Microprocessors and Microcontrollers (EE-231)
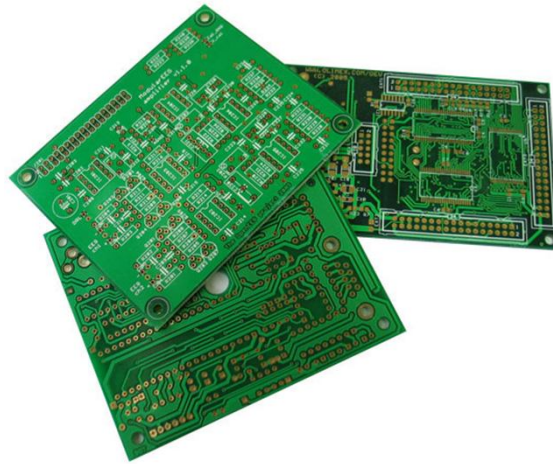
Lab-15

Objective

- **Introduction to PCB designing and its terminologies**
- PCB Layout design on Proteus
- Demonstration on PCB machine

PCB

- PCB stands for printed circuit board.

- In PCB designing, the schematic is translated into a layout that is given to the manufacture.
- **Eagle**
- **Express PCB** etc are some of various PCB design softwares.
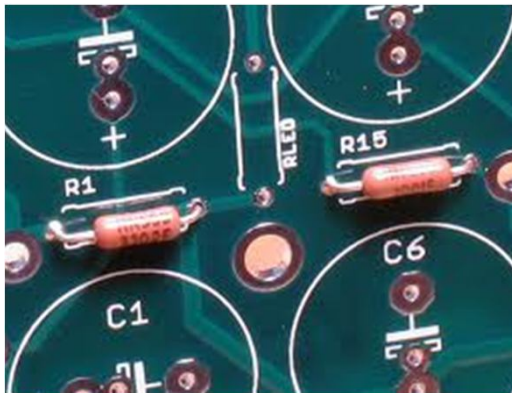
PCB terminologies

- Pitch: Spacing between components (e.g. pins on an IC package)
- Track/trace: Copper "wires" on the board connecting components.
- Pad: Exposed copper on which you can solder things. Thru-hole pads often act like vias.
- Via: A hole in the board that is plated on the inside. Used to connect tracks on different layers of a board.
- Silkscreen: Print legend on PCB
- Soldermask: insulating coating that protects covered parts from solder. Mandatory for fine-pitch wave/reflow soldering
- Thru-hole components: components with leads that go through the circuit board and get soldered on the other side.
- Surface-mount (SMD/SMT) components: Components that are meant to be soldered on the same surface on which it is mounted (these are usually smaller and harder to solder).

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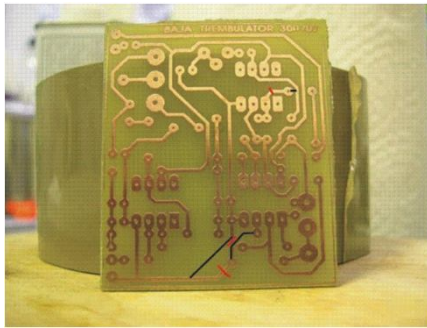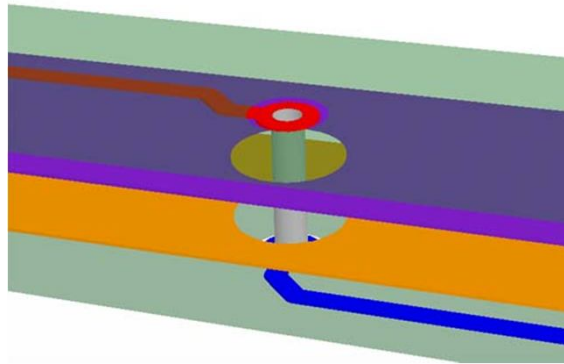

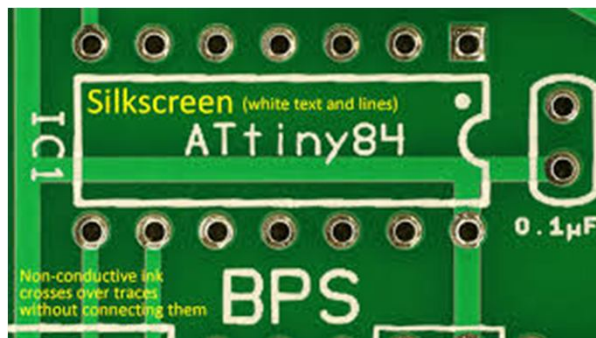- Pad: Exposed copper on which you can solder things. Thru-hole pads often act like vias.

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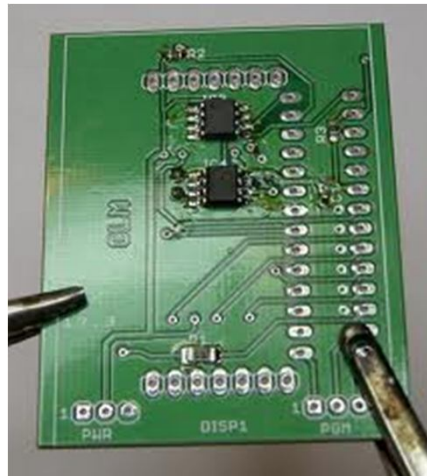

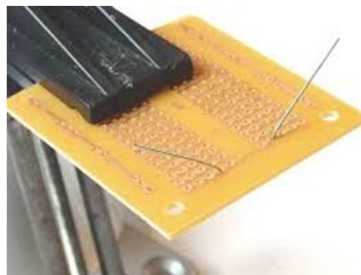- Silkscreen: Print legend on PCB

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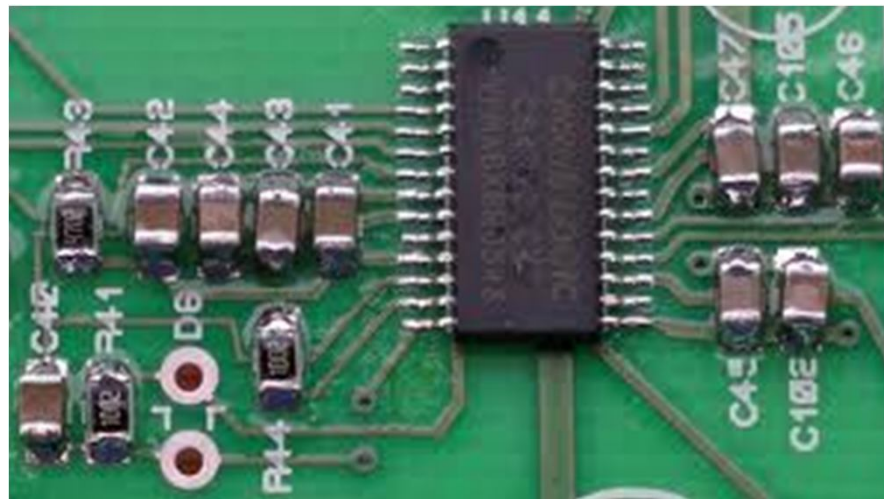- Soldermask: insulating coating that protects covered parts from solder. Mandatory for fine-pitch wave/reflow soldering

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