Logic gates AND, OR, NOT | Part A

So you already know that data instructions are based on a binary system which uses two states - on or off, true or false, one or zero. Computer memory uses many small transistors and capacitors to store data. These can be wired together to make a circuit which performs simple, logical calculations. These simple circuits are called logic gates, and there are three fundamental ones that you need to know about. Each logic gate has at least one input, and an output in the form of binary digits.

AND is a logic gate which outputs 1 if both of the inputs are 1. Otherwise it outputs 0. This is what an AND gate symbol looks like. Note the shape of it and that it has 2 inputs and 1 output.

I'm going to show you the gates in action in a light switch simulation which turns a light on or off depending on the switches. In my light switch simulation, if none of the switches are on, the light bulb does not turn on, if only one of the switches are on the light bulb still does not turn on. It does not matter which one of the two switches are on, the light bulb will not turn on. Only when both of the light switches are on will the light bulb actually turn on. So this gate needs both of the inputs to be on for the output to be on.