Button Basics
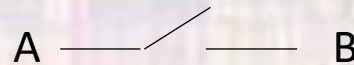
Last updated 8/16/21
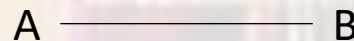
Button Basics

- 2 pin Button

  - Button not pushed – open circuit between the pins
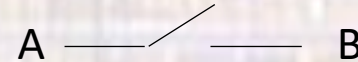
    A ⬜ ◯ ⬜ B   A —— / —— B

  - Button pushed – short circuit between the pins
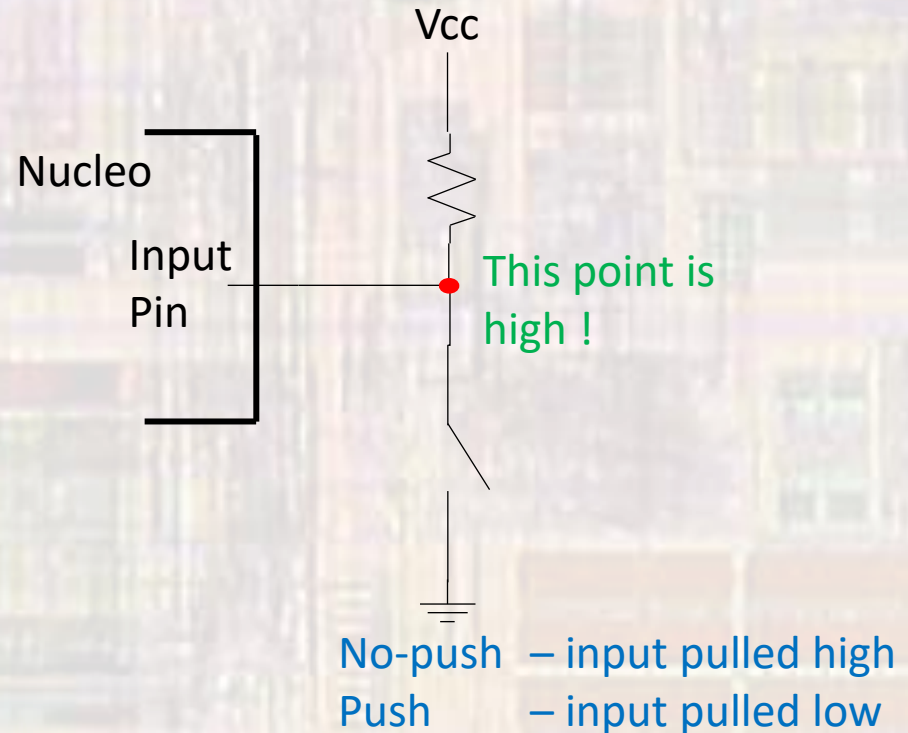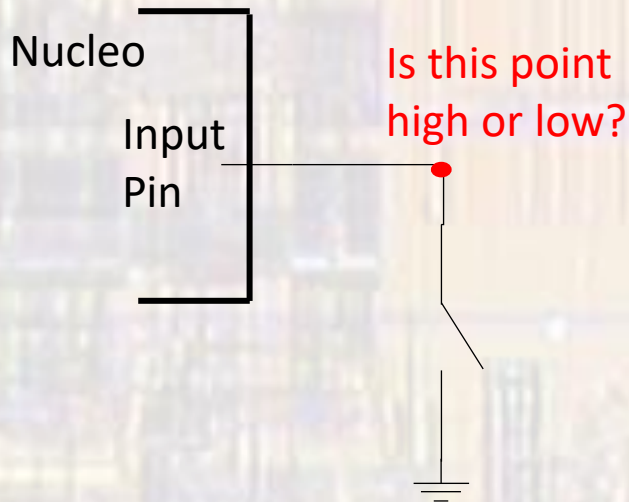
    A ⬜ ● ⬜ B   A ——————— B

Button Basics

- 2 pin Button – nominally open, pushed → closed

A [◯] B   A —— / —— B

- Need some kind of resistor in our design to ensure we know what state the input pin is in

Nucleo

Input
Pin

Is this point
high or low?

Vcc

Nucleo

Input
Pin

This point is
high !

No-push – input pulled high
Push   – input pulled low

Button Basics

- 2 pin Button – nominally open, pushed → closed

  A [◯] B   A ——— / ——— B

  - Need some kind of resistor in our design to ensure we know what state the input pin is in

Vcc

Nucleo

Input
Pin

Is this point
high or low?

