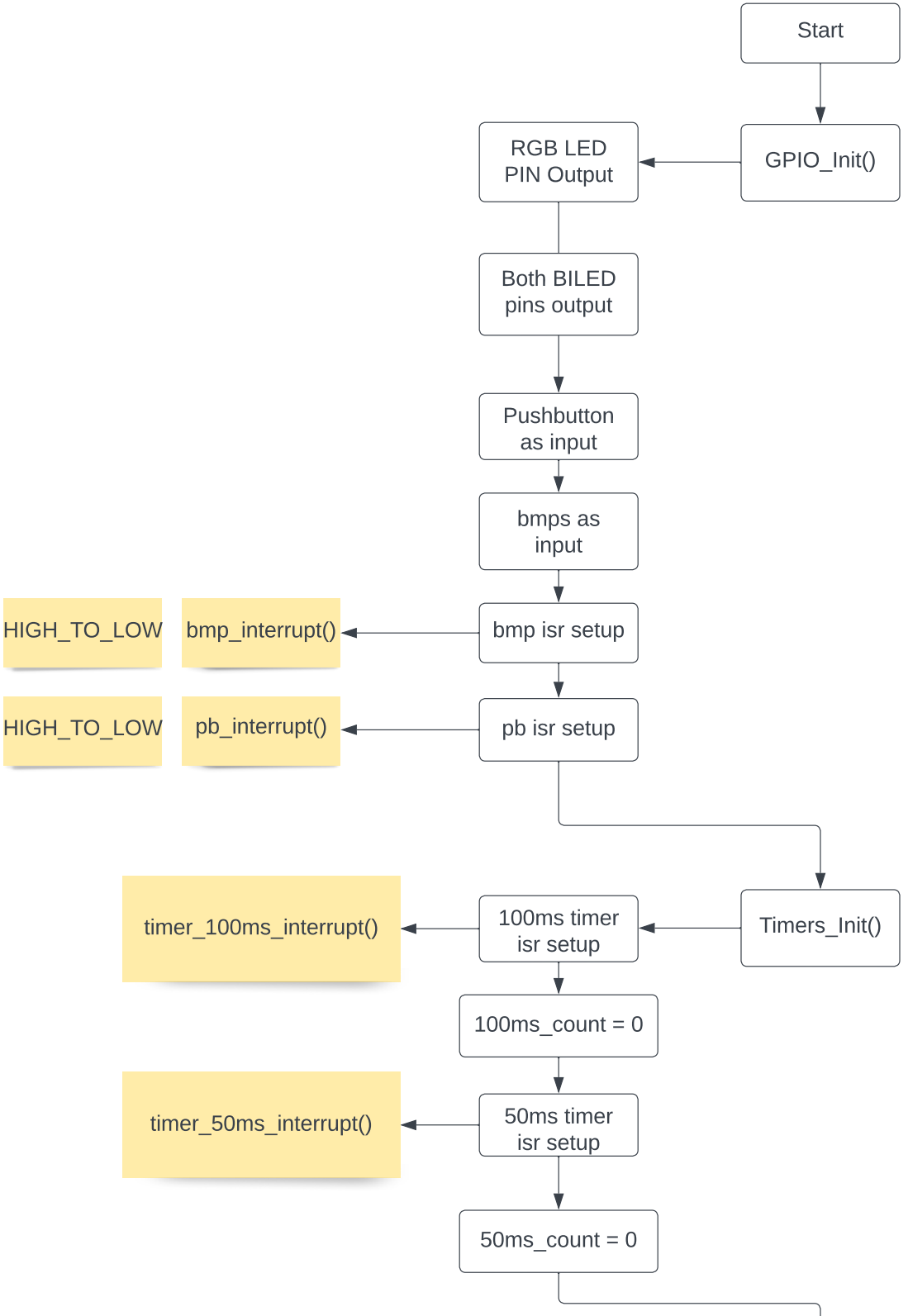

Start
GPIO_Init()
RGB LED
PIN Output
Both BILED
pins output
Pushbutton
as input
bmps as
input
bmp isr setup
bmp_interrupt()
HIGH_TO_LOW
pb isr setup
pb_interrupt()
HIGH_TO_LOW
Timers_Init()
100ms timer
isr setup
timer_100ms_interrupt()
100ms_count = 0
50ms timer
isr setup
timer_50ms_interrupt()
50ms_count = 0

