Start: Getting Coding with MiiA

Introduction

At this stage you should have MiiA bot fully assembled and ready for programming. If you are a beginner this guide will help you set things up and get you started quickly.

 MiiA uses an easy to program **drag and drop system** which has been developed by LOFI Blocks (http://www.lofiblocks.com/code/). The drag and drop system uses Bluetooth to communicate with the MiiA bot. Lofi Blocks allows you to program your robot using an App (android or IOS) or through chrome with use of a chrome extension. The process of setting MiiA bot up is explained in the steps below:

Step one: Downloading the Arduino platform

This is the programming platform that is used to load the Lofi firmware/brain code with the microcontroller. The Arduino IDE or platform can be downloaded here: https://www.arduino.cc/en/Main/Donate

Step two: Downloading the LOFI code from our website

Next the code/firmware that enables the LOFI system to communicate with the MiiA bot needs to be downloaded here: https://github.com/RD-9/miia_bot

Note: *There is firmware code that is available on the LOFI Blocks website, however this will not work with MiiA. Therefore please download the code from the link above.*

Once open it may seem a bit overwhelming. Please don't be alarmed, at this point you do not need to understand what is going on in the code, all that needs to be done is to upload this code to the microcontroller.

Step three: uploading firmware to the microcontroller

The next step is to upload or flash the code onto the microcontroller board. To do this open the code which was downloaded and plug in the board using the USB cable provided (make sure the switch is off).

Next we want to choose the correct port and microcontroller. In the downloaded Arduino platform go to:

Tools -> board -> Arduino Nano

The next step is to check the port which has been assigned to the Arduino board. This is done by going to:

Control panel -> device manager-> Ports (COM & LPT)

In this drop down menu, the port number that the microcontroller is connected to can be seen. Go back to the Arduino IDE and navigate to:

Tools -> Port-> *pick the port which is connected to the board*

The code is now ready to be flashed onto the board.

 Click the upload key (arrow pointing right) and wait for the program to complete the upload process.

Congratulations. The code is now on your board and is now ready to use. Disconnect the USB cable and switch on the robot at the switch.

Step four: Pairing with the Bluetooth module

The next step is to pair the Bluetooth module to your computer. To do this make sure that the robot is on and that the Bluetooth module chip is flashing. Go to **Bluetooth & other devices**. Wait for the Bluetooth module to be detected, the name will be HC-06. Click pair with this device. If prompted for a password use 1234 or 0000. Once the module is paired you are ready to move on to the next step.

Step five: Setting up coding environment with chrome

The next step is to connect with the LOFI coding environment with chrome. First go to the coding website here: http://www.lofiblocks.com/code/.

Before you will be able to use the chrome platform the LOFI Blocks chrome extension needs to be downloaded. This can be found here: https://chrome.google.com/webstore/detail/lofi-robot-extension/opdjdfckgbogbagnkbkpjgficbampcel?hl=en

Download and install the program.

Once installed run the program. With the computer still paired with the Bluetooth module, follow the same process as before to check the port the Bluetooth module is connected to. Choose this serial port in the drop down menu of the Lofi code extension and click connect.

In the Chrome code editor the robot head should now have a ring around it. If that is the case, you are now ready to start coding.

Work through the exercise sheets found here https://github.com/RD-9/miia_bot

Happy Coding! ☺