Balancing Robots guide for the hands-on experiences



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• Instructions for installing the software

go to https://github.com/justinlsquire/BalancingRobotsProject, it should look like this:



download the software by clicking the "clone or download" button:

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in any folder you prefer, then unzip the downloaded file

open the unzipped file (sometimes called also "repository") in your file explorer:

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go to the "Arduino" folder, then the "libraries" folder, then highlight and *copy* the two folders called "MINSEG_V2" and "SEG_CONTROL":

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Documents

go to your Arduino Libraries folder (note that the default location for Windows is Documents \mapsto Arduino \mapsto Libraries) and paste the two folders there

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go back to the GitHub repository folder BalancingRobotsProject \mapsto Arduino \mapsto Minseg_test_M2V5, and then open the "Minseg_test_M2V5.ino" file in Arduino



go to Tools → Board and select "Arduino/Genuino Mega or Mega 2560"

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go to Tools \mapsto Port and select the COM port associated with the MinSeg you plugged in via the USB port (If you unplug the MinSeg and check this Port field again, you should see one missing...This is the port that you should select when you plug back in the MinSeg)

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//#include <MINSEC.h> //MinSeg XAV5 #include <MINSEC_V2.h> //platform-independent control and estimation library #include <SEC_CONTROL.h>

// create object for the robot (either Minseg or Balboa)
// but it must be called 'robot' for the code to work correctly
//Balboa robot:

Click the "Upload" button to load the code to the MinSeg



Check that, depending on your hardware, the connections with the motor are as in figure (1/2):



Check that, depending on your hardware, the connections with the motor are as in figure (2/2):



Hold the Robot upright and make sure the switches are set to "ON", "BATT", and "ON" from the top down - the robot should start balancing if everything went well!