RGB_LED_COLOR

RGB_LED_OFF = -1

ANY OTHER NUMBER IS ASSUMED TO BE RGB OFF

RGB_LED_RED = 0

RGB_LED_GREEN = 1

RGB_LED_BLUE = 2

RGB_LED_MAGENTA = 3

RGB_LED_CYAN = 4

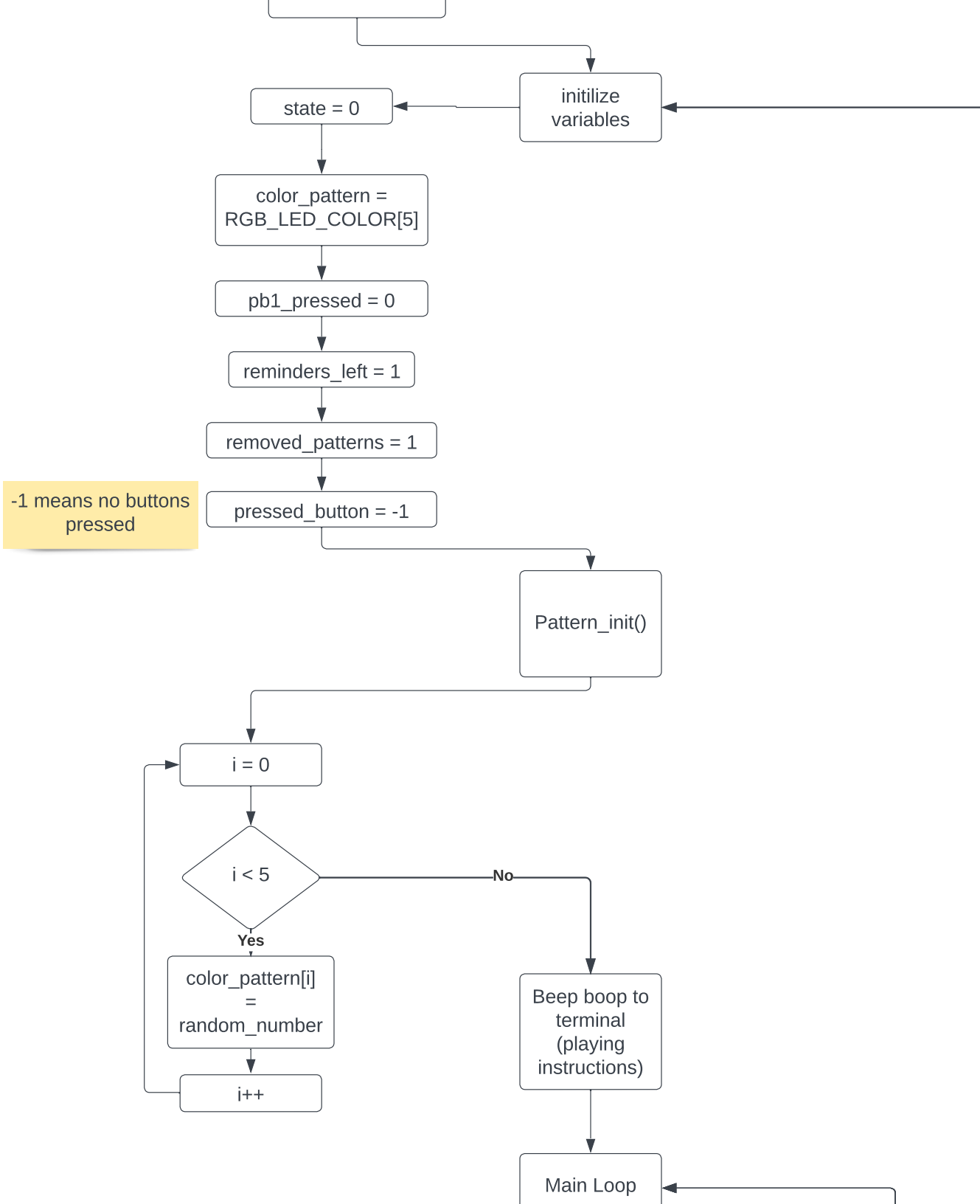
RGB_LED_YELLOW = 5

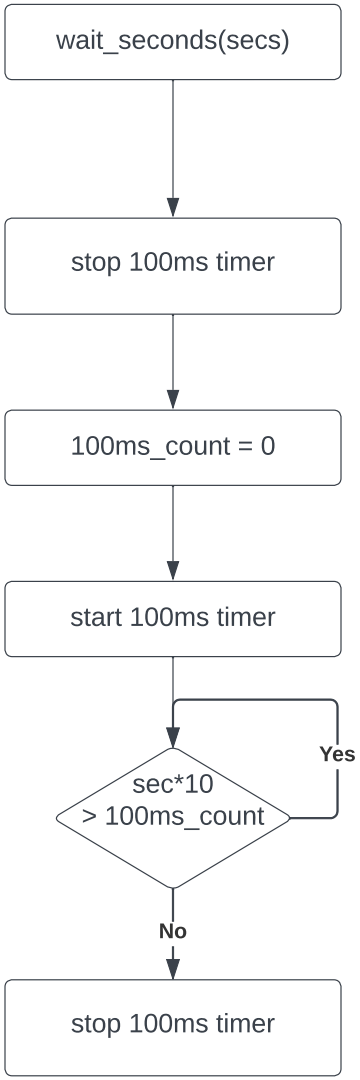
BILED_COLOR

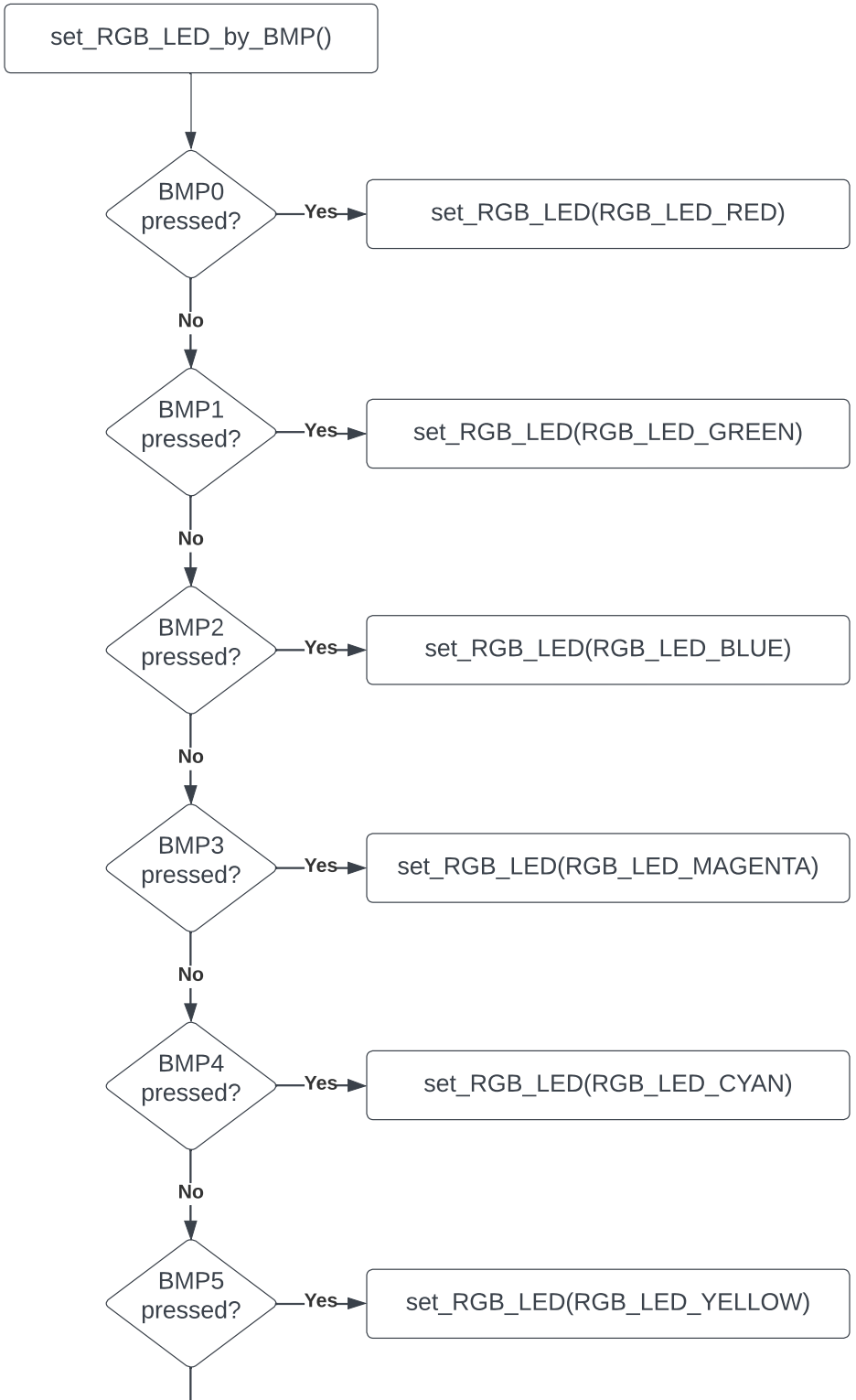
