

# Stopwatches and timers

Hsi-Pin Ma

<http://lms.nthu.edu.tw/course/24953>

Department of Electrical Engineering

National Tsing Hua University

# Stopwatches

- Two states
  - ‘Stop’ (initial state) and ‘Start’
- The ‘lap’ function is only meaningful at ‘Start’ state
  - A register for ‘lap’ function
    - Not lap: Display down-counting number
    - Lap: Display the very number when pressed but still down-counting in background
- The ‘reset’ function is only meaningful at ‘Stop’ state
- De-Skew and one-pulse circuits

# Timers

- When 'Setting'
  - One-pulse?
  - Accelerating the number setting?
- When operation
  - Three states
    - 'Start', 'Stop' (the time goes to 0), 'Pause' (the time remains when pressed)