Mega Tree Game Display

{youtube}3EUFjfwda4s{/youtube}

In previous years I have always setup a light show using a custom built light controller. However, setting up the lights on the roof was always a pain, and each year I ended up with less and less lights (since I am always interested in the building and not in the setting up part). Here is an example of the light show I had in previous years.

{youtube}TXnHjVarAHI{/youtube}

This year, I decided to make use of the controllable RGB light strips and create a display that I can change its content using software. This will allow me to leave the same display for Halloween, Hanukkah, Christmas, and New Year by just changing the program.

Since a light show is so "Last Decade" I decided to make an interactive game that you play by logging in with your smart phone. The game entails dropping gifts on houses and snowmans, but not trees. However, if you drop a present on the Grinch house (green), then the Grinch takes over Santa's slay and now you need to shoot him with hearts. I originally setup a button outside that people can press to play the game; assuming that people would walk. As it tunes out, most people like to just drive by and look at the display, so I made a smart phone interface (using nodejs) that people can log into and press the button. As a bonus I even found a band that created 8Bit Christmas music: http://rushcoil.bandcamp.com/

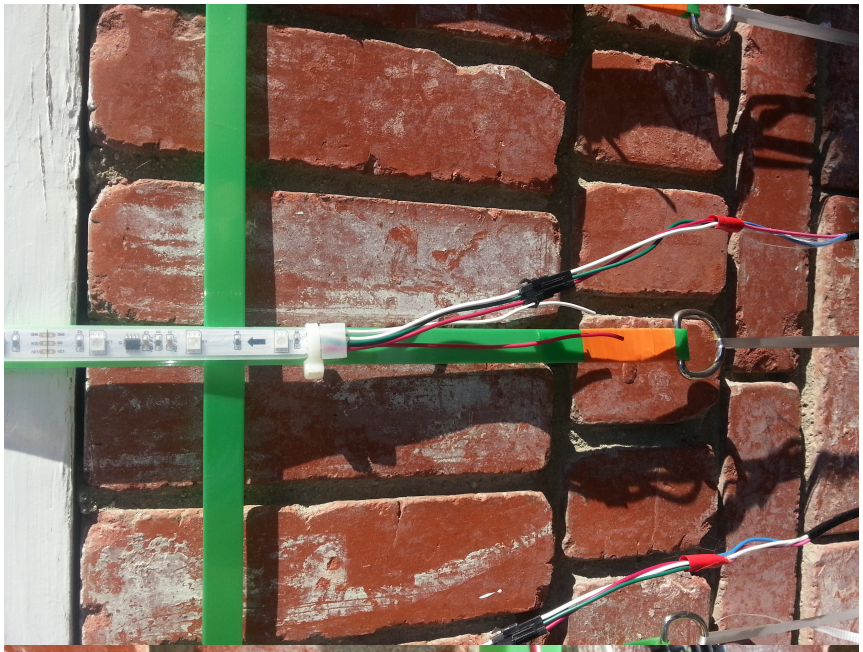
{youtube}3EUFjfwda4s{/youtube}

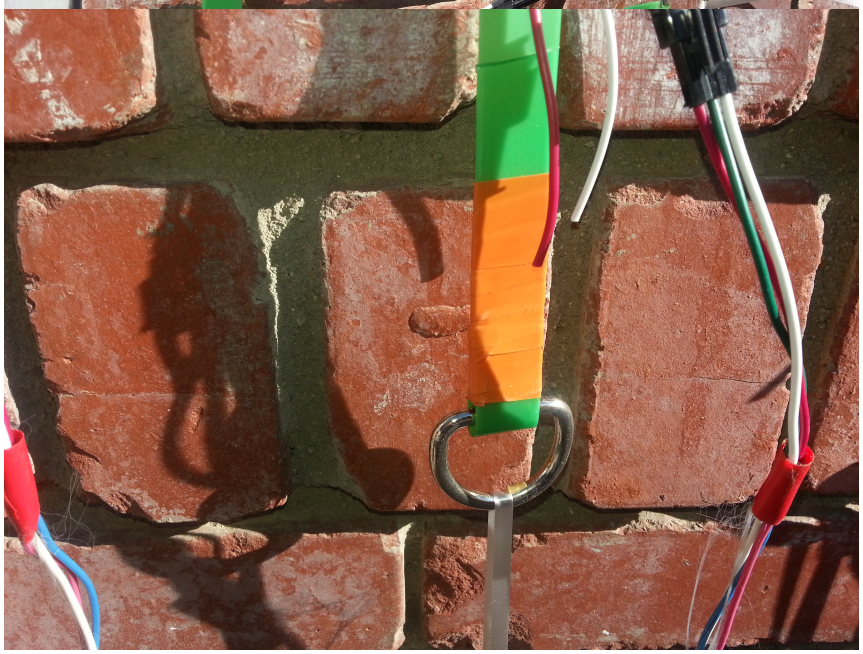
I have also created a Hanukkah display , in which a dreidel spins and stops randomly on a letter, as well as a menorah with a new candle for each day.

{youtube}oVaJLOykv9E{/youtube}

Building Instructions
MegaTree

The tree is made by attaching packaging straps (ebay) to two aluminium bars (Do it Center) using D rings and zip-ties.





Electronics

For the main controller I elected to use the Raspbery PI and a Teensy 2.0 for sending the required signals to the display. I originally used an arduino, but the USB connection was too slow to create high frame rates.

To power the whole thing I used 2 X 12V 30A switching powe r supplies for each 6 strips. However, I originally ordered a power supply that is rated for outdoor, but they were back ordered and would not get here on time. So instead I elected to use a tupperware to fit the whole thing in. For ventilation, I drilled many holes at the button of the container. It has rained a few times with no damage so far.

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