When analyzing amplifiers, consider the following “steps”

**DC Analysis**
- Biasing
  - Design Voltage reference
  - Rref,
  - Current source
  - Current mirrors
- Voltage swing
  - MOS transistors should stay saturated (i.e. $V_{DS}>V_{GS}-V_{DS}$, $V_{SD}<V_{SG}+V_{TP}$),
  - BJT transistors should stay in the linear mode ($V_{BE} \approx 0.7$, $V_{CE}>0.1$).

**Small Signal Analysis**
- Use it to find 2-port equivalent
- Figure out parasitic capacitors in the small signal circuit
- Figure our Rin, Rout, roc, Av, Ai
- Do frequency response of simple amps.

**2-Port Analysis**
- Use it to take advantage of pre-calculated properties of CE, CB, CC, CD, CS, CG.
- Use it to create compact representations of each stage, so that you can figure out cascaded, multi-stage amps.
- Use it (with parasitic and load capacitors) to figure out frequency response of complex amps.