BILED_RED = 0

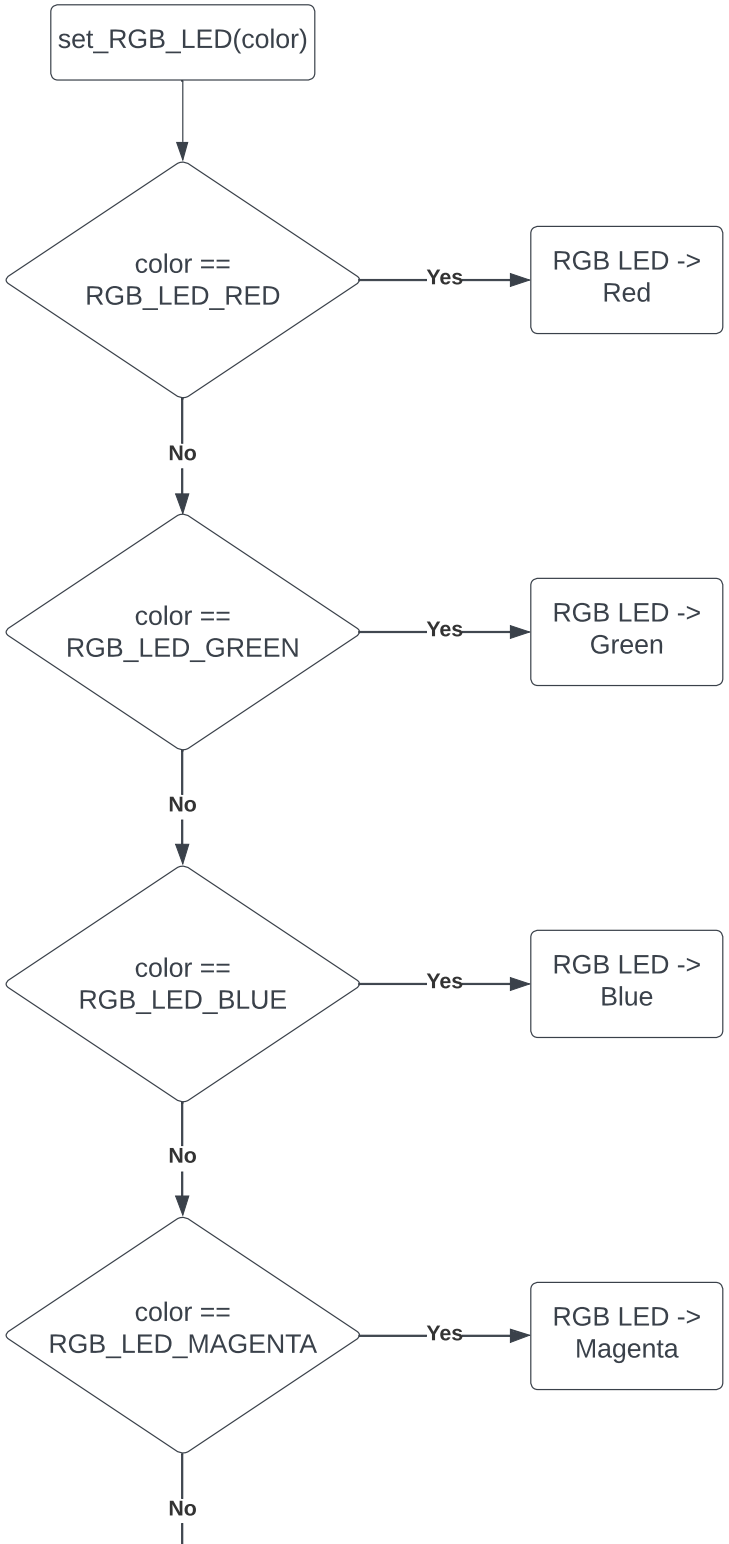
BILED_OFF = -1

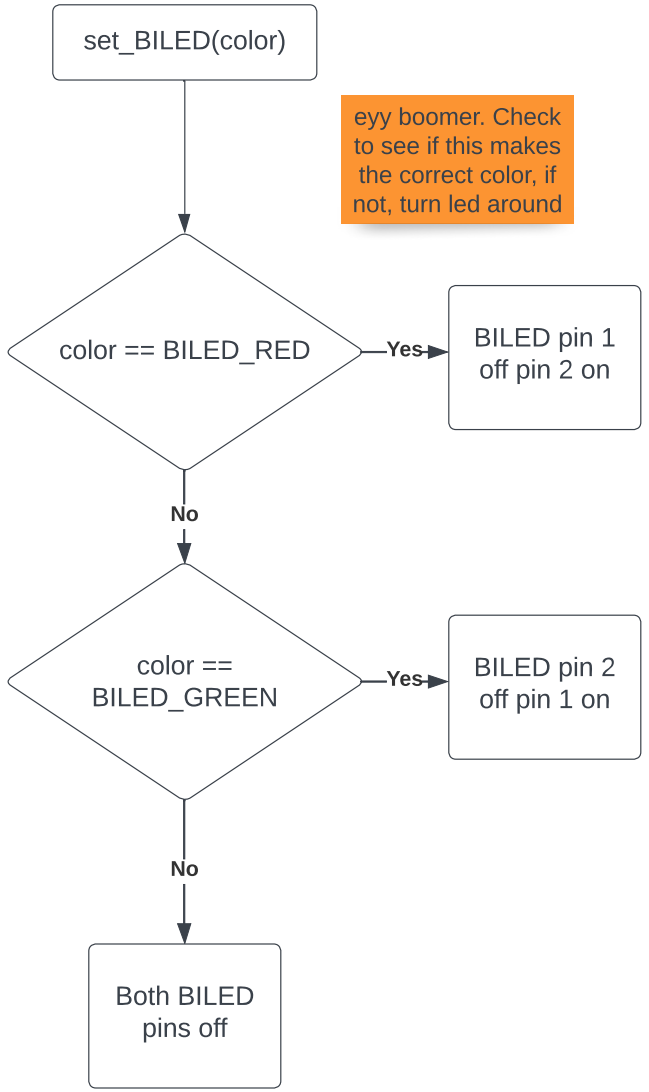
BILED_GREEN = 1

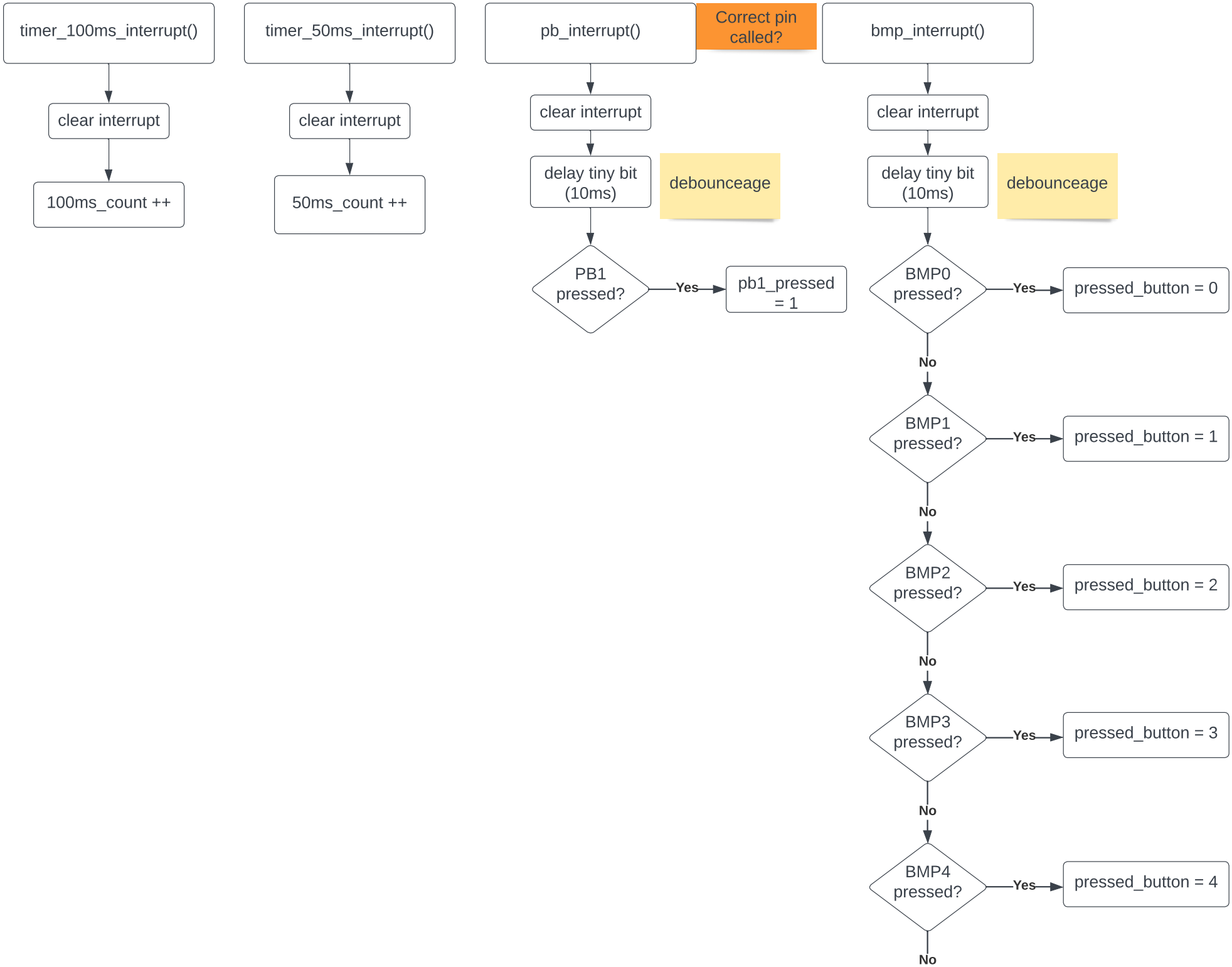

initilize variables
state = 0
color_pattern = RGB_LED_COLOR[5]
pb1_pressed = 0
reminders_left = 1
removed_patterns = 1
pressed_button = -1
