

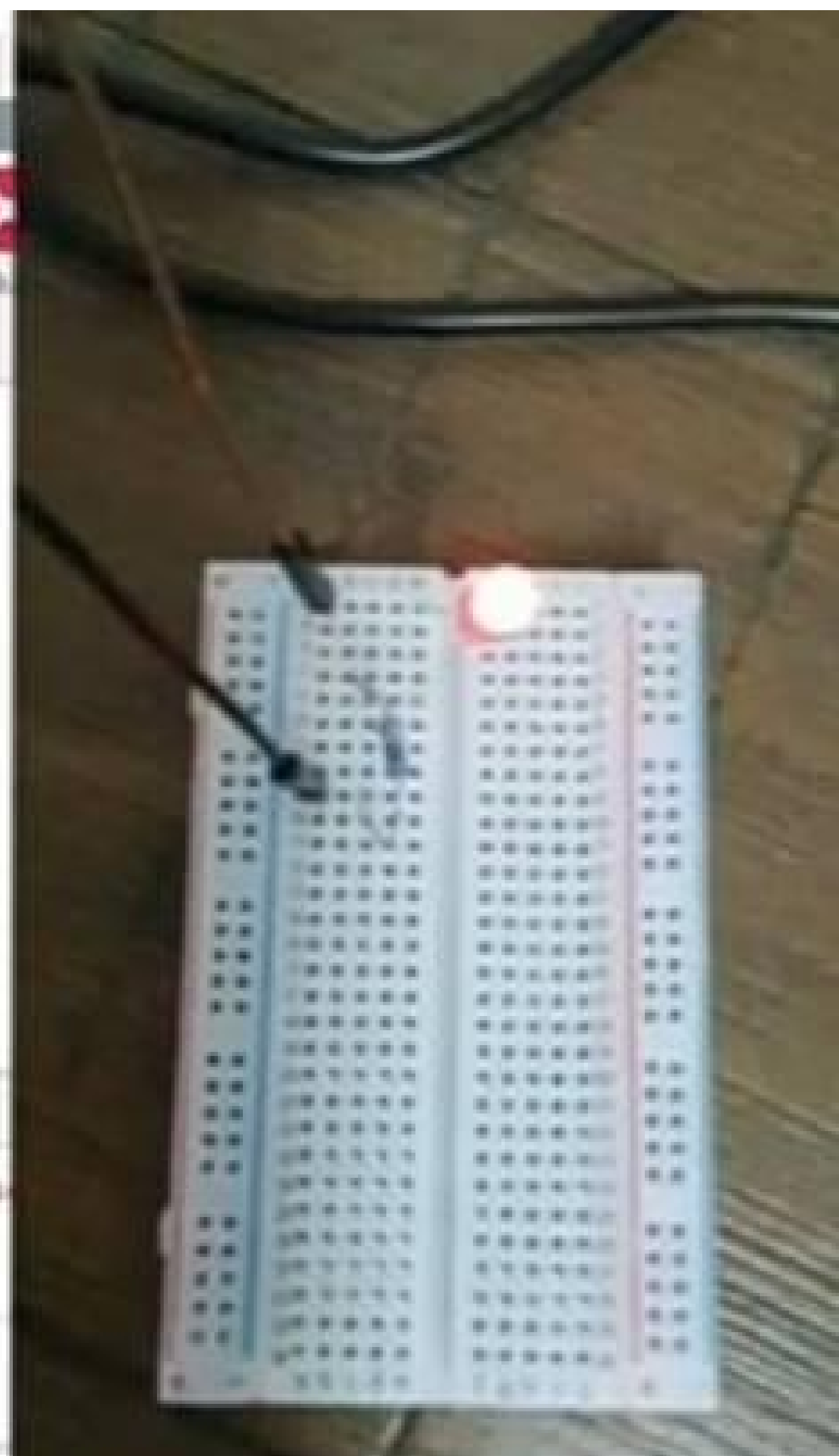
The image shows the Thonny IDE interface. The main editor window displays a Python script named `led1.py` with the following code:

```
1 import RPi.GPIO as GPIO
2 import time
3 GPIO.setmode(GPIO.BOARD)
4 GPIO.setup(11, GPIO.OUT)
5 GPIO.output(11, 1)
6 time.sleep(1)
7 GPIO.output(11, 0)
8 time.sleep(1)
9 GPIO.output(11, 1)
10 time.sleep(1)
11 GPIO.output(11, 0)
12 time.sleep(1)
13 GPIO.cleanup()
14
```

The terminal window at the bottom shows a runtime warning:

