

## Detailed Work on LEGO NXT

The NXT device we received came with the LeJOS firmware, which is completely different from the original LEGO firmware. One should not refer to the LEGO NXT 2.X programming manual, but instead need to consult the LeJOS documents.

To make use of LeJOS, we first need to make sure that Java environment is set up by installing JDK/JRE. The LeJOS NXJ driver is also essential. With that, one can now compile Java source files and upload program to NXT through command line.

Eclipse makes it easier to program, compile and upload. LeJOS add-on, the link to which is provided below, is needed to do the work. It's worth noticing that the 32-bit version of Eclipse should be used even if the operating system is 64-bit. Otherwise, a connection error will occur when trying to upload program to NXT. Also, it's suggested that one uses USB cable for connection between NXT and computer, since Bluetooth requires additional library and configuration.

After all these setup, it's fairly easy to communicate between computer and NXT. One simply has to make sure that the NXT device is turned on and connected to the computer, and just need to press the "Run as LeJOS app" button in Eclipse. The program will then be compiled and uploaded to NXT, which will execute the instructions written in Java in Eclipse.

A more detailed explanation can be found with the following links:

LeJOS main page: <http://lejos.sourceforge.net/>

LeJOS NXJ driver download: <http://lejos.sourceforge.net/nxj-downloads.php>

LeJOS add-on for Eclipse:

<http://lejos.sourceforge.net/nxt/nxj/tutorial/Preliminaries/UsingEclipse.htm>

General NXT library: <http://lejos.sourceforge.net/rcx/api/index.html>