Lecture 16 - Soldering

- Layout: Protoboard set up much like bread board
  Best to put components, wires on one side, solder on other
  → So you can see everything

- IC sockets: Hard to remove soldered chip
  Better to use socket:
  solder socket to board
  add/remove chip as needed

- Wires: Two types: solid & stranded
  Best to use solid wire for on-board connections (easier)
  Use stranded for off-board connections (flexible)

  I like using strips from ribbon cable:
  Good for groups of off-board wire that go to same place

- Cutting & Stripping: use stripper tool
  Don't make on-board wires too long:
  hard to deal with big loops

  Leave 6+" leads for off-board wires

Soldering

Solder component pins to pads on board

Solder = tin-lead alloy, melts at ~ 200°C

Never solders lead-free, don't work as well

Also contains flux: cleaning agent, makes smoke, smell

Technique:

Heat up pad & pin with soldering iron

Works best if iron already "wetted" with a little solder

Apply more to joint (not to iron!)

Apply enough solder to fill in hole

- avoid excess blobs

Don't eat the solder. Also, smoke from flux can be irritating, & iron will burn you

Solder Removal:

Use solder wick

Place over solder, heat with iron

Works best with fresh wick

Schedule:

- Do testing worksheet today, turn in
- Start soldering work: due 11/12