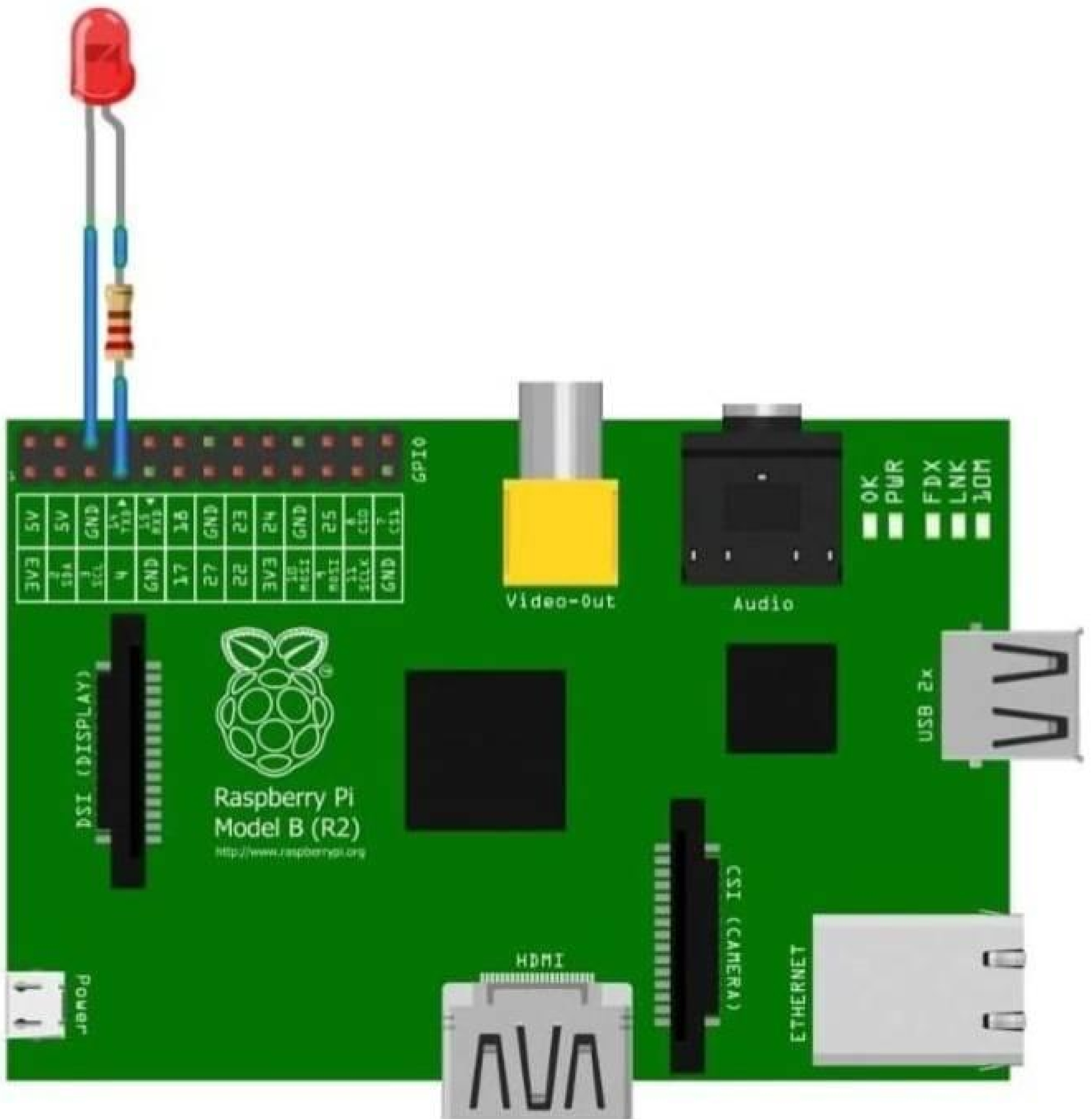
```
led1.py:4: RuntimeWarning: This channel is already in use, continuing anyway. Use GPIO.cleanup() before GPIO.setup().
GPIO.setup(11, GPIO.OUT)

Python 3.7.3 (/usr/bin/python3)
>>> Run led1.py
```



Circuit Diagram

- Connect the Led to 6 (ground) and 11 (gpio) with a 100Ω resistor in series



Connecting LED to Raspberry Pi

```
import time
```

```
import RPi. GPIO as GPIO    ## Important GPIO
```

```
GPIO. Setmode(GPIO.BOARD)    ## Use board p
```

```
GPIO. Setup(11, GPIO. OUT)    ## Setup GPIO
```

```
while True:
```

```
    GPIO. Output(11, True)    ## Turn on led
```

```
    time . sleep(1)           ## Wait for on
```

```
    GPIO. output(11,False)    ## Turn off led
```

```
    time . sleep(1)           ## Wait for on
```

```

import RPi. GPIO as IO      # calling header file for GPIO's of PI

import time                  # calling for time to provide delays in
program

IO. setmode (IO.BOARD) # programming the GPIO by BOARD pin number,
GPIO21 is called as

PIN40

IO. setup(40, IO. OUT)      # initialize digital pin40 as on output.

IO. Output(40, 1)           # turn the LED off (making the voltage
level HIGH)

time. sleep(1)              # sleep for a second

IO. cleanup (1)             # turn the LED off (making all the output
pins LOW)

time. sleep(1)              # sleep for a second

# loop is executed second time

IO. setmode (IO.BOARD)

IO. setup(40, IO. OUT)

IO. output(40, 1)

Time. sleep(1)

IO. cleanup ()

time . sleep(1)

# loop is executed third time

IO. setmode (IO.BOARD)

IO. setup (40, IO. OUT)

IO. output(40, 1)

time. sleep(1)

IO. cleanup()

time. sleep(1)

```