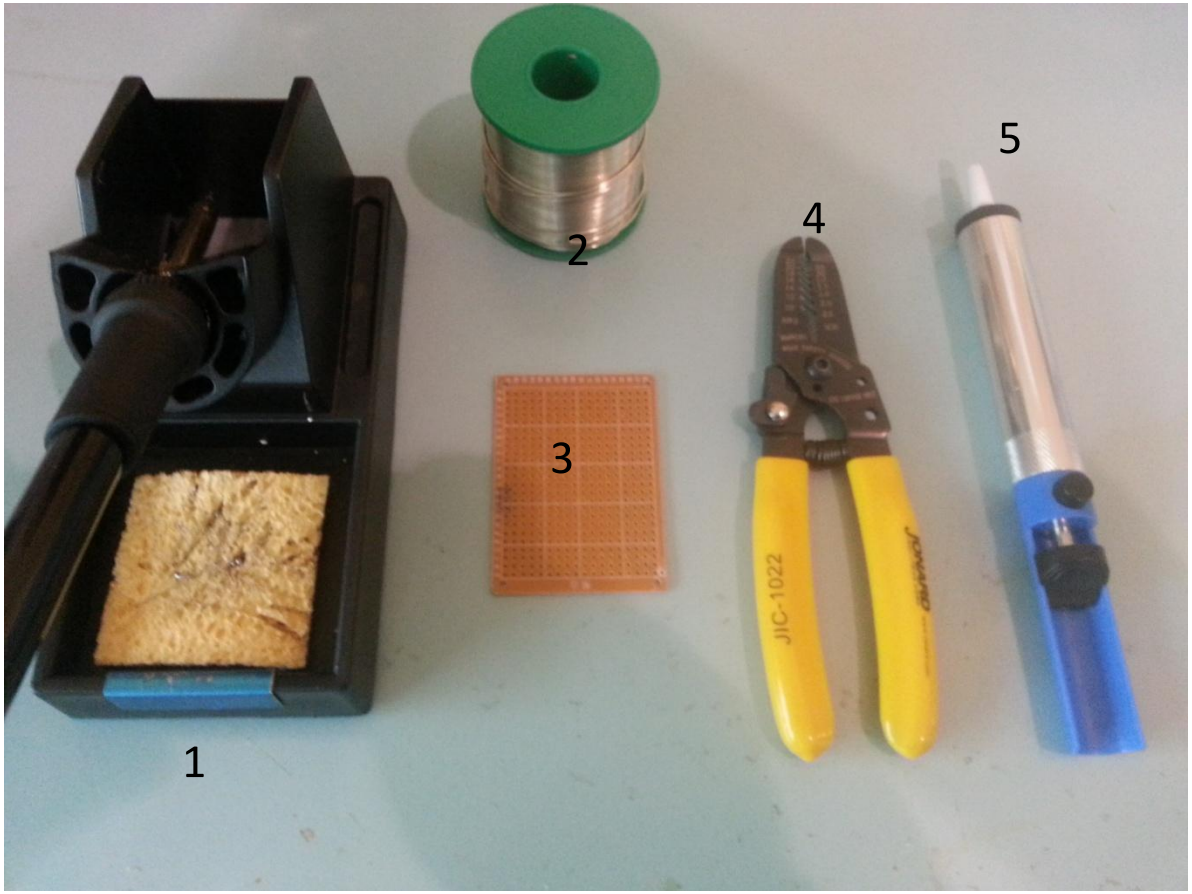
ECSESS Roboelectronics

Steps to building a proto-board from a working breadboarded circuit

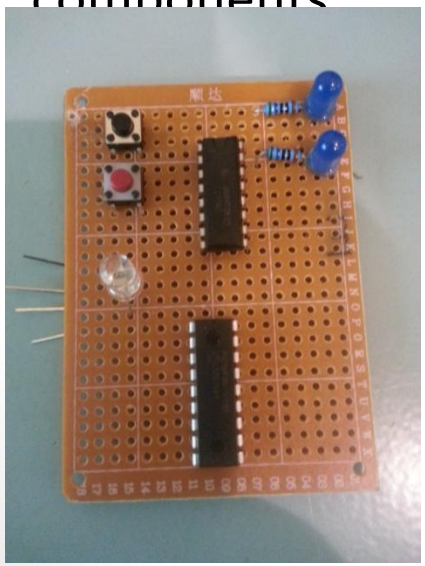
#1 Tools required

1. Soldering Iron
2. Solder
3. Proto-board
4. Wire strippers
5. Solder sucker



#2 Plan out your board

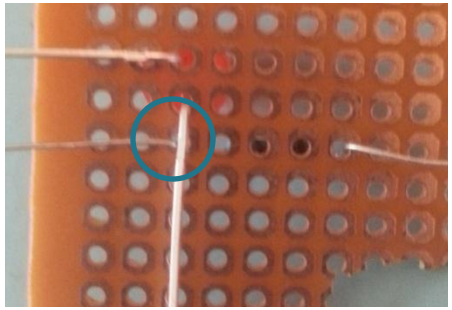
- **Plan out your board before starting to solder.**
- Take pictures of your breadboard so that you remember the connections.
- Place all the components on the proto-board and make sure there is enough room for all the components and connections.
- Take pictures of the proto-board and remove the components



