ledbuttonflash Project Documentation
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Goal:
Make a blue LED on a breadboard flash by connecting it to a Nucleo board and pressing the user button to trigger its activation.

Summary:
In this embedded project, I used an STM32 F446RE Nucleo board as a voltage source to connect two 330 ohms resistors in series to a blue LED, and the circuit closes by connecting back into the ground of the Nucleo.

I learned how to initialize pins in HAL using GPIO_InitTypeDef. I also learned about structure fields like Pin, Mode, Pull, and Speed. Pin targets the specific pin number, mode was used to select the Pin B0 (source) as an output with push-pull functionality, Pull being set as NOPULL since I did not want a defined default state, and Speed being LOW because it is a circuit that only depends on a button press and isn't more urgent than that.

Once the pin is initialized, logic checking if the user button (Pin C13) is pressed in the while() loop ensures that the LED corresponds to its pressed state.

Circuit Diagram: