

# Proposal: Infinity Controller

se101-f18-group-a34hu-ab2asad

## What it will do:

- The Infinity Controller has two components: the gauntlet and the joystick
- The gauntlet consists of a glove with force sensitive sensors (FSR) on the fingertips that will act as buttons
- The joystick rests on a platform that houses the electronics
- A cable will connect the gauntlet to the raspberry pi
- The Pi will emulate a full Nintendo 64 emulator that will be broadcasted to an external display

## Major software components:

- Emulates the Nintendo 64 System on a Raspberry Pi
- Communication between the controller and Raspberry Pi
- Interfacing the joystick with the Raspberry Pi
- Connect wirelessly to an external display (wireless HDMI cable)
- Loading up the retropie on the Raspberry Pi
- Curating a list of old games that can be played on the system (given our controls)

## Prototype plan:

- Goal: Create a functional controller that can play Pokemon on the raspberry pi
- Evolutionary type: We intend to keep our prototype and expand what it can do later
- Horizontal type: Ensure each subsystem works before honing in on one part
- Steps along the way:
  - Use a shoebox to house the raspberry pi, breadboard, and electronics
  - Connect joystick and glove with sensors to electronics in the box
  - Install retropie with Pokemon and translate controller input to game input

## Hardware Required:

- |                                   |                 |
|-----------------------------------|-----------------|
| • Shoebox/plastic container       | • Ribbon cables |
| • Raspberry Pi                    | • Breadboard    |
| • Force sensitive resistors (FSR) | • HDMI cable    |
| • Joystick                        | • Glove         |
| • External display                | • SD Card       |

## Anticipated Challenges:

- Correctly setting up and soldering connections for FSRs and joystick to send input to the raspberry pi
- Making the input from the controller to be understood by the game emulator
- Inexperience with electronics in general; a learning opportunity