

# StopWatch

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March 8, 2019

- It calculates the total 'On Time' of the system.
- It allows controller project to keep track of time even if it's reprogrammed or if power is lost.
- Perfect for data logging, clock-building, time stamping, timers and alarms.

# How It Works

- Second, Minute and Hour are initialized to zero
- If clock frequency = 12 MHz, after  $12 \times 10^6$  cycles, a second is updated
- Similarly, at end of 59th sec, a minute and end of 59th min, an hour is updated
- eg. if 32 sec is to be displayed,  
Values are calculated as  $(32/10) = 3$  and  $(32 \bmod 10) = 2$
- If system is reset, timer starts from zero.
- Output is displayed on SSD

- This can be used as Alarm Clock
- Precision can modified using internal clock frequency cycles upto milliseconds and microseconds