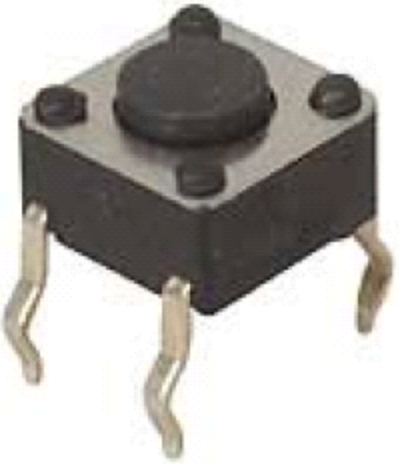
Button/Switch



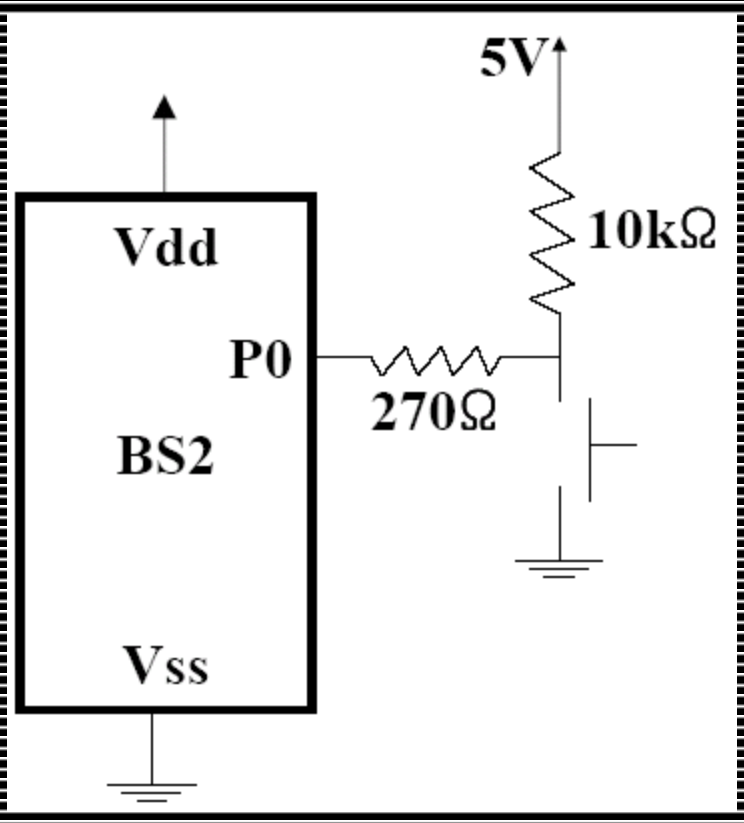
Symbol

What is a Button?

- A button is a user interface object that sends an action message to a target when clicked.

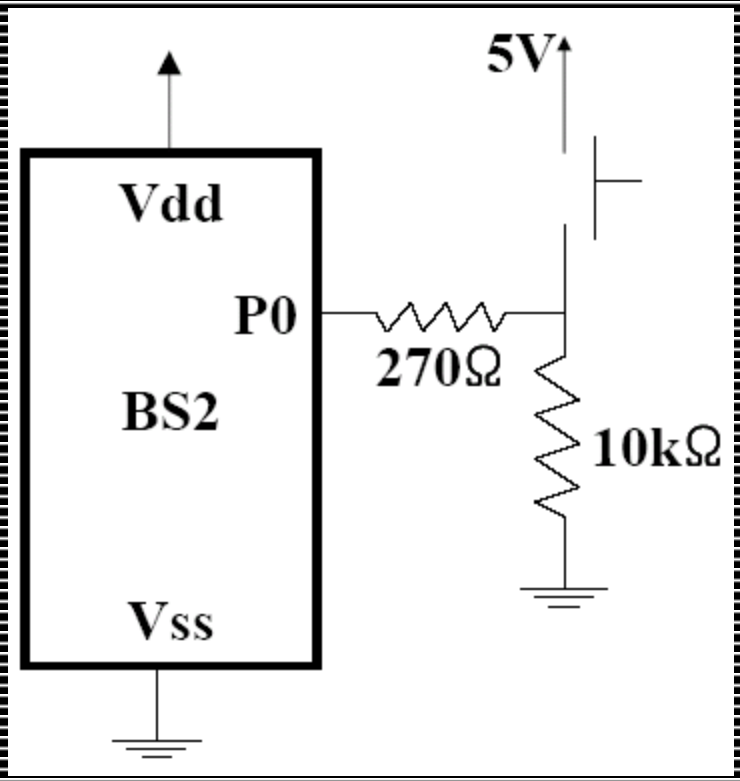
Button Connection No.1

- Button is not pressed P0 is pulled high
- Button is pressed P0 is pulled low
- 270 Ω is for protecting I/O pin

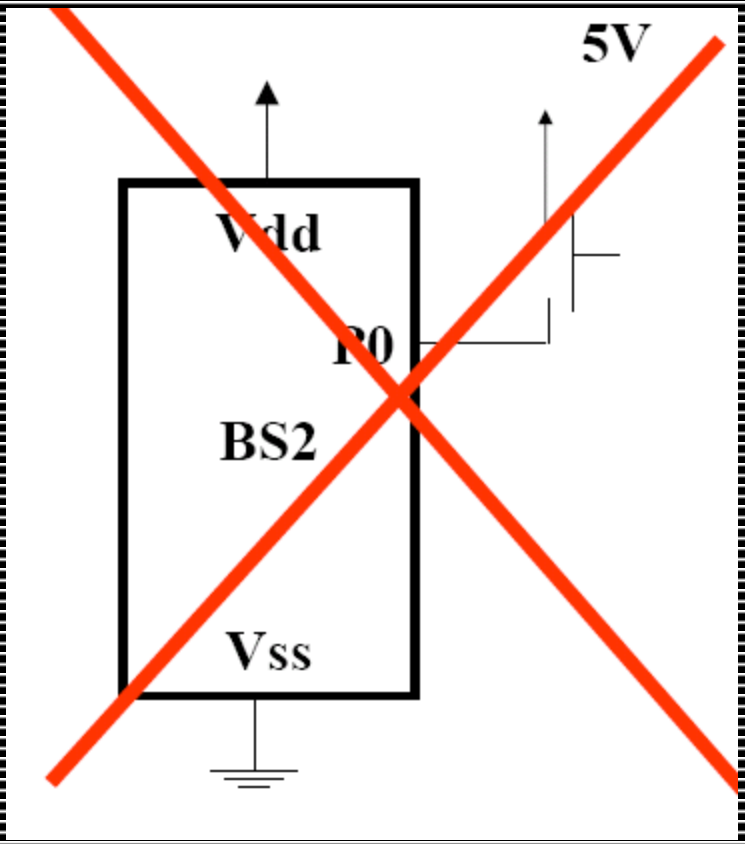


Button Connection No.2

- Button is not pressed P0 is pulled low
- Button is pressed P0 is pulled high
- 270Ω is for protecting I/O pin



