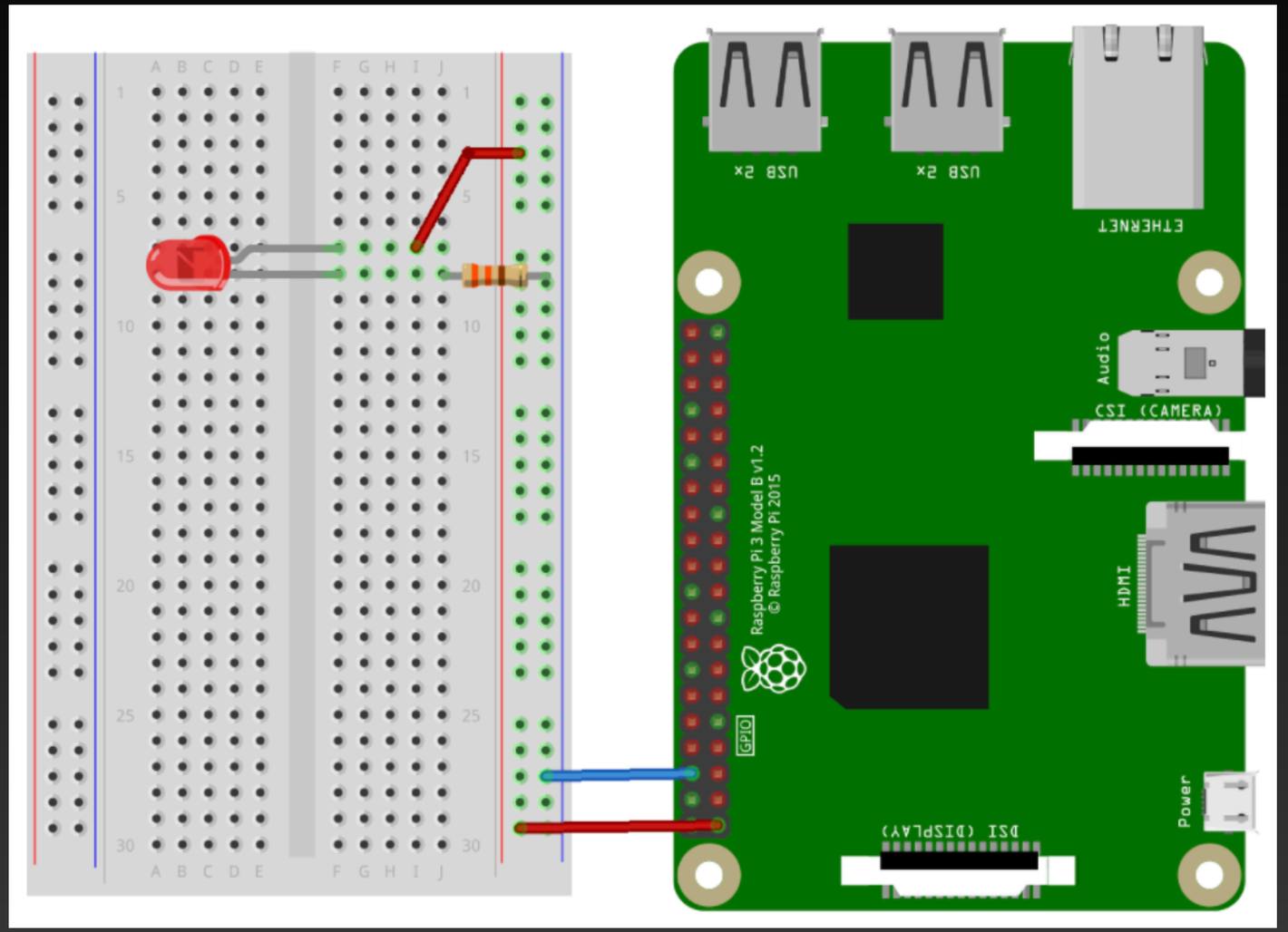
## Fundamental

X. Tang

# Test your circuit! An LED project

Switching an LED on and off

GPIO Zero is a new Python library which provides a simple interface to everyday GPIO components. It comes installed by default in Raspbian.

