**SIMPLE COUNTDOWN DEVICE**

**Goal:** A simple electronic system that sounds an alarm (horn/beep) when the countdown timer reaches zero.

**Function:** Simple. Input the desired time to be countdown from. Press the start button. The timer counts down (displayed on the LCD screen), and when timer reaches zero, a horn/beep activates audio alarm. Ability to quickly reset the countdown timer to the previously stored time (in order to repeat the function). Ability to clear the countdown timer to zeroes so that new time can be input.

**Requirements:** The following design elements are imperative.

- Timer capable of counting down from 99 minutes, including split second capability.
- Input (button/keypad/dial, etc) capability to quickly program the desired time to countdown from (i.e. 1.91 seconds for a American Football Punt play)
- Prefer lithium battery capability (ore recharge capability), so that battery changes are not necessary, but not a non-negotiable.
- LCD screen output that shows the time programmed/remaining capable of being seen in bright sunlight.
- Input button(s) capable of clearing stored time, resetting back to stored time, and start/pause button that initiates countdown function.

**Product:** I'm looking for the design specs, product list, instructions for build, and potential improvements (functional enhancements) that might be able to be incorporated with ease.


**Potential Future Improvements:**

- Add a second timer that counts down from 2 hours, in five minute segments, and sounds an alarm every five minutes, and shows an ascending period number 1-24)
- Have commonly stored values available, i.e. 1.9 seconds, 3.8 seconds, etc.) that can be input easily, like speed dial on a cell phone.

## RESET

THE RESET BUTTON SIMPLY CLEARS THE CURRENT COUNTDOWN OPERATION, AND RESETS THE CLOCK TO THE PREVIOUSLY STORED VALUE.

## CLEAR

WHEN CLEAR BUTTON IS PRESSED THE PREVIOUSLY STORED TIME WILL BE CLEARED TO ZEROES.
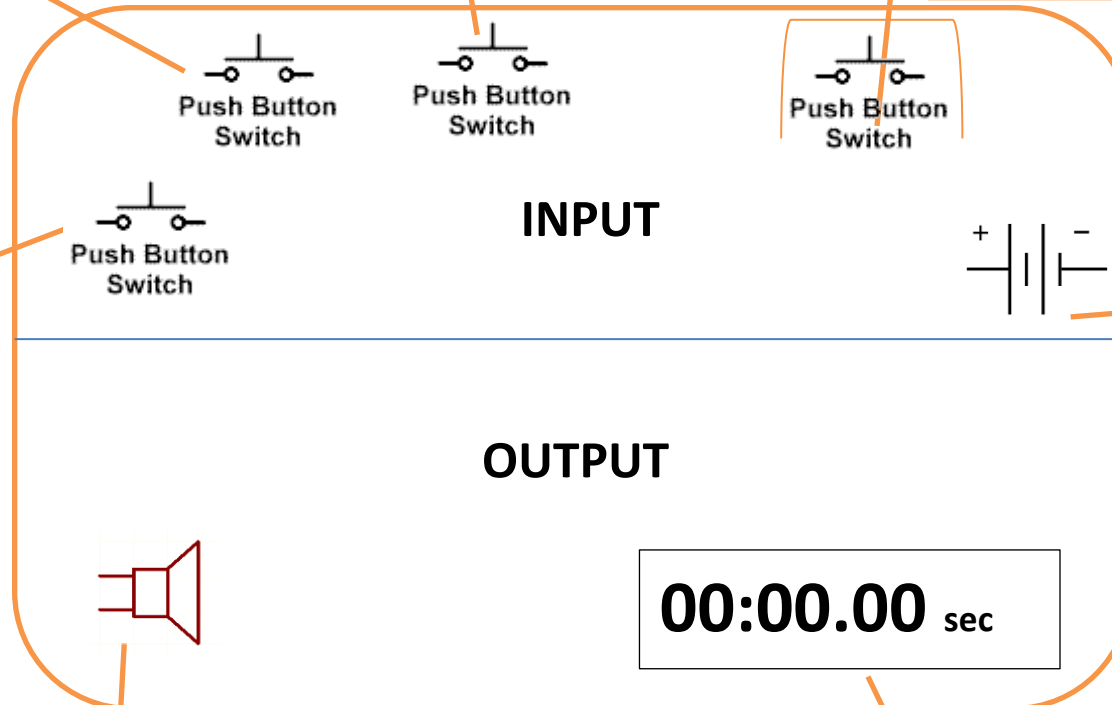
## TIMER INPUT/ADJUST

POTENTIALLY (4) DIFFERENT PUSH BUTTON SWITCHES THAT COUNT UP THE MINUTES, SECONDS, AND TENTHS AND HUNDRETHS SECONDS ON THE LCD SCREEN IN THE OUTPUT PART OF THE BOARD. POSSIBLY A DIAL? KEYPAD?

## START / STOP

PRESSING THE START BUTTON WILL INITIATE THE COUNTDOWN TIMER. PRESSING IT AGAIN WILL PAUSE THE COUNTDOWN TIMER.

Push Button Switch

Push Button Switch

Push Button Switch

Push Button Switch

**INPUT**

+ | | | | −

## BATTERY

POWER SOURCE FOR THE UNIT.

**OUTPUT**

00:00.00 sec

## OUTPUT: AUDIO HORN

PRIMARY OUTPUT IS HORN/BEEP. HORN IS ACTIVATED FOR A DURATION OF .75 SECONDS, WHEN CONDITION OF CLOCK REMAINING TIME= 0. VOLUME SHOULD BE APPROX 80 DECIBELS

## TIMER: LCD SCREEN

THE LCD SCREEN WILL DISPLAY THE TIME REMAINING TO BE EXPIRED IN THE FOLLOWING FORMAT: 00:00.00 (MIN:SEC:SPLIT).