Chapter 13 Key terms

* **Precision:** Number of levels we can represent in a signal
  + More precision will require more bits per sample
  + 16 alternatives is 4bits (2^4=16)
* **Resolution:** Smallest change you can represent in an analog signal
* **Sampling:** 
  + More sampling will need faster processing
  + More sample means higher precision (Nyquist theorem)
* **Nyquist Theorem:** if the signal is sampled with a frequency of *fs* then the digital samples only contain half of *fs*
* **Aliasing:** When the digital signal appears to have a different frequency than the original signal
* **DAC Circuits:**
  + Binary weighed circuit: Intuitive
  + R-R ladder
    - Each resistor is twice as large as the next one
    - The last resistor (b0, b1, [b2]) is always the lowest
    - DIGITAL = vsource \* (nbit/maxbit) = ANALOG
      * 0010 = 3.3 \* (2/15) = 0.44v
      * 0010b = 0.44v

Good to know:

* DACs are generally interfaced using high-speed synchronous protocols like SPI/SSI
* DAC output can be current or voltage

Example: [Building a 3bit DAC](https://youtu.be/5LveKTMGuEM)





