

electricity. Two of those connections are places where electricity may be put into the device, and the third connection is a place where electricity may come out of the device.

Of the three connections, two of them are called "inputs," because electricity can be sent to them from somewhere else. The third connection is called the "output" because electricity can come out of it and then be sent somewhere else.

This computer part is a device that does something with bits. If you have two bits, and you connect those two bits to the inputs, this device "looks" at those two bits, and "decides" whether to turn the one output bit on or off.

The way it "decides" is very simple, and is always the same. If both inputs are on, the output will be off. If one or both of the inputs are off, then the output will be on. That's just the way that the room with the odd light switches worked.

Remember that there is nothing but bits inside the computer. This simple device is where bits come from and where they go to. The "decision" that this device makes is how bits come to be turned on and off in a computer.

Two bits go into the device, and one bit comes out. Two bits come from somewhere else, are examined by the device, and a new third bit is generated so that it may go somewhere else.

If you have been extra observant, you may have asked yourself this question: "when both inputs are off, the output is on, so... how do you get electricity at the output if both inputs are off?" Well, that is an excellent question, and the excellent answer is that every one of these devices is also connected to power. Like every appliance or table lamp in your house, where each has a plug with two pins, this device has a pair of wires, one of which is connected to a place where the electricity is always on, and the other is connected to a place where the electricity is always off. This is where the electricity for the output comes from. When someone builds a computer, they have to make all of those power connections to each one of those parts in order to have it work, but when we are drawing diagrams