



Breadboarding workshop

By Shannon Strutz

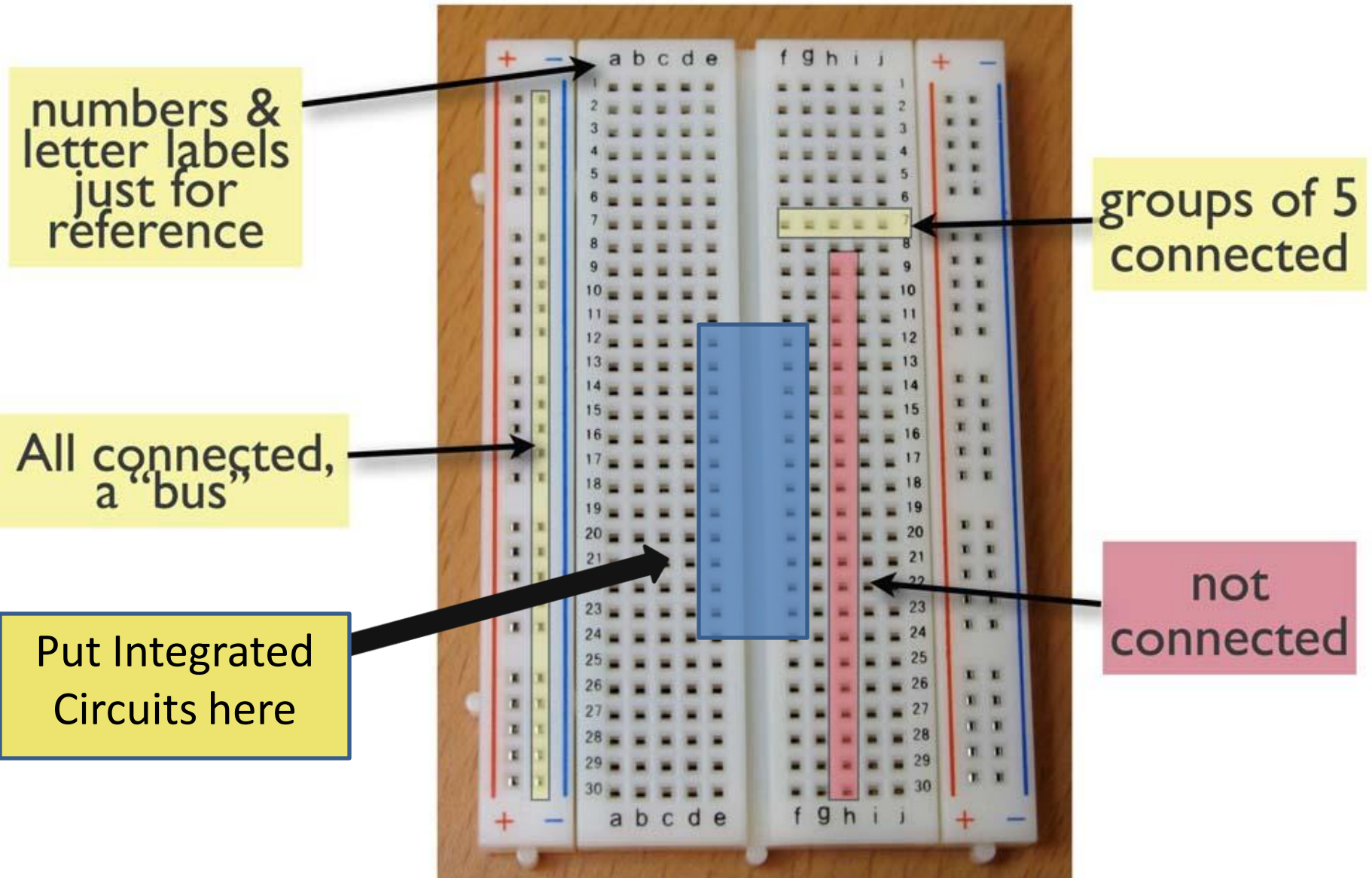
Overview

- How solderless breadboards work
- The 555 timer and its datasheet
- Simple 555 timer circuits
- 74HC595 circuits

