CPSC 334: Creative Embedded Systems, Lab 6 Practical Application

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Wireless Ambient Light Sensors

General Description:

Configure system to wirelessly send ambient light sensor data from the ESP32 to the Raspberry Pi via UDP message over WiFi. Configure the Pi to visualize or sonify the data in some 1:1 way. Once the message arrives on the Pi as a UDP packet you will need to process it with some language - possibly repackaging it as an OSC message. This is a low-latency application.

The attached code allows you to send UDP packets after setting up the ESP32 as an access point.

Basic Configuration:*

HW:	photoresistor	→	ESP32	→	Wifi	→	Processing	/	SC3
SW:			~~OSC~~ UDP				oscP5 netP5		OSCdef OSCFunc

Required:

1) IP address of ESP32 and Pi
2) Expected Ports for Processing/SuperCollider/Whatever

Advanced Configuration:

Add Joystick and visual/aural component for XY Axes

Print your ESP32 MAC Address (to register on Yale network):

```
#include "WiFi.h"

void setup(){
  Serial.begin(115200);
  WiFi.mode(WIFI_MODE_STA);
}

void loop(){
  Serial.println(WiFi.macAddress());
  delay(500);
```

```
    }
```

*There is a gotcha with this configuration you must remember (from the datasheet/online/class)...