Through the importance of the safety manual, I learned that in order to solder pieces of circuits together, the student must be cautious about the excess led residue which could contaminate the eyes and hands. Goggles should be worn when using solder with a soldering iron, and hands should be washed after the process of soldering is complete. I have learned that in order to assemble an FPGA board, the student must have all the parts and tools necessary in order to solder on various pins and USB ports/switches to the copper board. Solder is made up of a tin/copper alloy and must never be touched to the tip of the soldering iron during the soldering procedure. The soldering iron cone tips come in various sizes for bulk versus precision usage and should be handled within the 15W to 30W power range.

The joint of the copper pad and pin should be hot enough to be able to heat the solder itself. If solder is to accidentally touch the soldering iron, forming a ball shaped pack of iron, simply brush the soldering iron against a slightly wet sponge or brass sponge. A soldering iron tip can last longer before being destroyed if the student solders the tip before and after usage. Tools that can greatly help with the precision of the soldering technique include de soldering braid and third hand. The de soldering braid can be placed on top of excess solder to help remove it from the copper board. The third hand is made up of clamps that can support the placement of a chip board while soldering.