-1 means no buttons pressed
Pattern_init()
i = 0
i < 5
No
Yes
color_pattern[i] = random_number
i++
Beep boop to terminal (playing instructions)
Main Loop

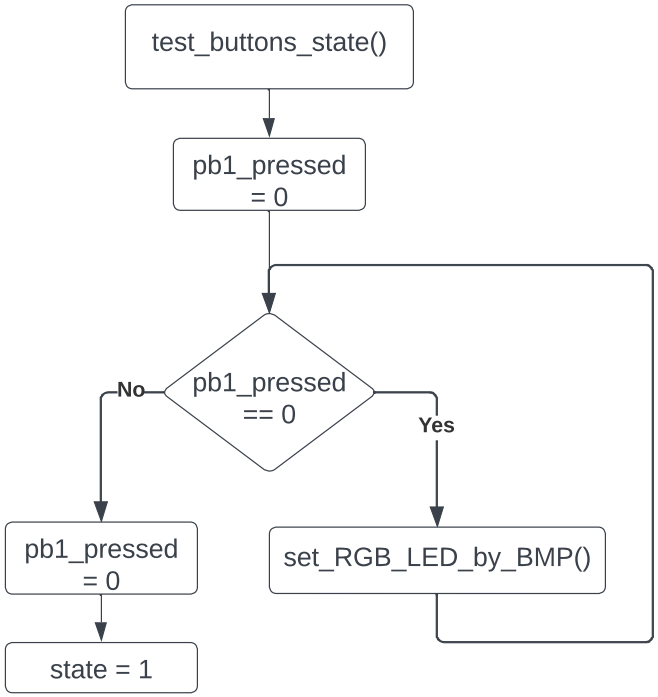

wait_seconds(secs)
stop 100ms timer
100ms_count = 0
start 100ms timer
sec*10
> 100ms_count
Yes
No
stop 100ms timer

