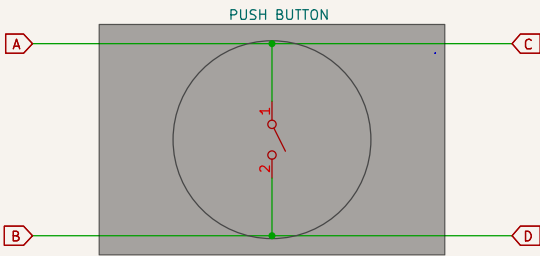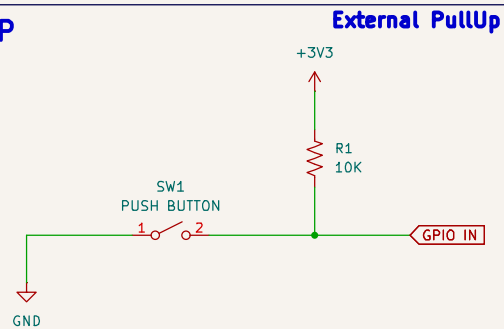# DIGITAL INPUT — PUSHBUTTON

This is a simple momentary pushbutton switch, used for manually & momentarily closing circuit paths.
- A & C are always connected.
- B & D are always connected.
- When button is pressed, switch is closed...
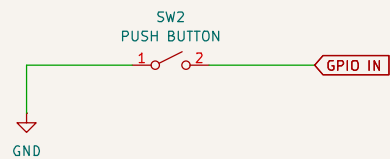... and any signal present at either A or C will be present at B & D, & vice-versa.

PUSH BUTTON

A — C
B — D

BUTTON: PULL-UP

External PullUp

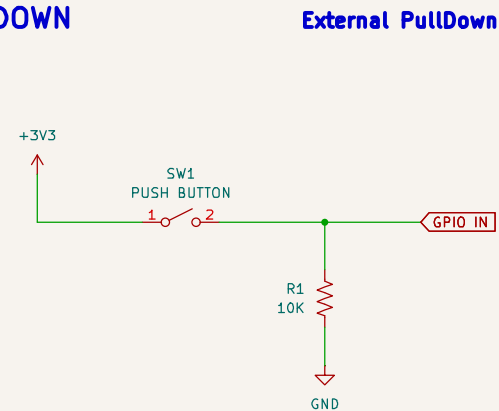+3V3

R1
10K

SW1
PUSH BUTTON
1   2

GPIO IN

GND

- Button is "pulled-up" to +3V3 when not pressed.
- When button is open, GPIO reads 1.
- When button is closed (button pressed), GPIO reads 0.
- Many MCUs have Internal PullUp resistors, but these must be enabled in software.

Internal PullUp

SW2
PUSH BUTTON
1   2

GPIO IN

GND

BUTTON: PULL-DOWN

External PullDown

+3V3

SW1
PUSH BUTTON
1   2

GPIO IN

R1
10K

GND

- Button is "pulled-down" to GND [0V] when not pressed.
- When button is open, GPIO reads 0.
- When button is closed (button pressed), GPIO reads 1.
- ESP32 MCU also has External PullDown resistors enabled via software.

Internal PullDown

+3V3

SW3
PUSH BUTTON
1   2

GPIO IN

Sheet: /
File: buttons.kicad_sch
Title: PUSH BUTTONS: PullUp & PullDown
Size: A4   Date: Rev:
KiCad E.D.A. 9.0.3   Id: 1/1