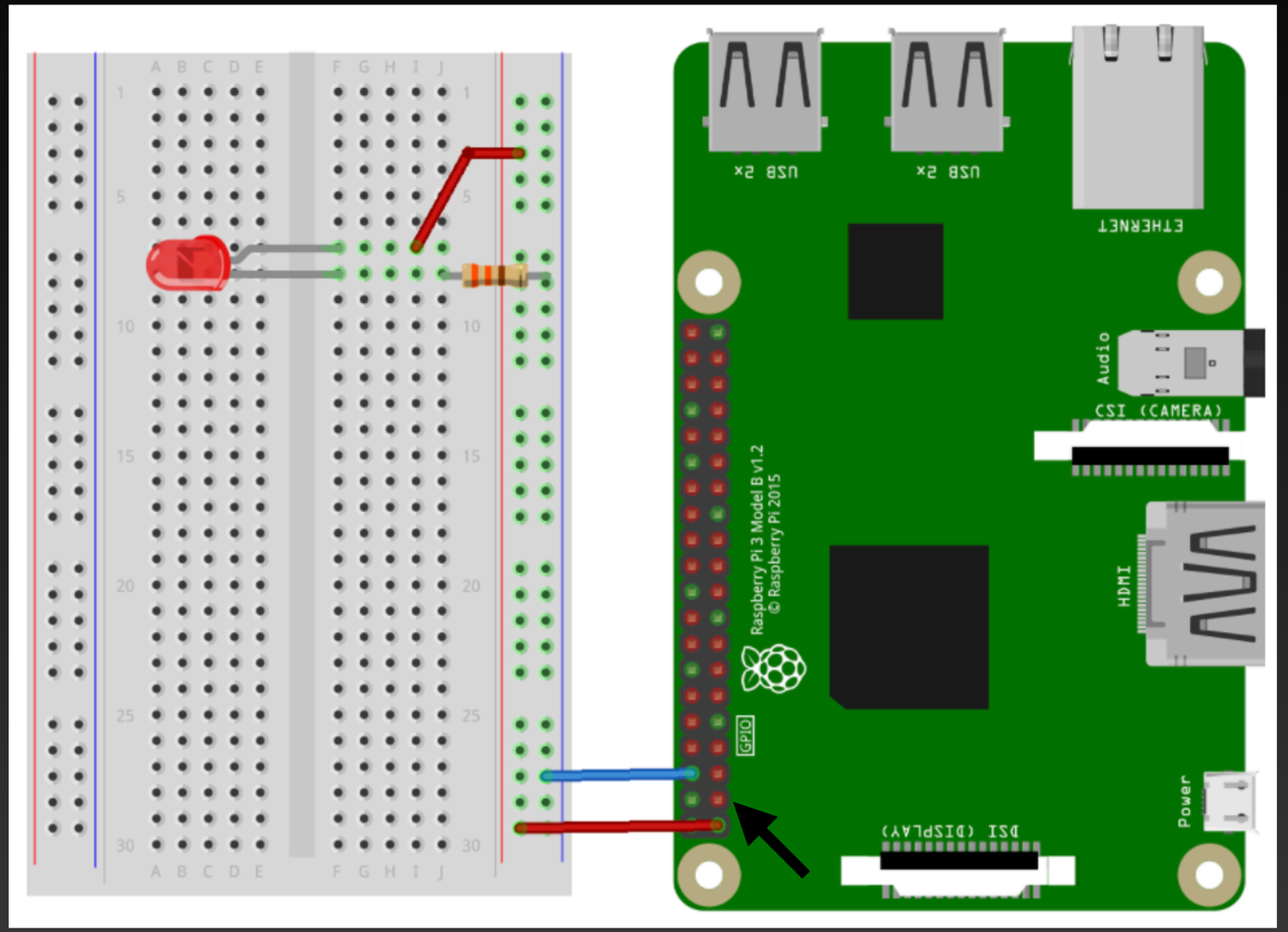


# Test your circuit! An LED project

Switching an LED on and off

GPIO Zero is a new Python library which provides a simple interface to everyday GPIO components. It comes installed by default in Raspbian.