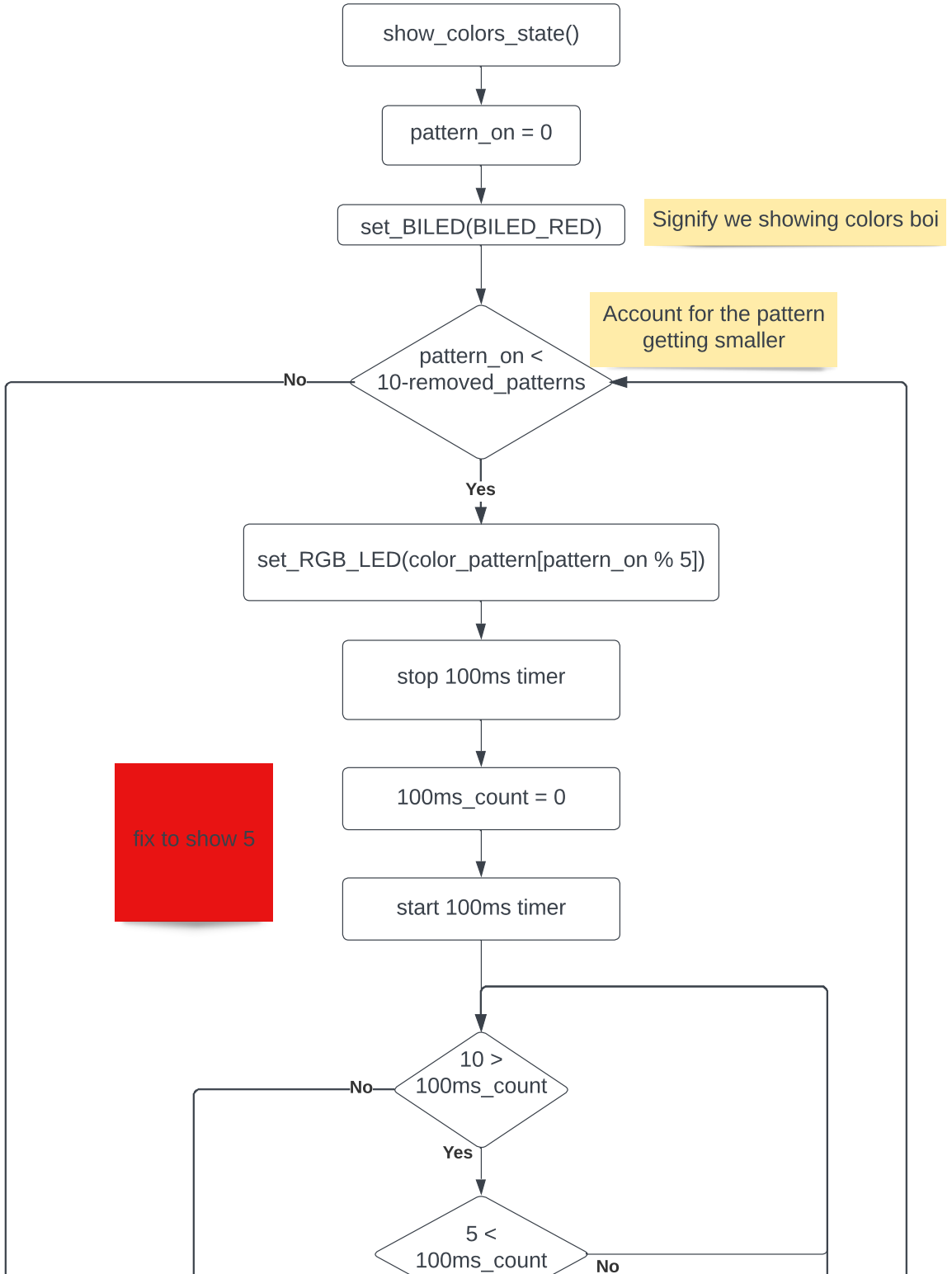

set_RGB_LED_by_BMP()
BMP0
pressed?
Yes
set_RGB_LED(RGB_LED_RED)
No
BMP1
pressed?
Yes
set_RGB_LED(RGB_LED_GREEN)
No
BMP2
pressed?
Yes
set_RGB_LED(RGB_LED_BLUE)
No
BMP3
pressed?
Yes
set_RGB_LED(RGB_LED_MAGENTA)
No
BMP4
pressed?
Yes
set_RGB_LED(RGB_LED_CYAN)
No
BMP5
pressed?
Yes
set_RGB_LED(RGB_LED_YELLOW)

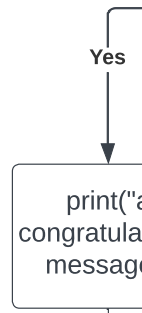

set_RGB_LED(color)
color == RGB_LED_RED
Yes
RGB LED -> Red
No
color == RGB_LED_GREEN
Yes
RGB LED -> Green
No
color == RGB_LED_BLUE
Yes
RGB LED -> Blue
No
color == RGB_LED_MAGENTA
Yes
RGB LED -> Magenta
No

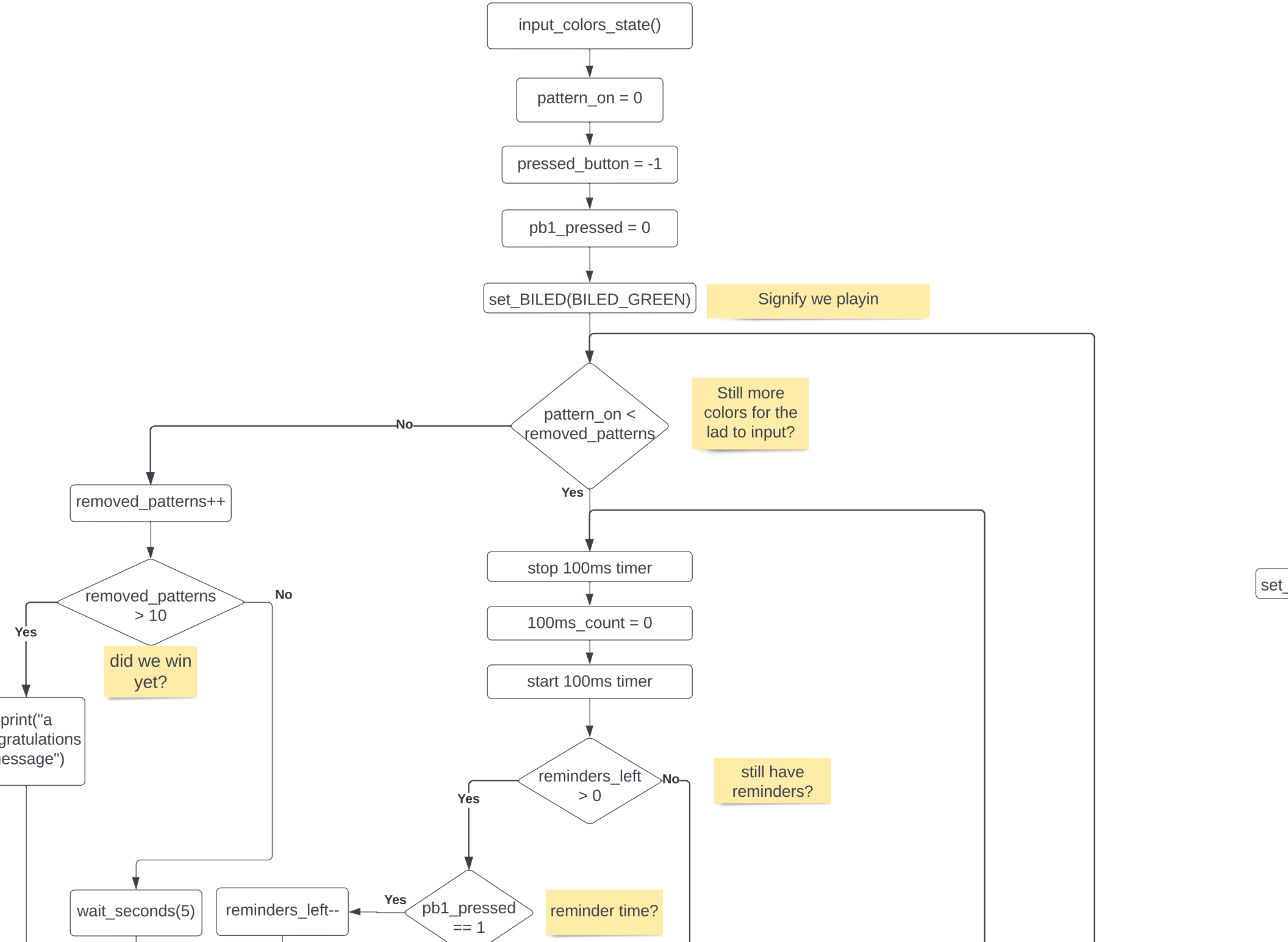

set_BILED(color)
eyy boomer. Check to see if this makes the correct color, if not, turn led around
color == BILED_RED
Yes
BILED pin 1 off pin 2 on
No
color == BILED_GREEN
Yes
BILED pin 2 off pin 1 on
No
Both BILED pins off

