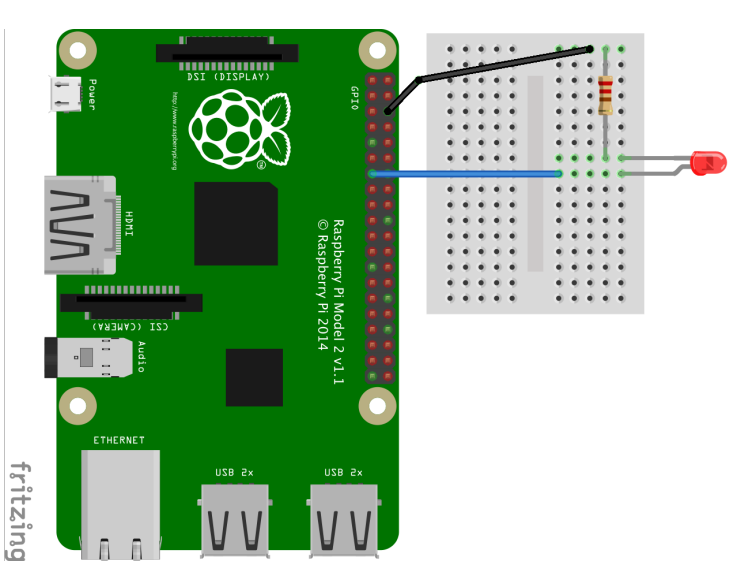
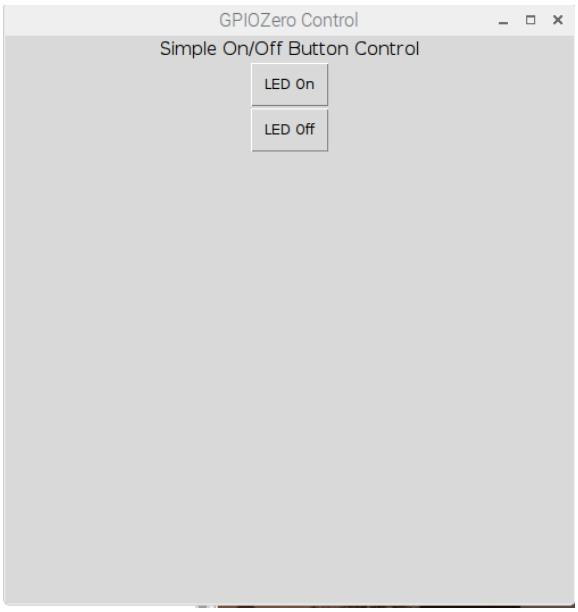
A SIMPLE GUI

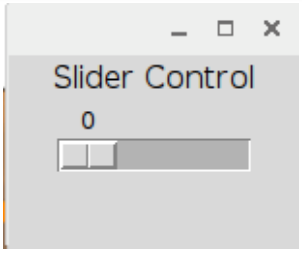




Let's use the guider library to make a simple GUI to control our LED circuit

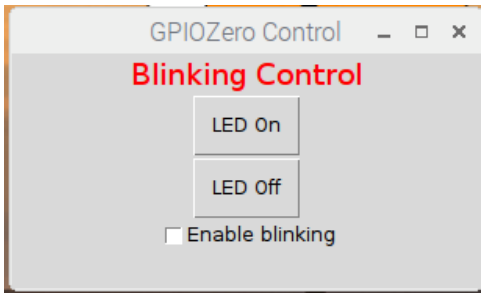
```
1  from gpiozero import PWMLED
2  from guizero import *
3
4  led = PWMLED(27) # Our LED is on pin 27
5
6  app = App("GPIOZero Control") # Create a window
7
8  # text label
9  text1 = Text(app, "Simple On/Off Button Control")
10 # on-screen button to turn on LED
11 button_on = PushButton(app, led.on, text="LED On")
12 # on-screen button to turn off LED
13 button_off = PushButton(app, led.off, text="LED Off")
14
15 app.display()
16
```

Now try a slider for LED brightness. This time we'll make the window smaller too.