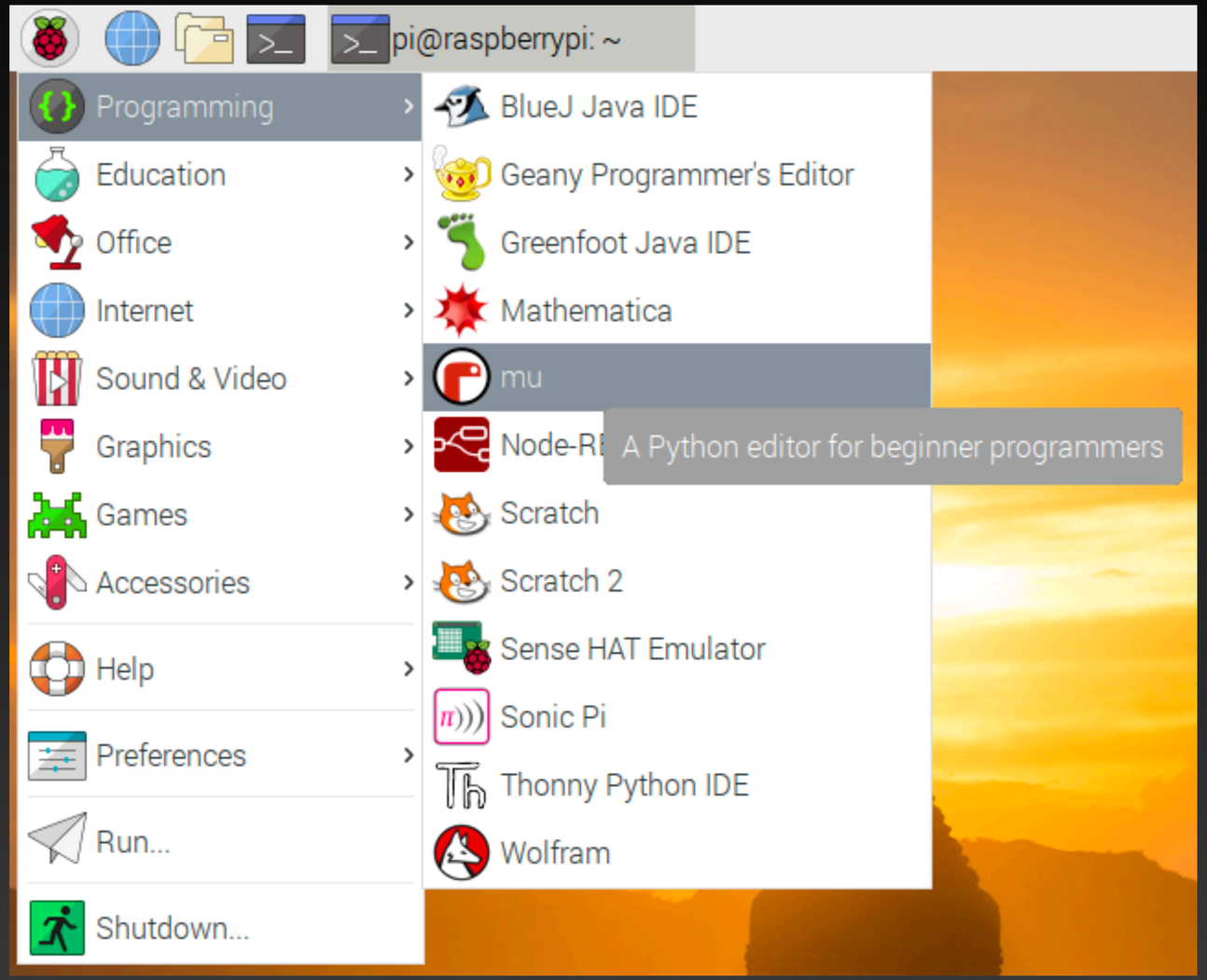
Switch your input to GPIO2



# Test your circuit! GPIO Zero library

How to open Mu

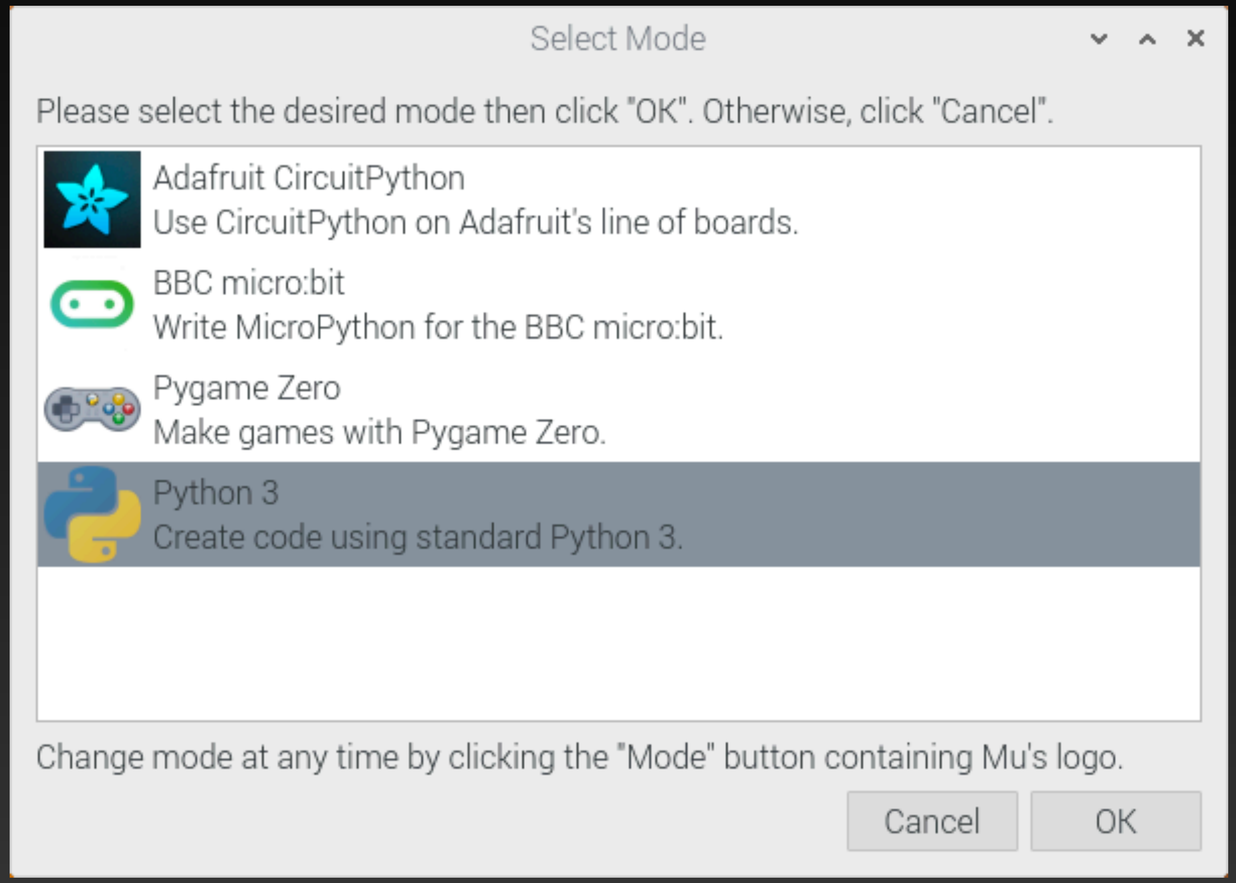
Go to the Programming menu and click on Mu.