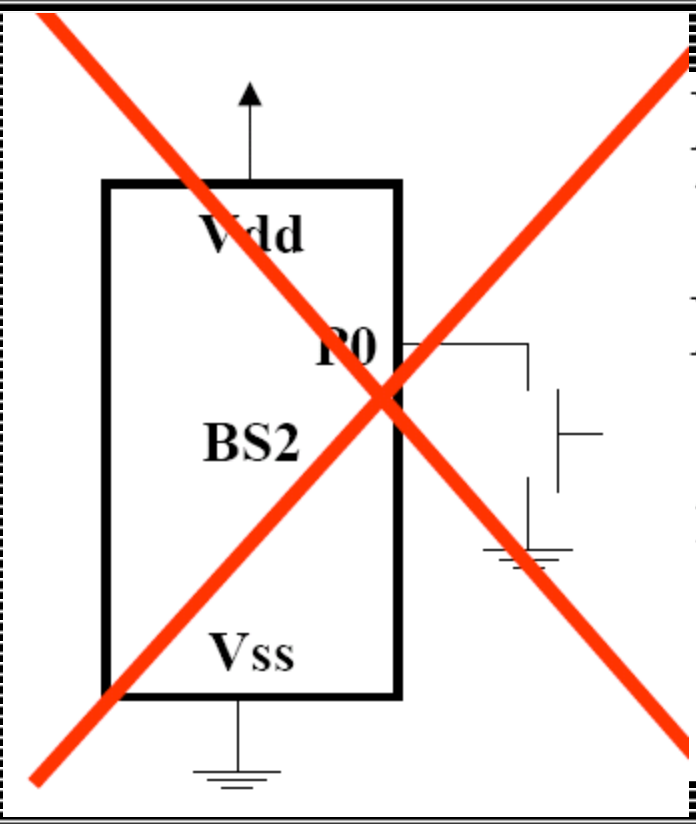
Warnings…



BS2 will get damaged when P0 is pulled high since the current limit through pin is violated

$$I = \frac{V}{R} = \frac{5}{0} = \infty$$

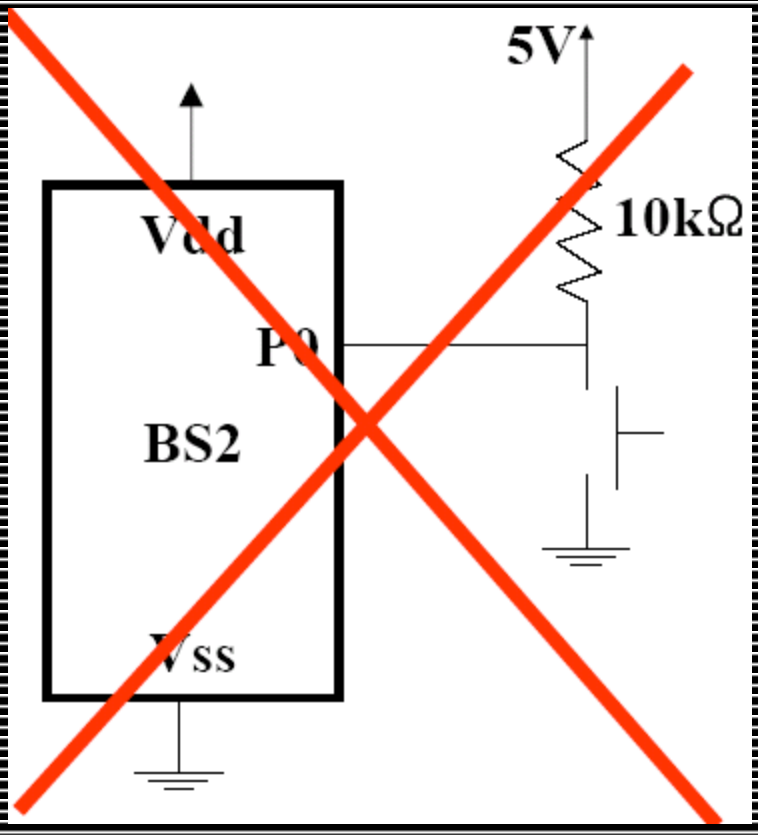
Warnings…



P0 is pulled low when the button is pressed

But P0 is not connected to anywhere when the button is not pressed then P0 could be either high or low so called a floating input condition

Warnings…



- Button is not pressed P0 is pulled high
- Button is pressed P0 is pulled low
- By mistake, P0 is used as a output when the button is pressed then…

Experiments

1. Experiment No.2: What is a Microcontroller?
2. Improve on the previous traffic light experiment by adding buttons.