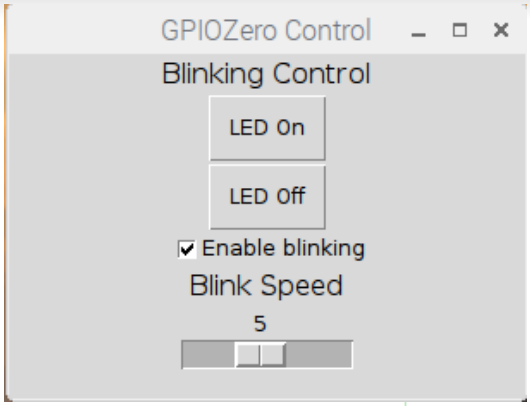

```
from gpiozero import PWMLED
from guizero import *

led = PWMLED(27) # Our LED is on pin 27

def brightness(value):
    led.value = float(value)/10.0

# Create a window 100 x 150 pixels
app = App("GPIOZero Control", height=100, width=150)

# text label
text1 = Text(app, "Slider Control")

# Slider to control LED brightness
slider = Slider(app, start=0, end=10, command=brightness)
app.display()

```

How about a checkbox and some coloured text?




```
from gpiozero import PWMLED
from guizero import *

led = PWMLED(27) # Our LED is on pin 27

blink_mode = False

def ledcontrol():
    global blink_mode
    if blink_mode:
        led.blink(on_time=0.5, off_time=0.5, background=True)
    else:
        led.on()

def set_mode():
    global blink_mode
    if blink_mode:
        blink_mode = False
    else:
        blink_mode = True

app = App("GPIOZero Control", height=150, width=300) # Create a window
# on-screen button to turn on LED
text1 = Text(app, "Blinking Control", color='red', size=14)
button_on = PushButton(app, ledcontrol, text="LED On")
# on-screen button to turn off LED
button_off = PushButton(app, led.off, text="LED Off")
# check-box to enable blinking of LED when switched on
checkbox = CheckBox(app, "Enable blinking", command=set_mode)


app.display()
```

Put it all together!




```
from gpiozero import PWMLED
from guizero import *
from time import sleep

led = PWMLED(27) # Our LED is on pin 27

# variables to keep track of what's going on:
blink_mode = False # is blink mode enabled?
led_active = False # is the led turned on (in any mode)?
blink_freq = 0.5 # frequency of blinking
# these will be set as global variables by functions that use them

def ledcontrol(): # turns the led on or starts it blinking
    global blink_mode
    global blink_freq
    global led_active
    led_active = True
    if blink_mode:
        led.blink(on_time=blink_freq, off_time=blink_freq, background=True)
    else:
        led.on()

def led_turn_off(): # turns led off and stops blinking
    global led_active
    led_active = False
    led.off()

def set_mode(): # sets whether blink mode is on
    # this function is run whenever the box is checked or un-checked
    global blink_mode
    if blink_mode:
        blink_mode = False
    else:
        blink_mode = True

def speed(speed): # set frequenecy of blinking
    # this function is run whenever the slider is moved
    global blink_freq
    global led_active
    blink_freq = 1/float(speed) #freq between 0.1 and 1 second
    print(blink_freq)
    if (blink_mode and led_active):
        led_turn_off()
        led_active = True
        led.blink(on_time=blink_freq, off_time=blink_freq, background=True)


app = App("GPIOZero Control", height=200, width=300) # Create a window
# on-screen button to turn on LED
text1 = Text(app, "Blinking Control") # text label
button_on = PushButton(app, ledcontrol, text="LED On")
# on-screen button to turn off LED
button_off = PushButton(app, led_turn_off, text="LED Off")
# check-box to enable blinking of LED when switched on
checkbox = CheckBox(app, "Enable blinking", command=set_mode)
text2 = Text(app, "Blink Speed") # text label
# Slider to control LED brightness
slider = Slider(app, start=1, end=10, command=speed)
app.display()
```

Challenge: Create a GUI to control the colour of an RGB LED!