# Test your circuit! GPIO Zero library

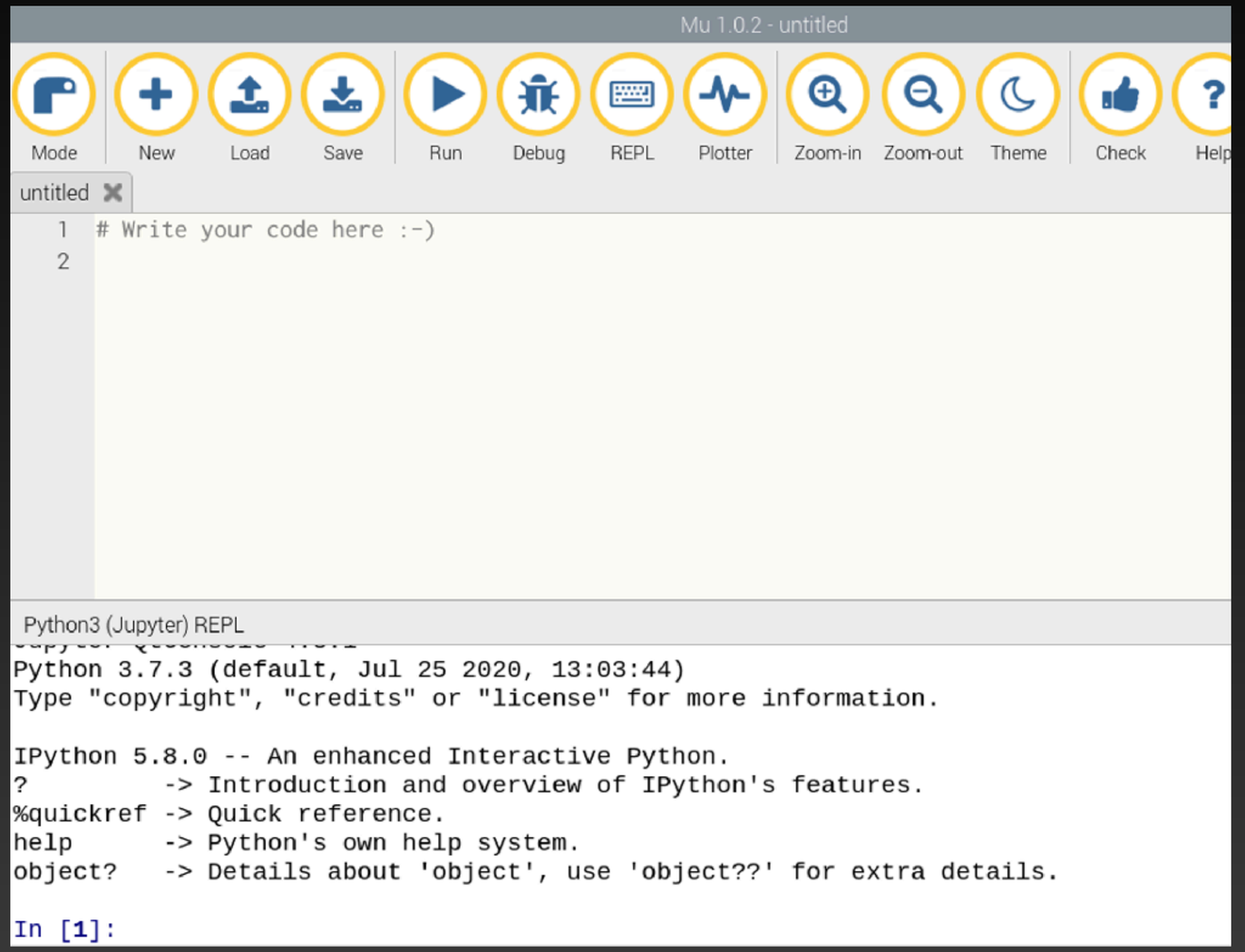
Then choose the mode in which you want to use Mu.

Choose Python 3 if you are creating a new Python script.



