**Intro**

The initial guides assume only a little knowledge of programming and the ability to google the crap out of any issues you face. I’ve tried to test this guide adequately enough for it to work if the instructions are followed exactly.

Instructables guide (amazing website and guide) used to get everything started:

<http://www.instructables.com/id/Autonomous-AR-Parrot-Drone-20-Flying/step2/Node-JS/>

NodeJS is…

NPM is…

**Install NodeJs**

Install latest NodeJS (‘v6.7.0 Current’ at time of writing) from here:

<https://nodejs.org/en/>

DEFAULT Installs to C:\Program Files\nodejs\

*I cocked up here, installed it into the default location above and tried running it in my own drone folder on the desktop. It had no idea what was going on so uninstalled node completely and reinstalled in it’s own folder within the drone folder (Desktop/drone/nodejs)*

*MY install location C:\Users\Mark\Desktop\Drone\nodejs\*

Ran npm install ar-drone to get hold of Felixge’s node library for controlling the drone

* hold left-shift and right click inside nodejs folder to be given the option to open command window in that location
* now type npm install ar-drone as the guide says
* ignore warnings that pop up in command line window

**Connect to Drone**

Connect to drone wifi (ardrone2\_062272 in my case), I used a USB wifi adapter for this (using desktop computer rather than laptop this time around!) This sort of thing should do the trick:

<https://www.amazon.co.uk/TP-LINK-TL-WN725N-150Mbps-Wireless-N-Adapter/dp/B008IFXQFU/ref=sr_1_2?s=computers&ie=UTF8&qid=1475758246&sr=1-2&keywords=usb+wifi>

When connected by Wifi – it will say ‘No internet, open’ regarding the connection to your drone, if on Win10 like me. This is fine.

**Running NodeJS and manually controlling drone (takeoff and land)**

Once on Wifi of drone, locate node program on your computer, ‘…\nodejs\’ as mentioned above, double-click green/grey node.exe icon to open the NodeJS terminal window (similar to windows command line.

Node will be your means of sending commands to the drone and receiving any outputs back (such as video feed using ffmpeg which will be described later).

Type in the commands shown in the instructables guide one by one, making sure each line ends with a semi-colon ‘;’ pressing enter before the next line. **Note:** copy the final (‘client.land();’) command before pressing enter on the takeoff command! I.e. copy and paste each command line by line from the guide into the nodejs terminal window using right-click then copy, right-click then paste making sure to copy the final ‘land’ command before pressing enter on the takeoff command, just in case you need to stop the drop quickly without risking your fingers!

As the instructable guide says, you should now have the ability to let the drone hover a few feet off the floor until you enter the ’client.land();’ command.

**Running commands as a simple, repeatable JavaScript program instead**

For this I installed Notepad++ as this is a fantastic, free and simple text editor (like notepad), that comes equipped with code assistance which will help us visualise the structure of our simple program.

Notepad++ <https://notepad-plus-plus.org/download/v7.html>

Enter the lines as shown in Step 5 of the instructables guide, apart from line 5 ‘client.land();’. The author accidentally kept this line in, running this program without removing this line will result in the drone being told to takeoff and land straight away without any time inbetween (not very exciting!). Enter the program as shown below then save the file as something like firstflight.js in the same folder as your node.exe application (…/nodejs).

var arDrone = require('ar-drone');

var client = arDrone.createClient();

client.takeoff();

client

.after(5000, function() {

this.land();

});

Now to run this program you need to open the windows command prompt in the location of your firstflight.js file and enter the following command – *node firstflight.js*

**Note:** if your drone just sits on the ground with its lights flashing, it is likely you’ve got a nodejs window open somewhere, make sure all nodejs windows are closed! The above command calls node and tells it to run a particular program - n*ode firstflight.js* essentially means “computer, I want you to use a program called node [node.exe as we know it] to run a JavaScript program called firstflight.js, simple as that!

**Another note:** I asked you to open command prompt in the directory of the firstflight.js program you wrote, this isn’t mandatory, it just saves you having to type out the whole path to your program like *node C:\Users\Mark\Desktop\Drone\nodejs\firstflight.js* – that would be a pain to enter every time compared to *node firstflight.js*!

**Adding more commands in JavaScript**

Made a second JS file called secondflight.js (copied and renamed firstflight.js). Now going to fiddle ith the following commands as described in the Instructables guide:

* up(speed) - has the drone gain altitude at a speed between 1 (max speed) and 0 (still).
* down(speed) - makes the drone reduce altitude
* clockwise(speed) - drone spins clockwise
* counterClockwise(speed) - drone spins counter-clockwise
* front(speed)/back(speed) - changes the pitch causing horizontal movement
* left(speed)/right(speed) - changes the roll causing horizontal movement
* stop() - keeps the drone hovering in place