SHETH L.U.J. COLLEGE OF ARTS &
SIR M.V. COLLEGE OF SCIENCE & COMMERCE

Department of Computer Science

SR	Date	Topic	Sign
1	20/11/25	Practical No 1 Prepping the IoT Hardware set up Raspberry Pi/OS/Arduino Configure GPIO setting and test basic connectivity Demonstrate pin layout on onboard peripherals.	20/11/25
2.	27/11/25	Practical No 2 GPIO - LED light (with and without Button) . Blink led using python (Raspberry Pi) or (++Arduino) + Add a push button to toggle led On/off.	27/11/25

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Practical No 2

Aim:- GPIO - Light the led (with & without Button)

Blink led using python (Raspberry Pi) or (++ Arduino)
Add a push button to toggle LED ON/off

Steps

1. connect the GPIO22 (ie physical Pin 15) pin 25) pin of raspberry pi to one end of the resistor
2. connect another end of resistor to the positive end(Node) of LED
3. connect the negative end (cathode) of LED to ground of raspberry p
4. Then power on your raspberry pi

Components.

LED:- A light - emitting diode that glows when current flow through it

Resistor:- limits the current to protect led from burning.

carry electrical signals between the raspberry Pi and circuit

Breadboard :- A reusable board used to build & test circuit without soldering.

Method used :-

GPIO.setmode() :- Set the numbering mode for Raspberry Pi pins.

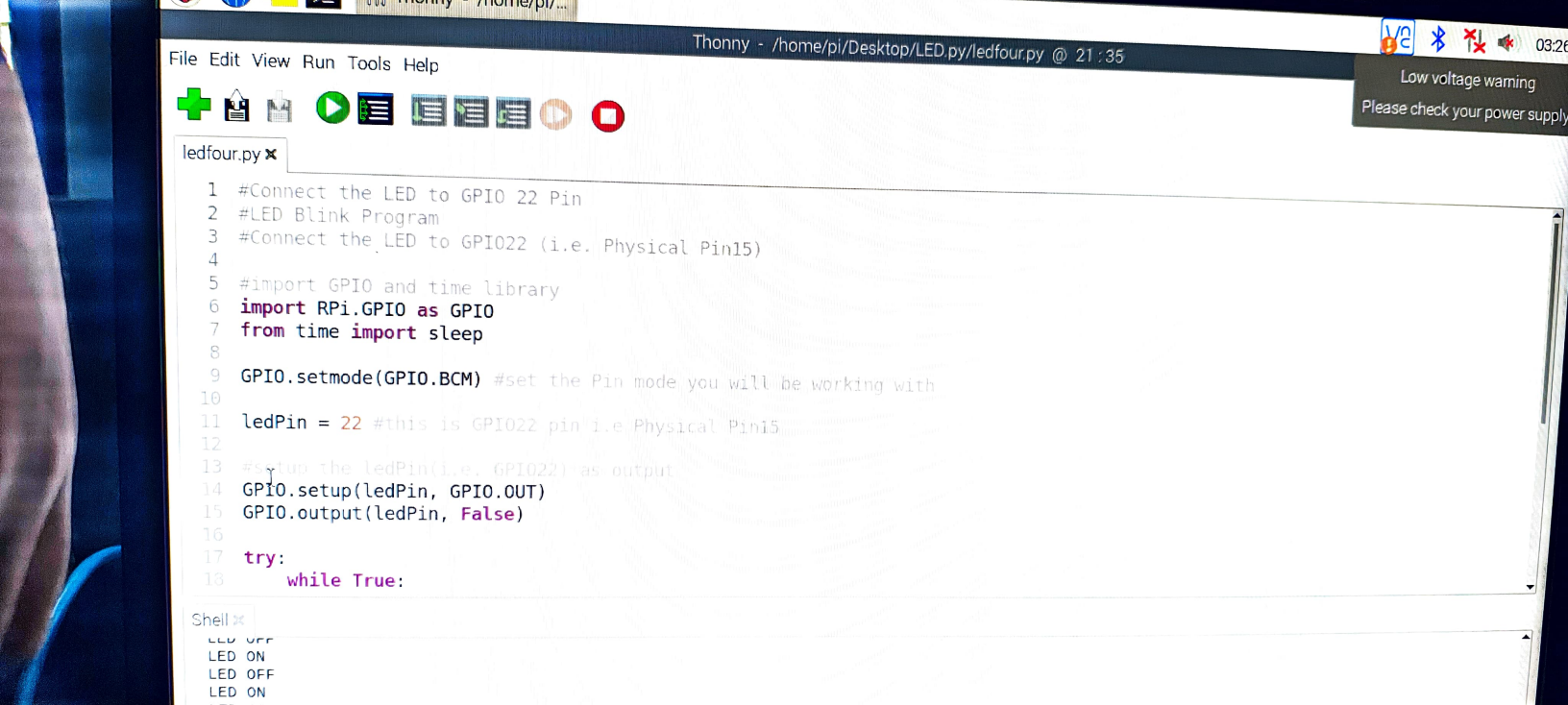
GPIO.setup() :- configures the LED Pin as an O