Vcc

Nucleo

Input
Pin

This point is
low !
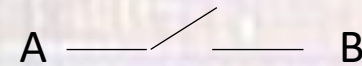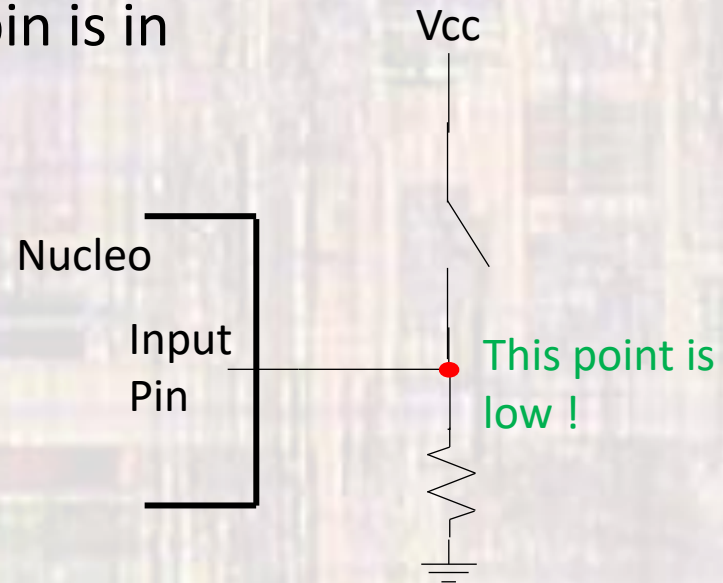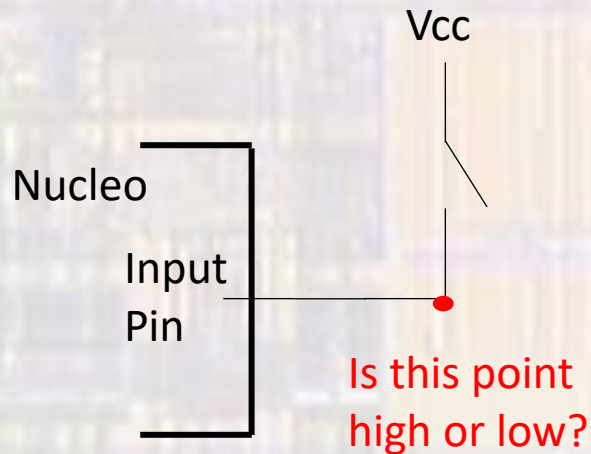
No-push – input pulled low
Push   – input pulled high

Button Basics

- ## 2 pin Button

  A ▢○▢ B   A ───/─── B
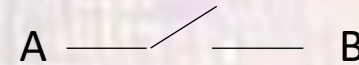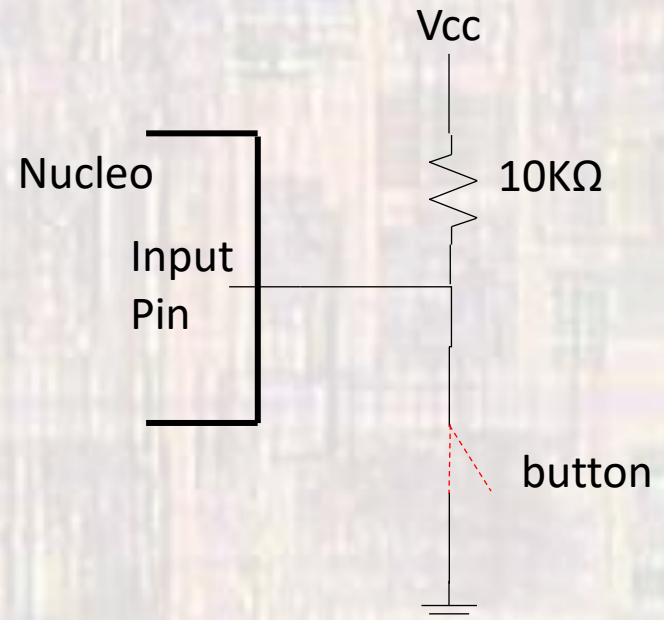
  - ## What resistor value?
    - Too small → wasted current (power)
    - Typically several KΩ

  - ## Example
    - 10KΩ
    - Button open → no current (pin high)
    - Button closed →
      (Vcc – Gnd)/10,000Ω =
      3.3V / 10,000Ω = 330uA
      (pin low)

Vcc

10KΩ

Nucleo

Input
Pin

button

No-push – input pulled high
Push   – input pulled low

Button Basics

- 4 pin Button