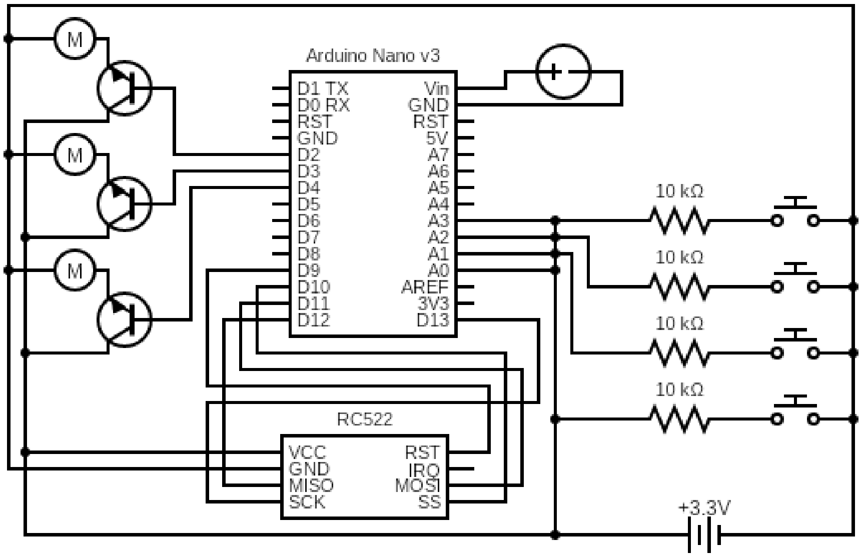
Voodoo Management Controller Tech Doc

The controller components list:

1.	Arduino Nano 33 BLE sense rev2	* 1
2.	Buttons	* 4
3.	10K Resister	* 4
4.	NPN Transistor	* 3
5.	Vibration Motor	* 3
6.	RFID Senser RC522	* 1

Circuit Diagram



Arduino Driver API

The controller uses built in BLE to communicate with the game. It has three characteristics: RFID, ButtonSound, Motor.

RIFDCharactersic: Passes 4 bytes data. When read a new RFID card, it passes the card’s UID.

ButtonSoundCharacteristic: Passes unsigned int data. When read a button signal went low, it passes its ID in binary form. When read a sound signal, it passes 6 as ID in binary form. For example, if both button1 and sound senser were triggered, it passes 0b10001.

MotorCharacteristic: Receive a unsigned short data. The game will pass an ID of which motor need to trigger for half a second.

In-game Driver API

The In-game driver uses SimpleBLE(https://github.com/OpenBluetoothToolbox/SimpleBLE) as a thrid party plugin to process BLE.

To use the driver, simply put the ArduinoBLEParser in the scene and fill the config file name. The driver will automatically connect to the Nano 33 and receive the data. To receive the data from Arduino, implement the BI_ArduinoInput in the blueprint and use AddToReceiveInputList function to register.

The BI_ArduinoInput contains Events for receive inputs.

The config file is a Json file that contains a map from UID to employee ID and a Bool that tells the controller to enable its vibration function. Here is an example.

```
{
    "UID": {
            "012E4503": "Manager",
            "014C4503": "HR",
            "01950503": "EntryLevel",
            "01A74503": "Associate",
            "01164B03": "Senior",
            "01FB4B03": "MidLevel"
        },
        "Vibration": false
}
```