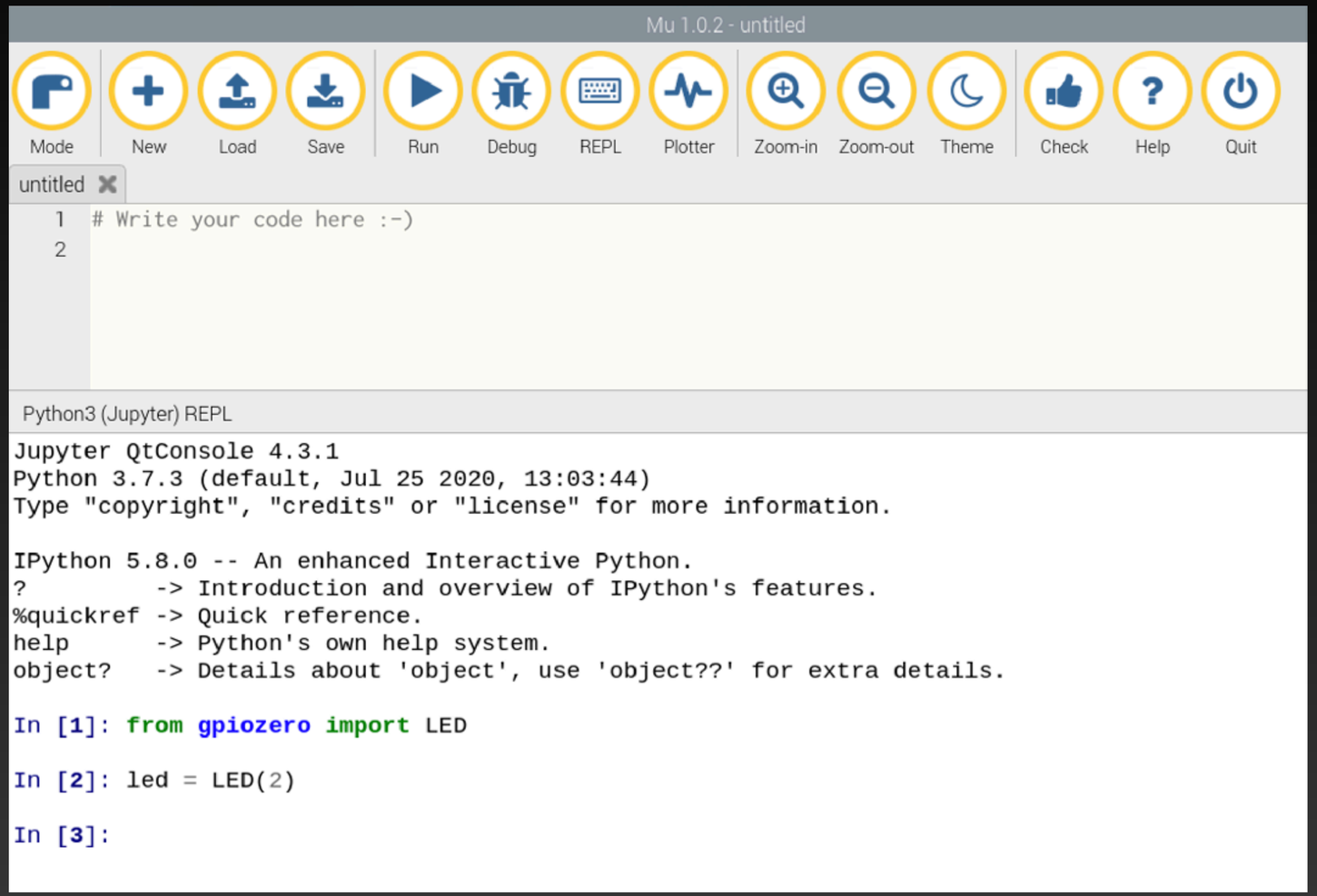
# Test your circuit! GPIO Zero library

You can switch an LED on and off by typing commands directly into the REPL. Click on the REPL button in the menu bar.



# Test your circuit! GPIO Zero library

First import the GPIO Zero library, and tell the Pi which GPIO pin you are using - in this case pin 2.