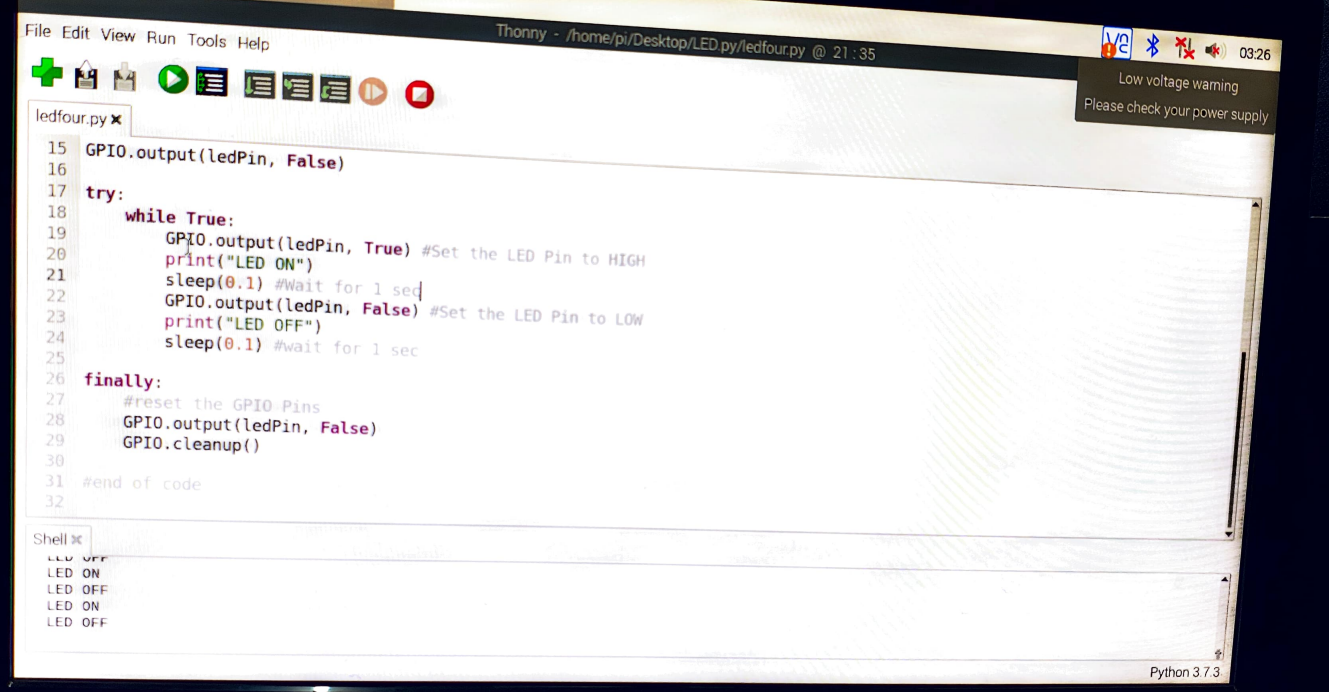
GPIO.output() :- Sends High or Low signals to turn the LED on and off

