

M5 Pong Presentation

CS M119
Emily Vainberg

Right Player - Arduino

Use M2 Project to turn on bluetooth for Arduino

- UUID Service: 1108
- Accelerometer X: 7108



The screenshot shows the M2 Project IDE interface. At the top, the project name is "streamIMU_proj2" with an "UPGRADE PLAN" button. Below the project name, there are icons for a checkmark, a right arrow, and a menu. The selected board is "Arduino NANO 33 IoT" with the port "/dev/cu.usbmodem141101". The file "streamIMU_proj2.ino" is open, and the code is displayed as follows:

```
1 #include <ArduinoBLE.h>
2 #include <Arduino_LSM6DS3.h>
3 #include <WiFinINA.h>
4
5
6 #define BLE_UUID_ACCELEROMETER_SERVICE "1108"
7 #define BLE_UUID_ACCELEROMETER_X "7108"
8 #define BLE_UUID_ACCELEROMETER_Y "2102"
9 #define BLE_UUID_ACCELEROMETER_Z "2103"
10
11 #define BLE_DEVICE_NAME "Elfo"
12 #define BLE_LOCAL_NAME "Elfo"
13
```

Right Player - Arduino

In central.js: discover arduino services

```
const uuid_service1 = "1108" - UUID
```

```
const uuid_value1 = "7108" - X value
```

```
noble.on('stateChange', async (state) => {
```

```
  if (state === 'poweredOn') {
```

```
    console.log("start scanning")
```

```
    await noble.startScanningAsync([uuid_service1], false, config);
```

```
  }
```

```
});
```

Right Player - Arduino

In index.ejs: move right player based on X value of sensor data

Additional Functionality: When the arduino is not moving (choose this to be sensor values between -0.3 to 0.6) then the right player stops and does not move

```
xmlhttp.open("POST", SERVERADDRESS, true)
xmlhttp.setRequestHeader("Content-type", "application/json")
xmlhttp.send("")
if (sensorValue1 > 0.6 ){
    if (rightPlayer.positionY > 0) {
        rightPlayer.positionY -= rightPlayer.speed;}}
else if (sensorValue1 < -0.5 ){
    if (rightPlayer.positionY < canvas.height - rightPlayer.height) {
        rightPlayer.positionY += rightPlayer.speed;}}
```

Left Player – Computer Keys

In index.ejs: adds event listener to check if up or down arrow is pressed

```
document.addEventListener('keydown', (event) => {  
  var name = event.key;  
  var code = event.code;  
  if (code === 'ArrowUp') {  
    keyPressed['Up'] = true; }  
  if (code === 'ArrowDown') {  
    keyPressed['Down'] = true;} }, false);
```

Left Player - Computer Keys

In index.ejs: moves the left player if up or down is clicked- called every second

```
function updateKeyPresses() {  
  if (keyPressed['Up']) {  
    if (leftPlayer.positionY > 0) {  
      leftPlayer.positionY -= leftPlayer.speed;}}  
  if (keyPressed['Down']) {  
    if (leftPlayer.positionY < canvas.height - leftPlayer.height) {  
      leftPlayer.positionY += leftPlayer.speed;}}}
```

Final Product