# Test your circuit! GPIO Zero library

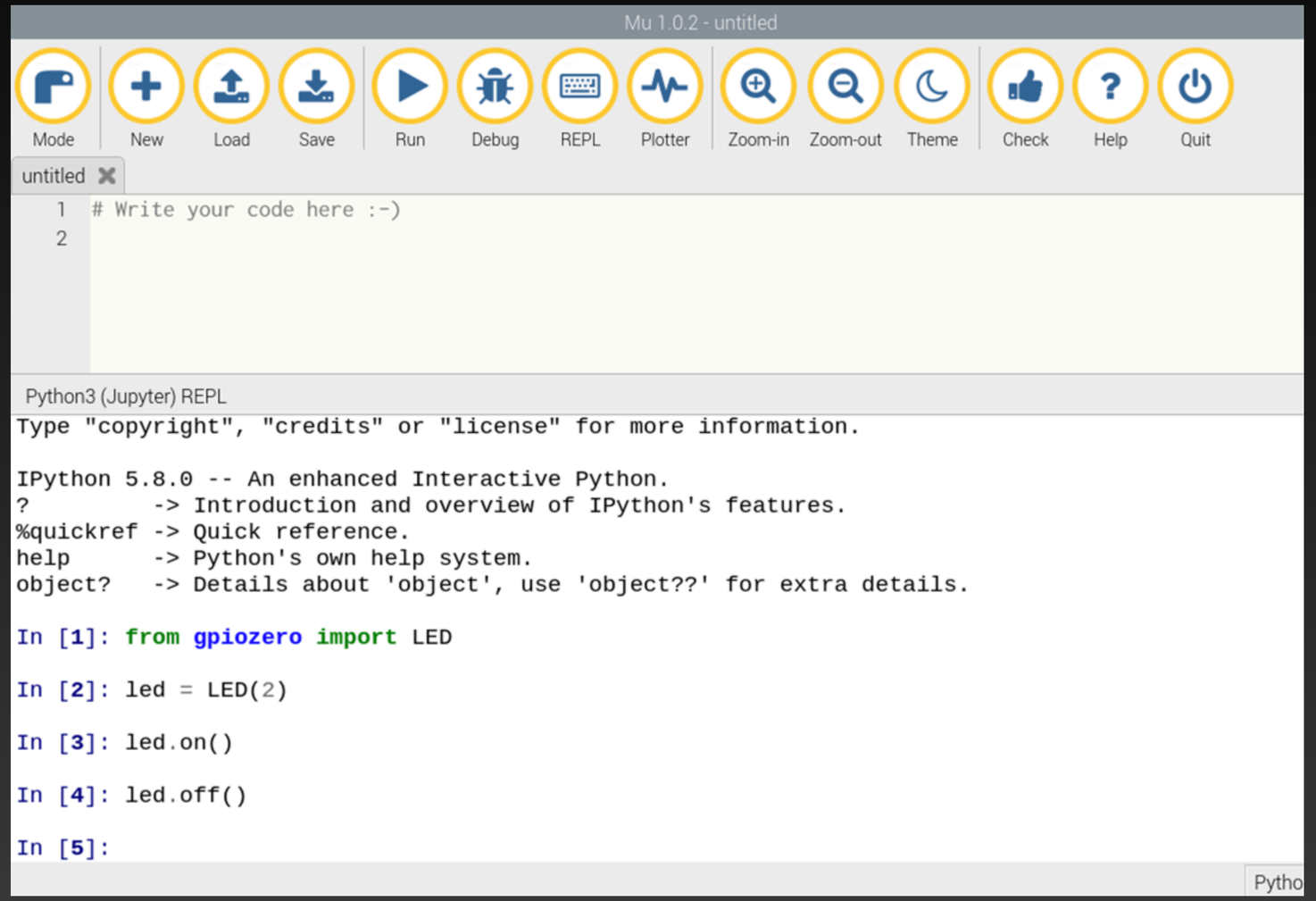
To make the LED switch on, type the following and press Enter:

```
led.on()
```

To make it switch off you can type:

```
led.off()
```

Your LED should switch on and then off again. But that's not all you can do.