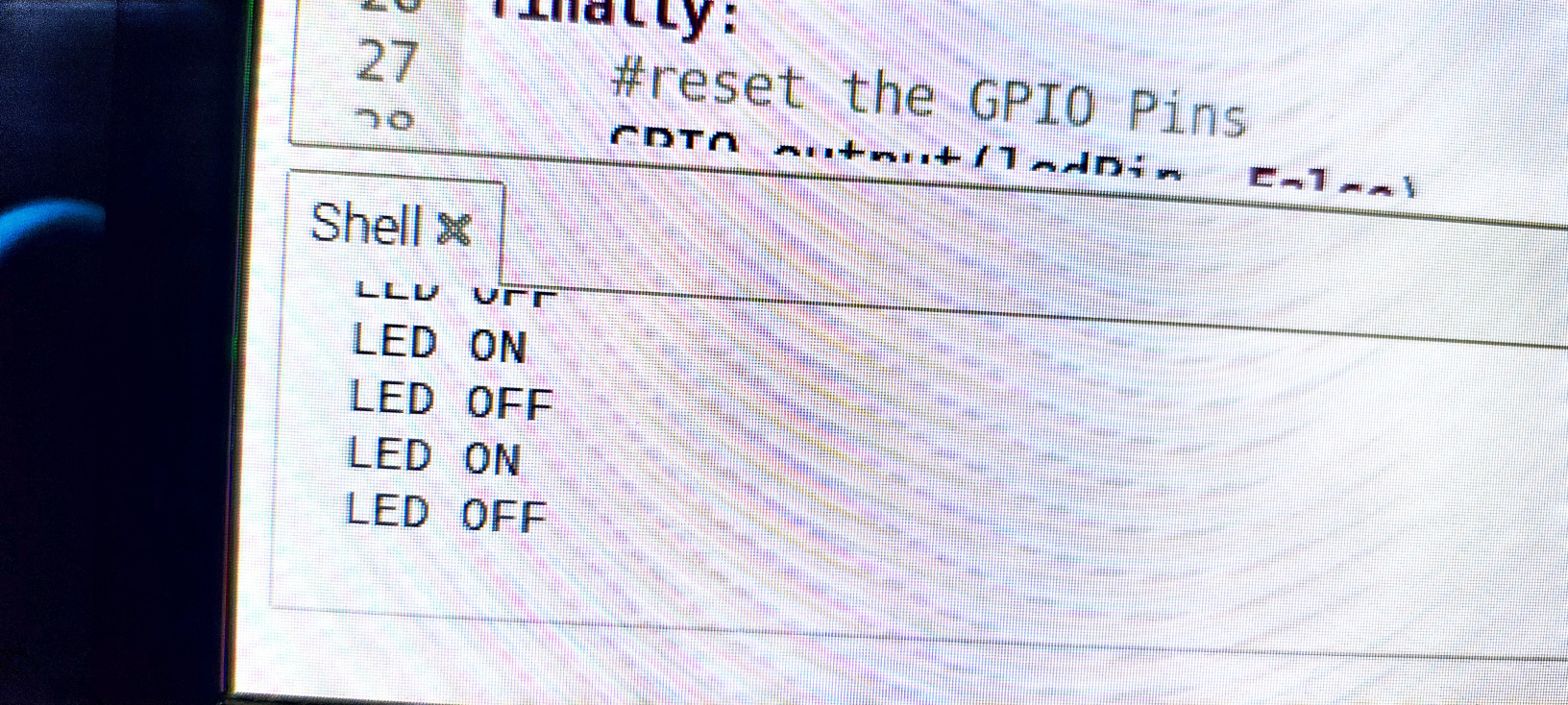
sleep() :- pauses the program for a specific t between LED Blinks

try-finally :- block - Ensure the GPIO pins reset properly even if the program stops.

27/11/25


Thonny - /home/pi/Desktop/LED.py/ledfour.py @ 21:35
File Edit View Run Tools Help
Low voltage warning
Please check your power supply
ledfour.py
#Connect the LED to GPIO 22 Pin
#LED Blink Program
#Connect the LED to GPIO22 (i.e. Physical Pin15)
#import GPIO and time library
import RPi.GPIO as GPIO
from time import sleep
GPIO.setmode(GPIO.BCM) #set the Pin mode you will be working with
ledPin = 22 #this is GPIO22 pin i.e Physical Pin15
#setup the ledPin(i.e. GPIO22) as output
GPIO.setup(ledPin, GPIO.OUT)
GPIO.output(ledPin, False)
try:
while True:
Shell
LED ON
LED OFF
LED ON


File Edit View Run Tools Help
Thonny - /home/pi/Desktop/LED.py/ledfour.py @ 21 : 35
03:26
Low voltage warning
Please check your power supply
ledfour.py
15 GPIO.output(ledPin, False)
16
17 try:
18 while True:
19 GPIO.output(ledPin, True) #Set the LED Pin to HIGH
20 print("LED ON")
21 sleep(0.1) #Wait for 1 sec
22 GPIO.output(ledPin, False) #Set the LED Pin to LOW
23 print("LED OFF")
24 sleep(0.1) #wait for 1 sec
25
26 finally:
27 #reset the GPIO Pins
28 GPIO.output(ledPin, False)
29 GPIO.cleanup()
30
31 #end of code
32
Shell
LED ON
LED OFF
LED ON
LED OFF
Python 3.7.3


finally:
#reset the GPIO Pins
Shell
LED ON
LED OFF
LED ON
LED OFF