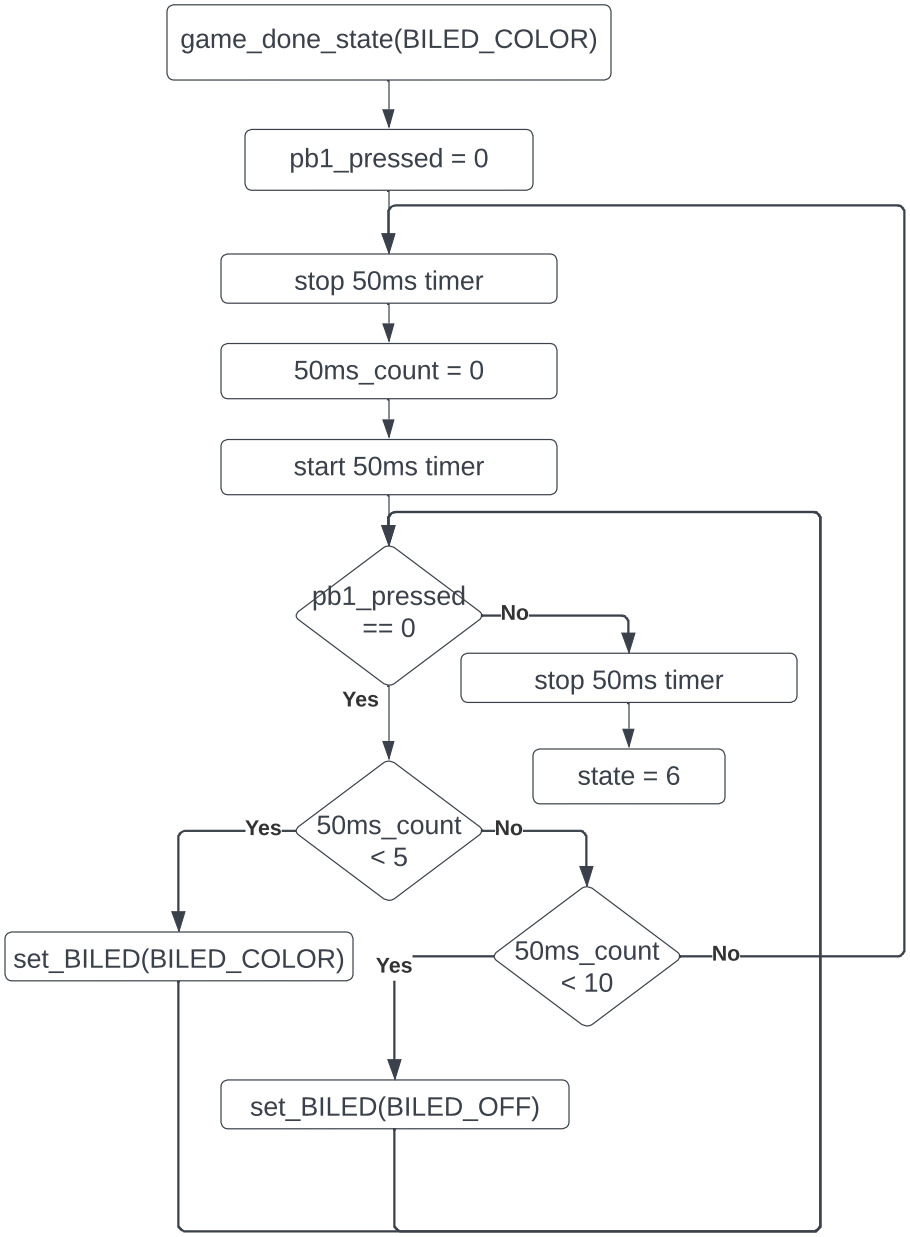

timer_100ms_interrupt()
clear interrupt
100ms_count ++
timer_50ms_interrupt()
clear interrupt
50ms_count ++
pb_interrupt()
Correct pin called?
clear interrupt
delay tiny bit (10ms)
debounceage
PB1 pressed?
Yes
pb1_pressed = 1
bmp_interrupt()
clear interrupt
delay tiny bit (10ms)
debounceage
BMP0 pressed?
Yes
pressed_button = 0
No
BMP1 pressed?
Yes
pressed_button = 1
No
BMP2 pressed?
Yes
pressed_button = 2
No
BMP3 pressed?
Yes
pressed_button = 3
No
BMP4 pressed?
Yes
pressed_button = 4
No

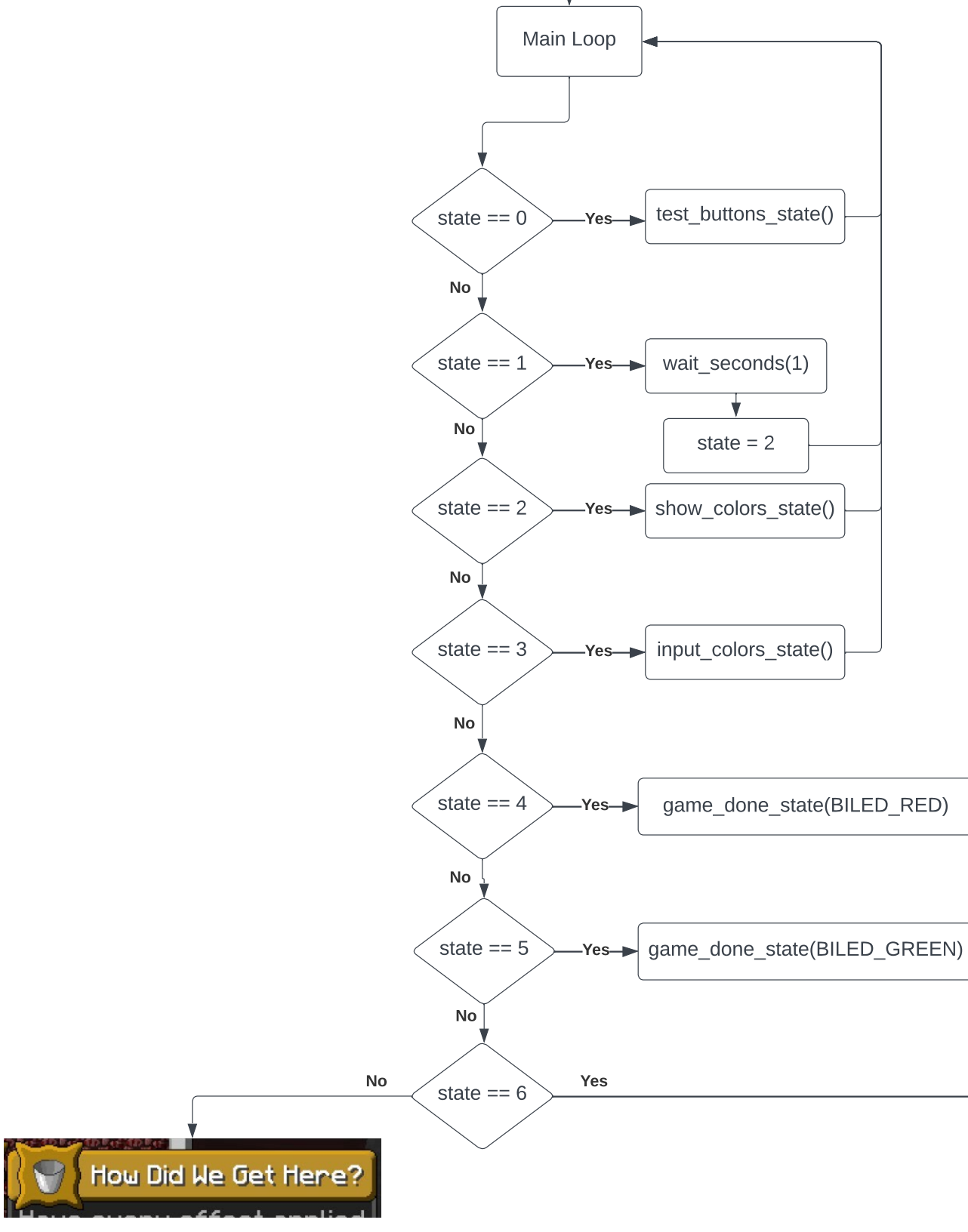

test_buttons_state()
pb1_pressed = 0
pb1_pressed == 0
No
Yes
pb1_pressed = 0
state = 1
set_RGB_LED_by_BMP()

