# How to Operate Your Robot

The tour

The robot will look similar to the one

on the right. The large black square is the processor, where the programs are stored and executed. There is also an LCD display. Underneath the robot are 5 optical sensors (these are used for following lines: see if you can spot them) and in the middle are the batteries and motors. If you need to recharge the robot use the plug to the right of the smaller circuit board.

Use this port
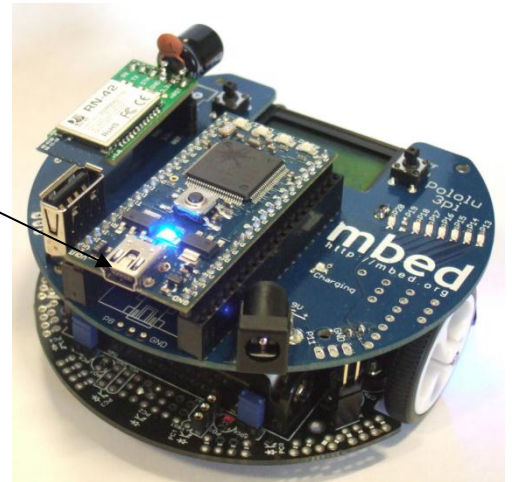
Getting it working

Now, to program the robot, you will need to be signed in online. If you are reading this, you should already be signed in. Click on the "import library" and "import program" for the m3pi library and hello world main.c source code. It should then open your compiler for you with the imported program. This will test that the compiler, mbed and robot are all working fine, and will allow you to go on to the next bit. Once you have this part working, look through the programming basics worksheet and try to understand how the code works. Ask a demonstrator if you're not sure.
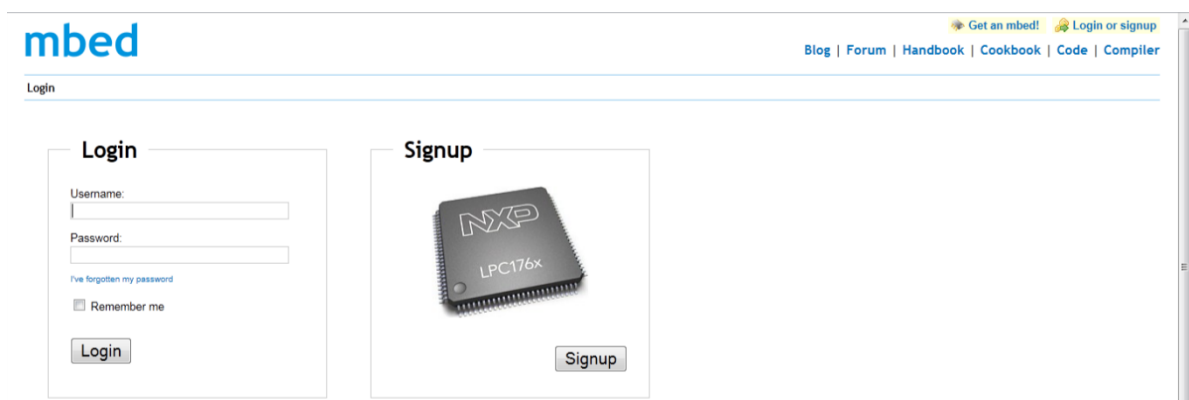
Once you have imported the program code to your compiler (http://mbed.org/compiler, remember you must be signed in by this point). Look for the hello world program on the left hand side. Below is a picture of where you will find it in the compiler. Open in the window is the hello world program, this will get the robot to move and show that it is responding to being programmed. You can use this program to check the robot is working.
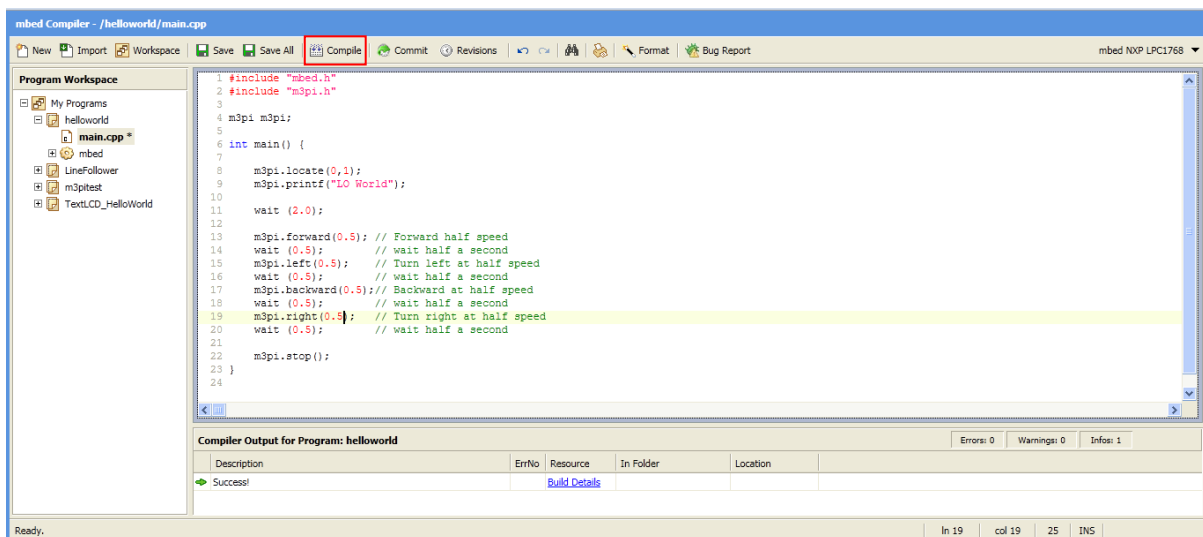
To load the program onto the robot, simply press the compile button (in the red rectangle above). The computer will give you an option to save the program, and you must click yes. After that, switch off your robot and connect it to the PC using an USB cable. Then copy and paste your program to your mbed driver, which appears as a FLASH memory in your computer. After the program is saved in your mbed, you can unplug the robot, put it on the ground and turn it on. It will run the latest program saved to it, which in this case will be hello world.

Once you have got the robot working you can start having some fun! Try changing some of the numbers in the program, reload it and see what that changes in the robots behaviour. As you get more confident, try changing some of the functions used or their order.

Once you have got the hang of this, it is time to program the robot to do something else!

In order to understand the code better, a reference of basic program is provided.