**PiTendo**

**Team Members:**

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**Description:**

We will modify an NES video game console and replace the internal hardware with that of the Raspberry Pi 3. It will run a freeware install called RetroPie to run and provide the user interface. We plan to keep some internal components intact and wire them to the Pi unit so the original power button and controller ports may be used. The game cartridge hole may be opened to display 4 USB ports that will allow players to plug in additional controllers of varying types. The Pi unit comes with Bluetooth support and will also communicate with newer game controllers that support Bluetooth.

If completed early enough, we will look to add additional flair to make the unit appear more pleasing to the eye or create a carrying case that will contain a screen and power supply for an “all in one” feature.

Regardless of the all in one idea, the Pi unit will be contained within a case (most likely an old NES unit) and people will be able to come up to the unit and test playing different games across multiple consoles. The openness of the emulation software will also allow us some modification freedom with the UI and we plan to change some of the code text as well if need be.

**Materials:**

Raspberry Pi 3 B

Power supply

Heatsinks

MicroSD  
USB and Bluetooth Gamepads  
USB Hub  
HDMI Cable

USB OTG Cable  
Micro USB Extension

Ethernet port extension

Audio/video port extension

USB Keyboard

Wires + resistors

Soldering equipment

Monitor/TV

Tools

Paint

Glue

**Sources/Inspiration:**

<https://www.emuparadise.me/Complete_ROM_Sets_(Full_Sets_in_One_File)_ROMs/Nintendo_Entertainment_System_(GoodNES_v3.14)/96326>

<http://www.pcworld.com/article/3190347/gaming/how-to-build-a-raspberry-pi-retrogaming-emulation-console.html>

<https://all3dp.com/1/raspberry-pi-nes-case-pi-3-nintendo-case-retropie/>

<https://retropie.org.uk/>

<https://www.youtube.com/watch?v=R2Peo5wX1NU>