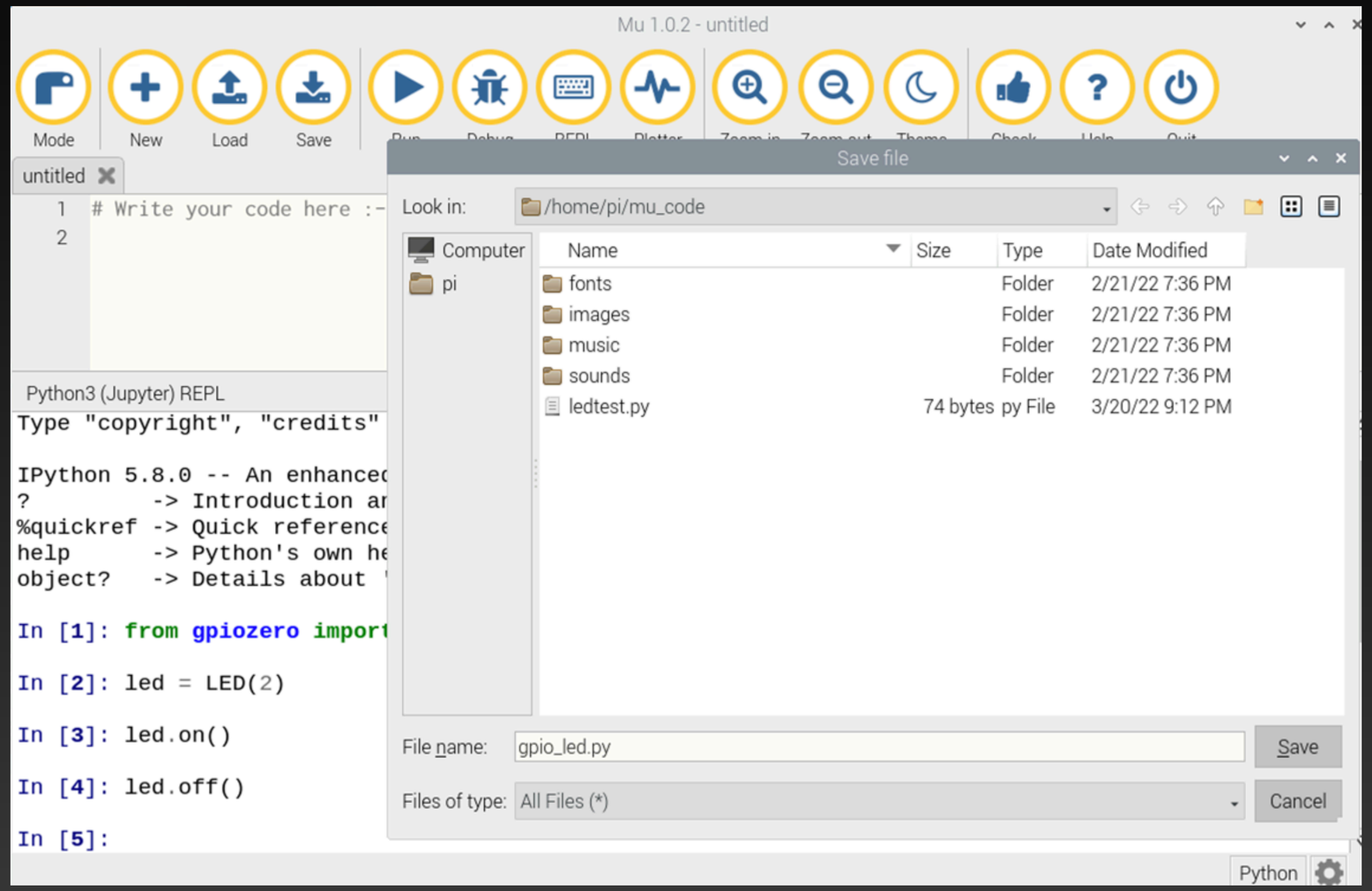


# Test your circuit! Flashing an LED

With the help of the time library and a little loop, you can make the LED flash.

Create a new file by clicking New.

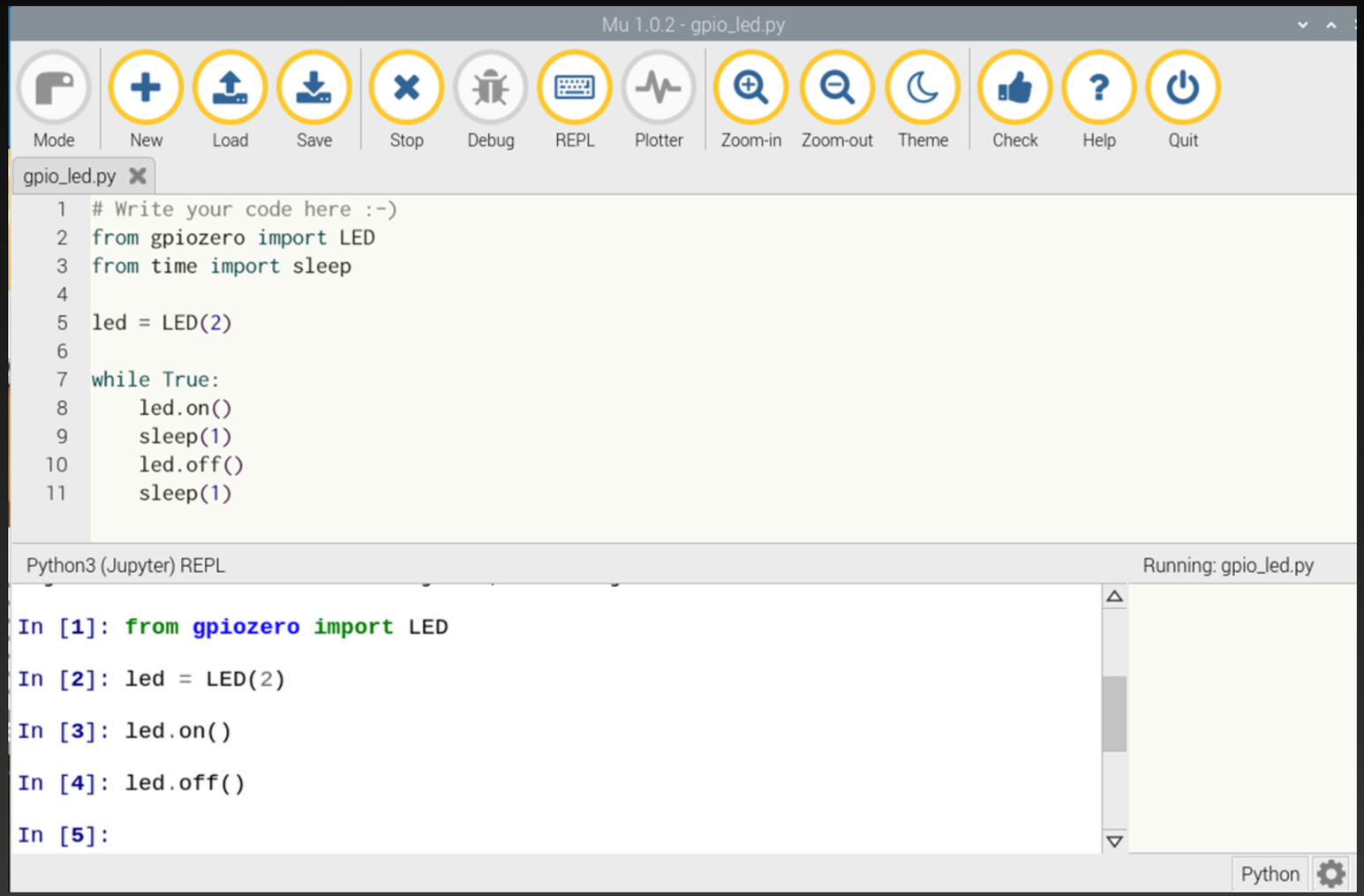
Save the new file by clicking Save. Save the file as gpio_led.py.