What you need

- Laptop
- A breadboard
- A 555 timer (or two)
- Some wire
- Some LEDs
- A 9V battery with clip
- A 74HC595 shift register for later

Solderless Breadboards

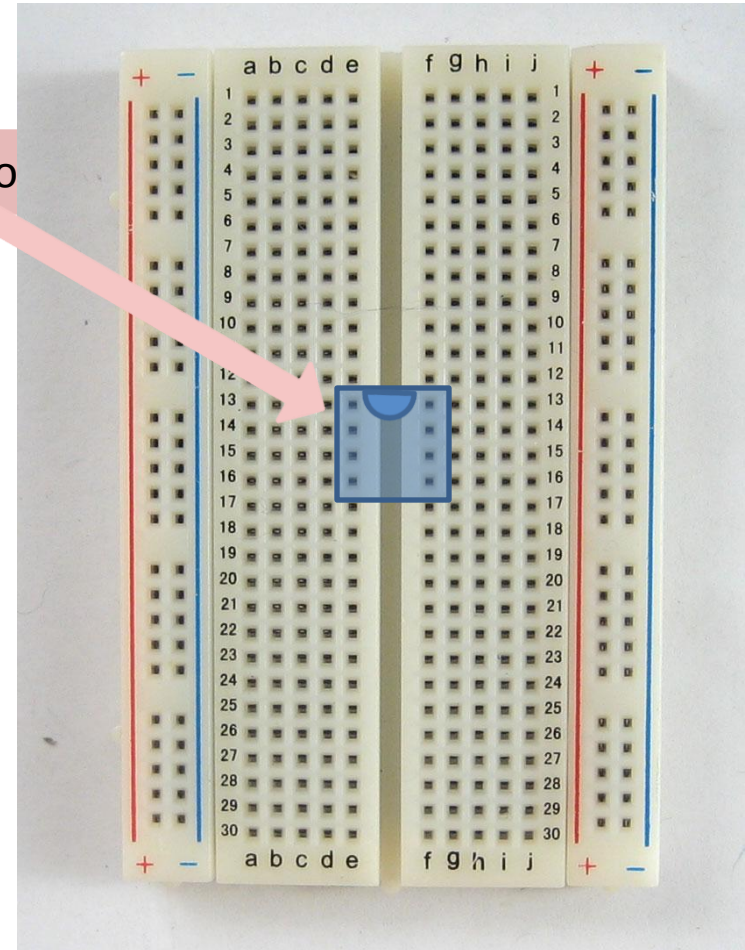


Getting Started

Pin numbers will usually start in the top left corner and go around an IC in a counter-clockwise fashion, but be sure to always check the datasheet

Put 555 timer in like so

Speaking of datasheets, now is a good time to familiar with them. Go look up “NE555 timer datasheet” . This will provide you with the pinout of the device



What are datasheets?

- Basically a datasheet is a guide to its component.
- Depending on the component, the datasheet could be 5 pages or it could be 5000 pages long.
- Sometimes contains code examples, or maybe circuit layouts, but always has a pinout of the component.

Lets get going!

- Alright so this workshop is set up around 4 different circuits, 3 of which are for the 555 timer.
- [Bibbity](#)
- [Bobbity](#)
- [Boop](#)
- And if you want others, check [this](#) out

Pick up some components and go!

- Each link has goes to a schematic and you need to assemble it.
- The schematic doesn't resemble where the pins are so that's why you need the datasheet.
- Notice that some common components will have different pin names depending on what company they are from. When this happens, make sure you look at the function of the pins in question.

When you are done with that..

- Go check [this](#) out.
- This circuit ditches the 555 timer and uses a SN74HC595N Serial-in Parallel-out shift register.
- The shift register can only take a max of 6V so voltage divider it down to 3.3V. If you don't have the right resistors, remember:

