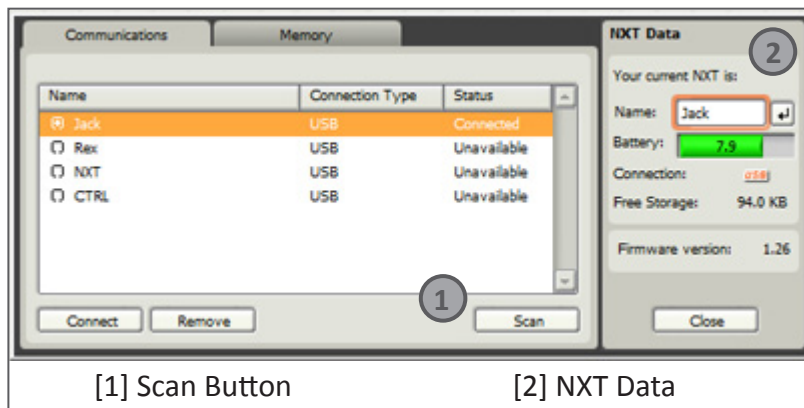


## Setting Up Your Brick

You will be communicating to your brick through the Lego Mindstorm NXT Programming software, which we will cover more in depth in a later chapter. For now, we are just going to talk about accessing the memory of the NXT Brick.

1. Open the NXT Programming Software
2. Start new program (or open an existing document)
3. Connect your brick to the computer using the USB Cable
4. Click the upper left button of the controller



[1] Scan Button

[2] NXT Data

You will see this window in the communications tap come up. If your robot is connected, it should be in the list with a status of “Connected.” If not, just hit the scan button (1).

Once connected, you can see the NXT Data (2). This includes name, battery, memory available, and the firmware version. The following few sections will talk about how to

manage the NXT Data, and update the firmware, and reset the memory.

## Naming your Brick

Because they all start with the name NXT, in order to use Bluetooth withing a large group, say the IT-Olympics competition, your robot needs to have a new name. To do this, you go to the NXT Data and where it says Name, you just type a new name in the text field. The name specified in the example is Jack.

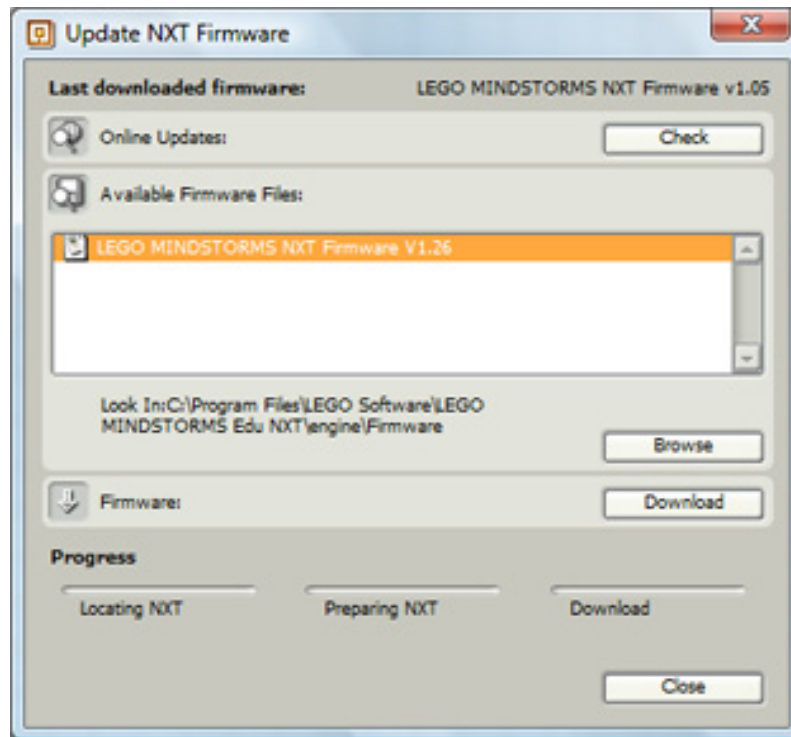
## Updating the Firmware

Firmware is software that is embedded in the NXT. Without its firmware, the NXT wouldn’t be able to control motors, take input from sensors, or basically work at all.

Occasionally, the LEGO Group may release new versions of the firmware that add enhanced functionality or fix discovered software bugs. By updating your NXT’s firmware to the most recent version, you can take advantage of the latest technology and improve your NXT’s performance and reliability. However, the system files will be reset and the user files will be lost, so it

may be a good idea to back up anything you don't want to lose before you begin updating. See "Managing Memory..."

First, choose Update NXT Firmware... in the Tools menu. This will launch the Update NXT Firmware dialog box as shown below. **Make sure to turn on and connect your NXT.**



If you are online you can check if new firmware updates are available by pressing the Check Online Updates button. Select the most recent firmware version and make sure to record where the retrieved firmware will be saved. We recommend these locations:

**For Macintosh:** Macintosh HD:Applications:LEGO MINDSTORMS NXT:engine:Firmware

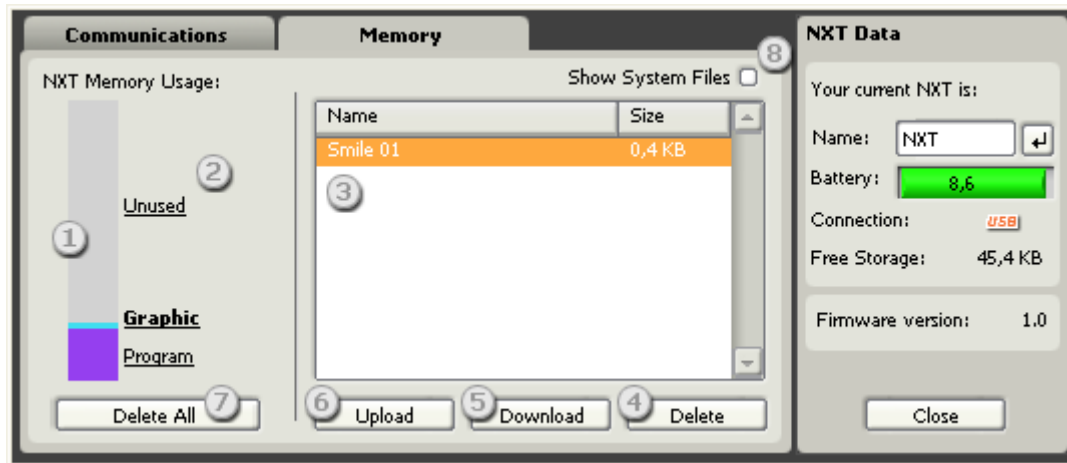
**For Windows:** C:\Program Files\LEGO Software\LEGO MINDSTORMS EDU NXT\engine\Firmware

When the retrieval is complete, the new firmware will be ready to install. If you retrieved the firmware file to the above path, you can simply select the file from the list and press Download. The progress bar at the bottom of the Update NXT Firmware window will show you how the download to your NXT is proceeding.

If you retrieved the firmware file to a different location, click the Browse button to browse to the folder where you saved the firmware. You can then begin to download the saved firmware to your NXT.

## Managing Memory

The memory tab of the NXT window provides a graphical overview of memory usage on your NXT. From here you can also send programs, sounds, graphics and other files to your NXT from a PC, and copy and delete files that are already on your NXT.



- [1] A graphical overview of used and available memory.
- [2] The different file categories (programs, sounds, graphics, other...) that take up the NXT's memory. Clicking on a category name will display these types of files in the list.
- [3] A list of files in the currently selected category.
- [4] Delete. This button deletes any selected files from the NXT.
- [5] Download. This button will download files from your PC to the NXT.
- [6] Upload. This button will copy any selected files from the NXT to your PC.
- [7] Delete all User Files. This button deletes all user files and cleans up the NXT's memory.
- [8] Show System Files. Checking this box will reveal all factory-installed files on the NXT.

## Running Out of Memory

If you run out of memory you can delete some or all of the files on your NXT. To do this, examine the memory overview graphic to the left (1) and identify which types of files take up most memory. Click that category name (2) and its files will be displayed in the list. Select the files you don't need in the list and click the Delete button.

## Deleting Files

You can erase all of your created files and clean up the NXT's memory by clicking the Delete all User Files button. This will delete all of the files you have ever sent to the NXT and re-organize the memory to leave the maximum amount free for new files. Doing this will not delete any of the system files that were pre-loaded in the NXT at the factory. You can also delete files using the icons on the NXT itself.

If deleting your user files does not free up enough memory, you can also delete the demo and example files that came pre-loaded in the NXT. These files are referred to as system files and take up around 62 kilobytes. The system files include the start-up and other sounds as well as the demo and Try Me programs.

You can always restore the NXT device's memory back to factory default condition (with all of the system files) by restoring the firmware. See "Restoring an NXT's memory..." below.

To delete system files, check the Show System Files box (8). Then select a file category (2) and choose the system files you want to remove (3). Click Delete for each file you want to erase from memory.

By deleting system files you will free up memory but at the same time also remove features from the NXT. However, you cannot "break" the NXT by deleting system files. For more on what each of the system files do - visit the online help tool accessed through the help menu in the NXT programming software.

## Restoring An NXT's Memory Back To Factory Default Condition

You can restore an NXT's memory back to factory default condition by re-installing the NXT firmware. For details on this operation, see "Updating the Firmware." Be aware that re-installing the NXT firmware will delete all files in the NXT's memory -- make sure to make a back up of any personal files you want to keep before proceeding.

## Copying And Backing Up Files Stored On The NXT

To make a back up copy of your personal files or to share files stored on the NXT with friends, you should copy the files off the NXT to your PC.

To do this, first select the file category (2) for the files you would like to back up or share. Select the desired files in the list (3) and click Upload (7). Finally, select the folder where the files will be saved on your PC and click OK.

To send a file back to the NXT, click the Download (5) button. Select the file you want to copy from your PC and click OK.