# Test your circuit! Flashing an LED

Enter the following code to get started:

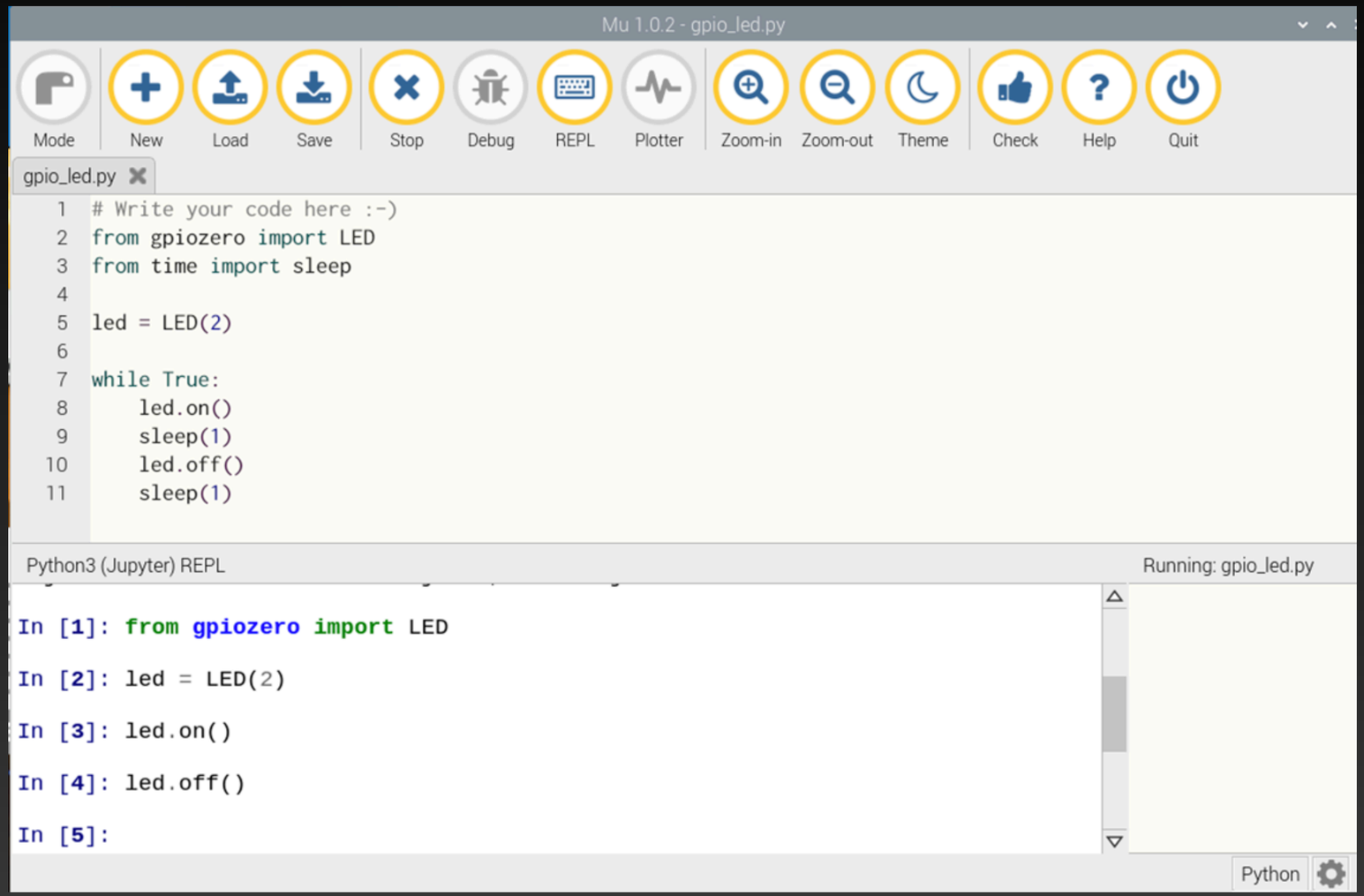
```
from gpiozero import LED
from time import sleep

led = LED(2)

while True:
    led.on()
    sleep(1)
    led.off()
    sleep(1)
```



# Test your circuit! Flashing an LED

Save the file and run the code with by clicking on Run.

The LED should be flashing on and off. To exit the program click Stop.



# Python Basics

- Comments, literal constants, numbers, quotes.
- Operators and Expressions
- Control Flows
- Functions
- Modules

https://automatetheboringstuff.com/2e/chapter1/

https://automatetheboringstuff.com/2e/chapter2/