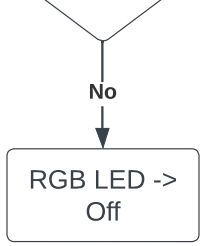

show_colors_state()
pattern_on = 0
set_BILED(BILED_RED)
Signify we showing colors boi
Account for the pattern getting smaller
pattern_on < 10-removed_patterns
No
Yes
set_RGB_LED(color_pattern[pattern_on % 5])
fix to show 5
stop 100ms timer
100ms_count = 0
start 100ms timer
10 > 100ms_count
No
Yes
5 < 100ms_count
No


Yes
print("a
congratula
messag


input_colors_state()
pattern_on = 0
pressed_button = -1
pb1_pressed = 0
set_BILED(BILED_GREEN)
Signify we playin
pattern_on < removed_patterns
Still more colors for the lad to input?
No
Yes
removed_patterns++
removed_patterns > 10
did we win yet?
No
Yes
print("a gratulations essage")
stop 100ms timer
100ms_count = 0
start 100ms timer
reminders_left > 0
still have reminders?
No
Yes
wait_seconds(5)
reminders_left--
pb1_pressed == 1
reminder time?
Yes
set_


game_done_state(BILED_COLOR)
pb1_pressed = 0
stop 50ms timer
50ms_count = 0
start 50ms timer
pb1_pressed == 0
No
stop 50ms timer
state = 6
Yes
50ms_count < 5
Yes
No
set_BILED(BILED_COLOR)
50ms_count < 10
Yes
No
set_BILED(BILED_OFF)


Main Loop
state == 0
Yes
test_buttons_state()
No
state == 1
Yes
wait_seconds(1)
state = 2
No
state == 2
Yes
show_colors_state()
No
state == 3
Yes
input_colors_state()
No
state == 4
Yes
game_done_state(BILED_RED)
No
state == 5
Yes
game_done_state(BILED_GREEN)
No
state == 6
No
Yes
How Did We Get Here?

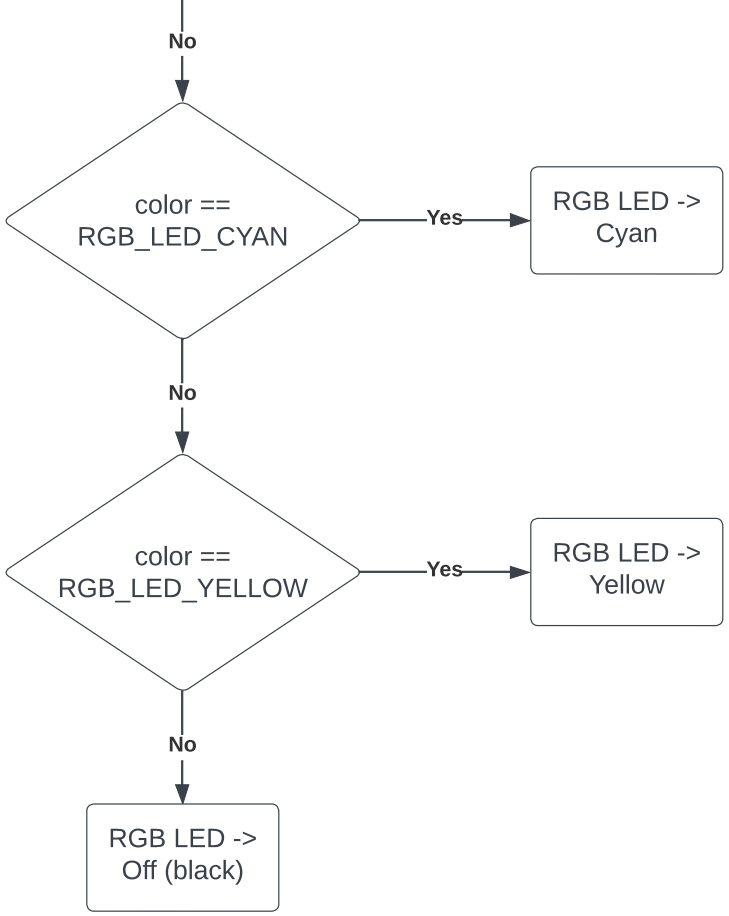


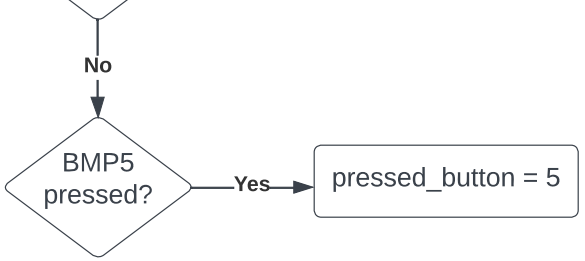
RED)

