

LECTURE-6

Soldering Basics:-



Here are the ground rules for soldering:

Rule 1: Irons get hot. Don't poke lab partner in the eye with it.

Rule 2: Use a wet sponge. This may seem counter-intuitive, just do it. This wet sponge is used to clean the corrosion on the tip of the iron. A dry sponge does nothing but damage the tip. Every time while pulling the iron from the stand, it's a good idea to swipe the tip on the sponge just to clean it off and get a nice silver tip - it will allow to solder much quicker and much cleaner.

Rule 3: The point on the iron-tip is NOT the hottest part. This takes some practice but learn to use the side of the tip near the point. It's all about getting the heat to flow from the iron to the joint. If you sit in one spot for a long period of time and nothing is flowing, take a step back, clean the tip, add a bit a solder to the tip, and try soldering the joint again.

Rule 4: The soldering iron is only there for heat, not solder. One uses the iron to heat two things - the part and the board, and then adds solder to the two heated parts. do not add a glob of solder to the tip and then rub this mess against the two things you're trying to solder together. Use the side of the iron (remember, not the point) to heat the two parts while adding solder from the opposite side.

Rule 5: Perfectionism kills. If a soldered looks alright, let it be. Do not solder, then touch up, and re-solder, and then have to touch up a third time. This heating/reheating stresses the PCB (printed circuit board) and will quickly delaminate the board, lifting traces, pads, and destroying the board.

Rule 6: When soldering joints that have a lot of thermal weight, heat the joint up for an additional 5-10 seconds. When soldering to a big part or a pad that has a lot of copper attached to it (very common with GND connections), it takes a few extra seconds for the iron to pump enough heat into the part to get it to the correct temperature to form a connection. If noticed iron tip feels 'sticky', or the solder balling to the pin instead of flowing to the joint, this is because one part of the joint is not hot enough. Hold the iron on the joint for a few extra seconds and allow the solder to flow correctly.