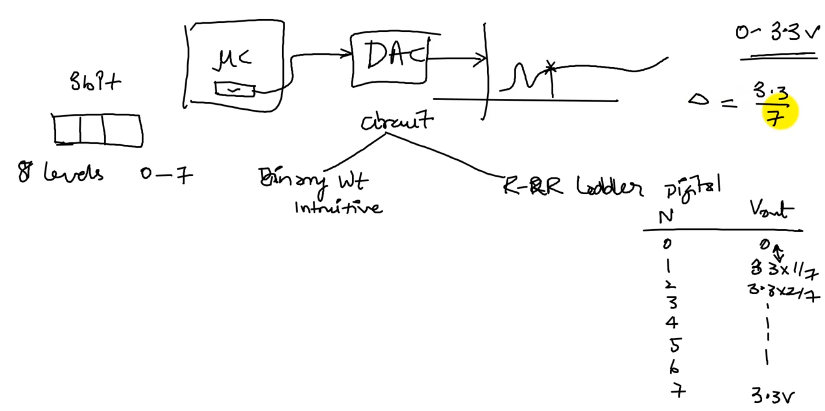
Chapter 13 Key terms

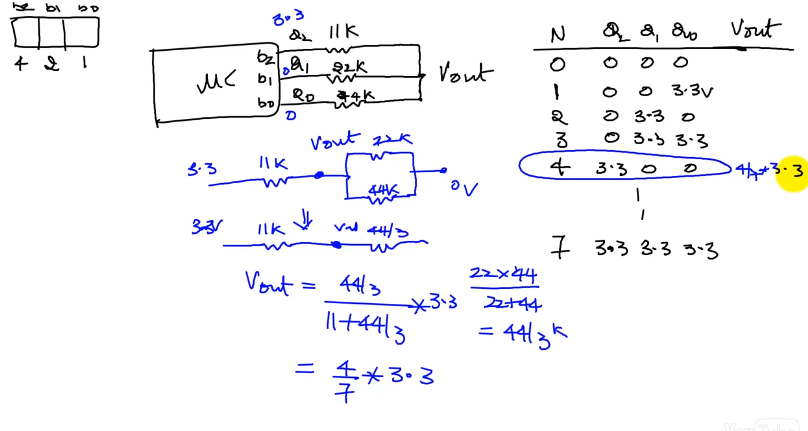
* **Precision:** Number of levels we can represent in a signal
  + More precision will require more bits per sample
  + 16 alternatives is 4bits (2^4=16)
* **Resolution:** Smallest change you can represent in an analog signal
* **Sampling:** 
  + More sampling will need faster processing
  + More sample 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
    - Each resistor is twice as large as the next one
    - The last resistor (b0, b1, [b2]) is always the lowest
  + R-2R ladder
    - Most common circuit in IC DACs

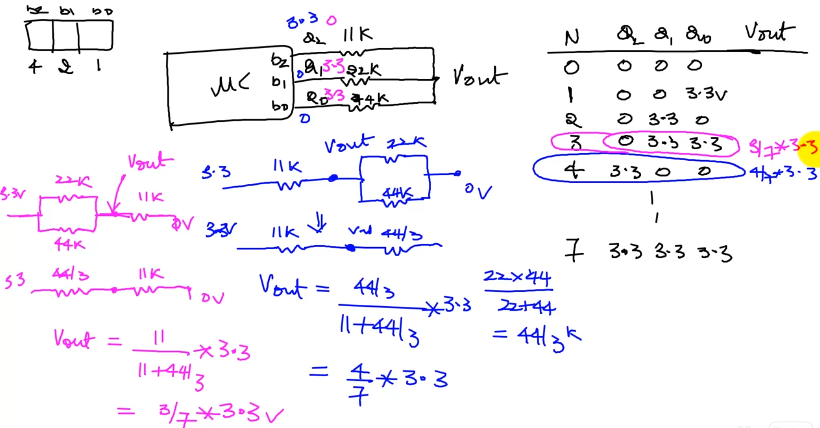
Good to know:

* DACs are generally interfaced using high-speed synchronous protocols like SPI/SSI
* DAC output can be current or voltage
* he frequency of each musical note can be calculated by multiplying the previous frequency by https://d37djvu3ytnwxt.cloudfront.net/assets/courseware/v1/4eabf99dee70467762b5b5dc1c350550/asset-v1:UTAustinX+UT.6.20x+T2017+type@asset+block/c13-image012.png

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







**R-2R weighed Example:** [**Building a 3bit DAC**](https://www.youtube.com/watch?v=DfuhVG5LKxA)