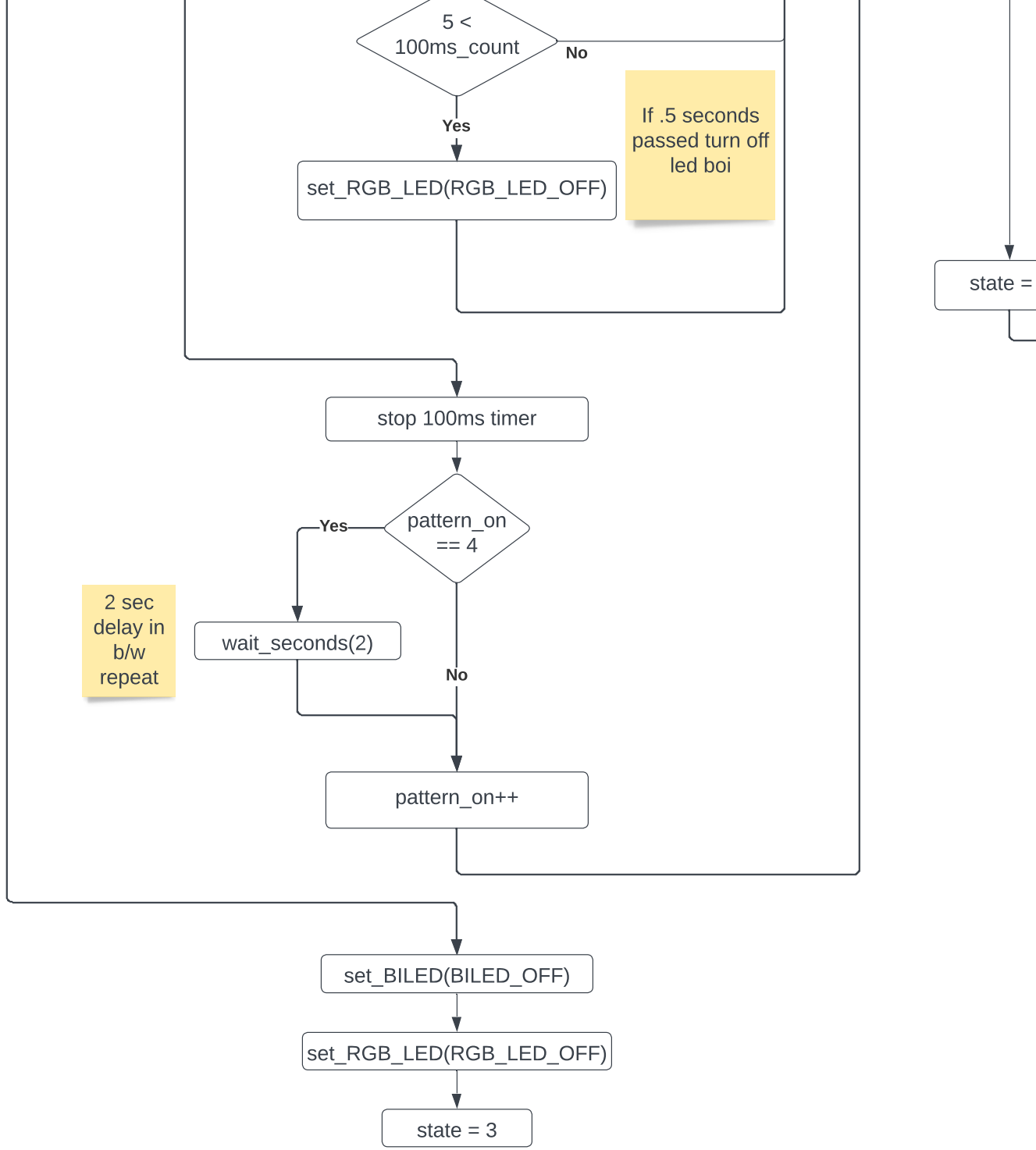
REEN)

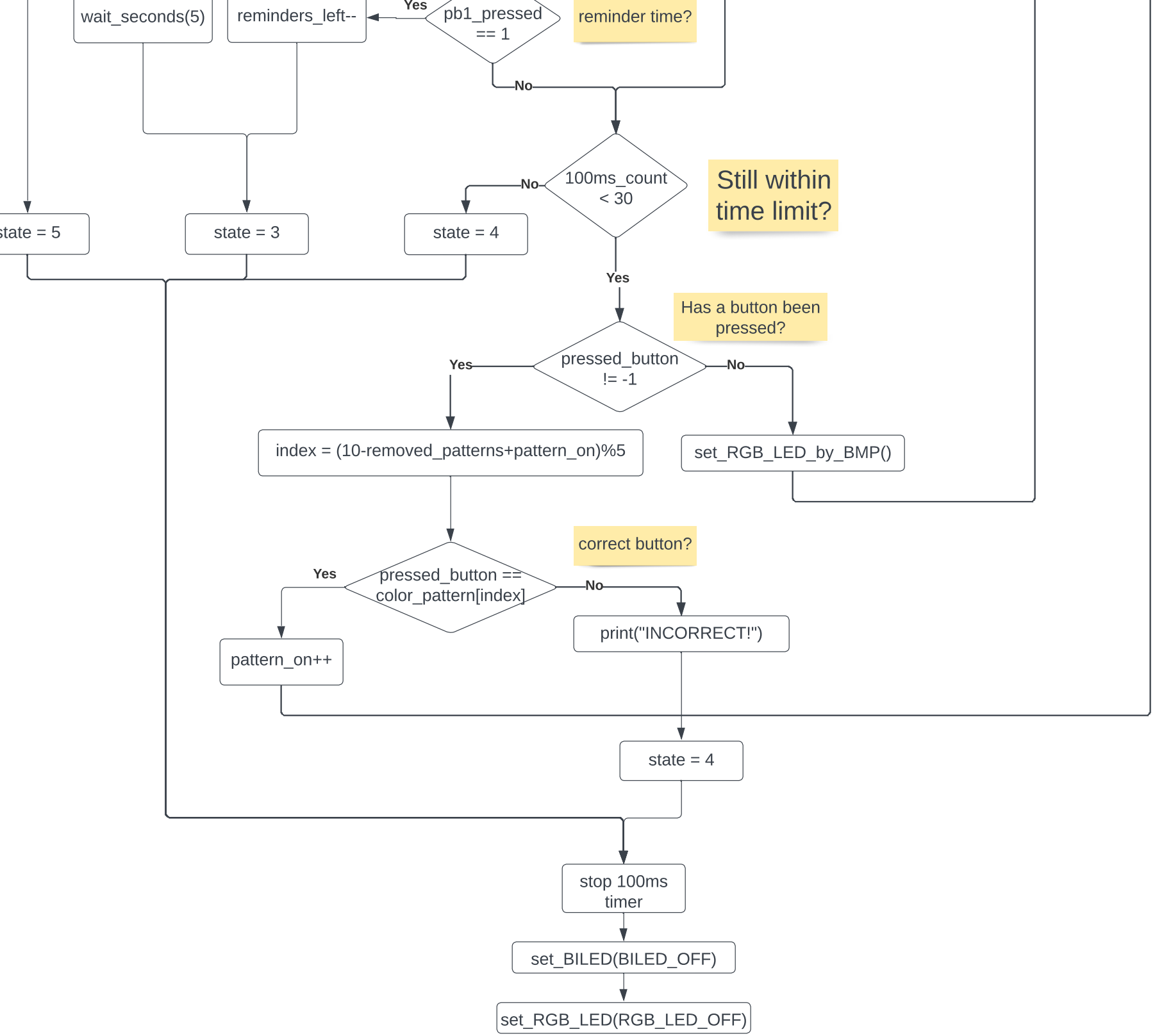
RED = lose

Text


No
color ==
RGB_LED_CYAN
Yes
RGB LED ->
Cyan
No
color ==
RGB_LED_YELLOW
Yes
RGB LED ->
Yellow
No
RGB LED ->
Off (black)


No
BMP5 pressed?
Yes
pressed_button = 5


5 <
100ms_count
No
Yes
If .5 seconds passed turn off led boi
set_RGB_LED(RGB_LED_OFF)
state =
stop 100ms timer
pattern_on
== 4
Yes
2 sec delay in b/w repeat
wait_seconds(2)
No
pattern_on++
set_BILED(BILED_OFF)
set_RGB_LED(RGB_LED_OFF)
state = 3


wait_seconds(5)
reminders_left--
Yes
pb1_pressed == 1
reminder time?
No
100ms_count < 30
No
Still within time limit?
state = 5
state = 3
state = 4
Yes
Has a button been pressed?
pressed_button != -1
Yes
No
index = (10-removed_patterns+pattern_on)%5
set_RGB_LED_by_BMP()
correct button?
Yes
pressed_button == color_pattern[index]
No
print("INCORRECT!")
pattern_on++
state = 4
stop 100ms timer
set_BILED(BILED_OFF)
set_RGB_LED(RGB_LED_OFF)