#3 Soldering components

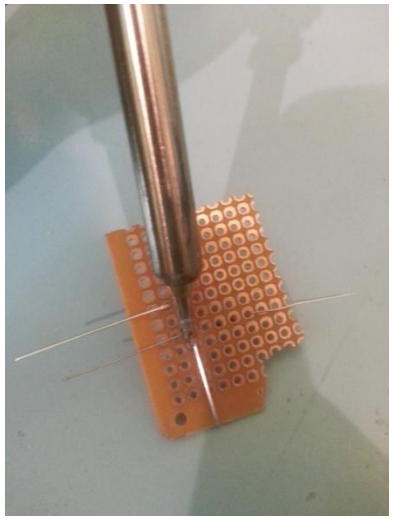
1. Place some components back into the predetermined location

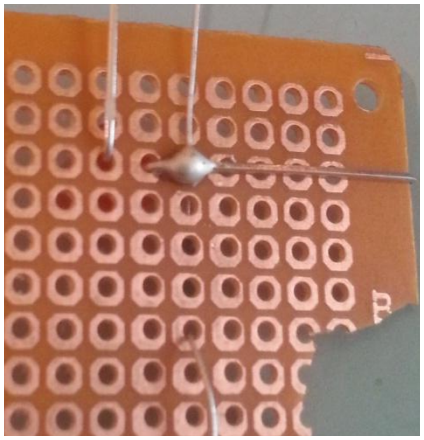
2. Bring anything that protrudes as close as possible to each other, in this case the leg of the LED and resistor. Making a solid contact between them will make soldering easier



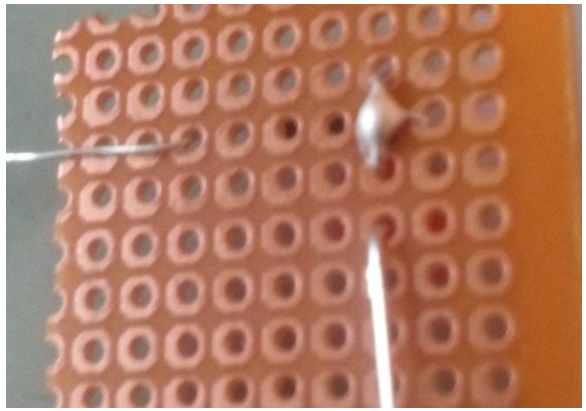
#3 Soldering components

3. Bring the strand of solder to the location of the connection and have it touching where you would like the joint. Bring in the soldering iron to melt the solder and complete the connection.





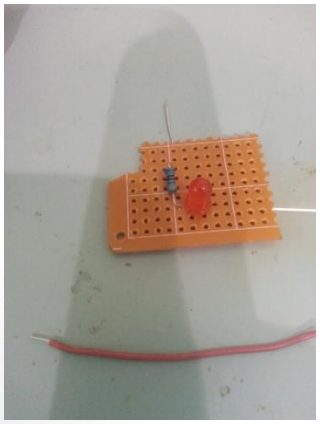
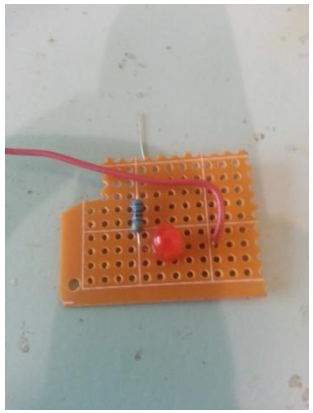
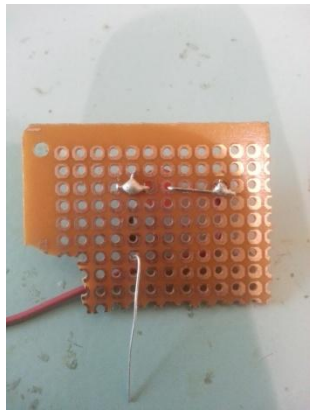
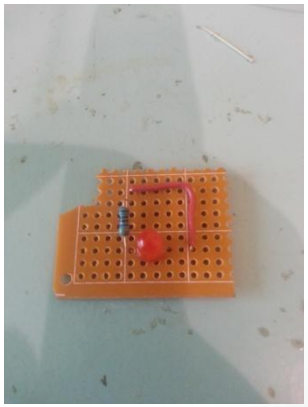
4. Lastly, if necessary cut off any excess material to keep the board clean. In this case the leg of the resistor and LED



#4 Clean jumper wires

A neat and organized breadboard and proto-board are always easier to debug. Therefore follow these steps to keep your jumper wires from becoming a rats nest.

1. Cut a length of wire longer than you need it to be to reach from one location to the next, and strip one side of it
2. Solder the stripped end in place
3. Bend and place the wire along the best path. This will help you measure out the exact length it needs to be
4. Strip, place and solder the other end of the wire.

#5 Fixing Solder Bridges

A solder bridge might happen at any time if you are putting too much solder on the place you are attempting to solder.

It will be a bridge between two locations that you don't want to be connected.

If you cannot remove the bridge by reworking the solder with the soldering iron, **heat up the solder joint and bring the solder pump close**. Press the button which activates the solder pump and it will suck up the hot solder which should solve the issue.