

1.2 Basic Components

Before we make a digital system circuit, we have to know more about what component that will be used when making a digital system.

Power Supply

Power supply is an electrical component that is used to supply electrical power for other components. Power supply that we mostly use in this lab is battery. On a battery there are two poles, the positive pole or VCC and the negative pole or GND (Ground).



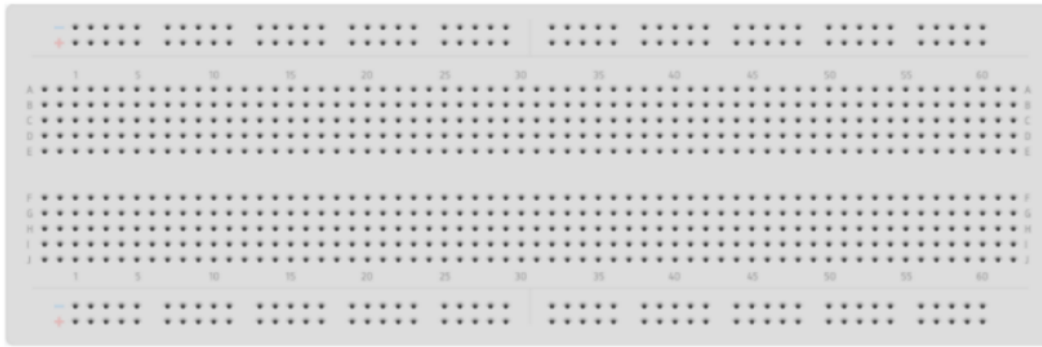
Cable

Cable (or jumper) is an electrical component that is used to connect between components, cable allows electrical current to flow from one component to another.

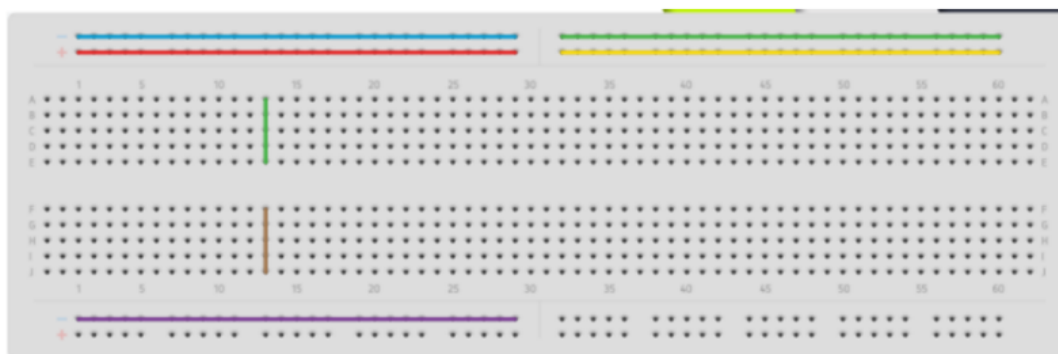
[image.png](#)

Breadboard

Breadboard (or “Protoboard”) is a component that is used to attach electrical components such as jumper, transistor, resistor, IC etc. When using breadboards we don’t need to solder wires and components to make a circuit, because of this reason breadboards are widely used in prototyping a digital circuit.



Breadboard consists of many holes and each hole is connected in a way to a metal plate. Not all holes in the breadboard are connected to each other, here is the picture of the breadboard's hole connections.

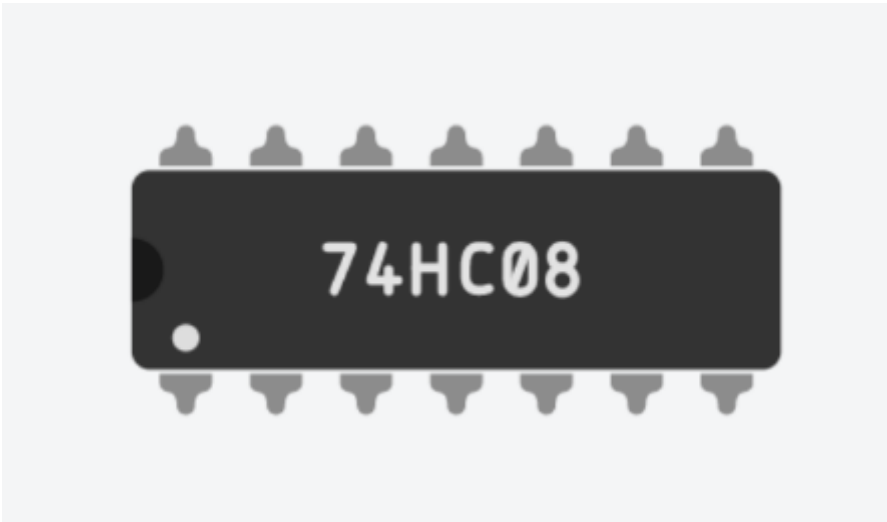


There are two kinds of connection in a breadboard, vertical and horizontal, the vertical connection is placed in the top and bottom part of the breadboard whereas the horizontal connection is placed in the middle part.

If you look at the picture, holes that are connected to a line with the same color share the same connection, when one of the holes in that color is connected to an electric current the other holes from the same color lines will have the same amount of current.

Integrated Circuit

Integrated Circuit (IC) is an electrical component that consists of hundreds or even thousands of transistors, diodes, and resistors integrated to form a digital circuit that has its own function.



Every IC has many pins, and each pin has its own function. We can see the function of each pin from the datasheet provided by the manufacturer.

Revision #4

Created 2025-09-04 06:38:33 UTC by DY

Updated 2025-09-04 06:58:55 UTC by DY