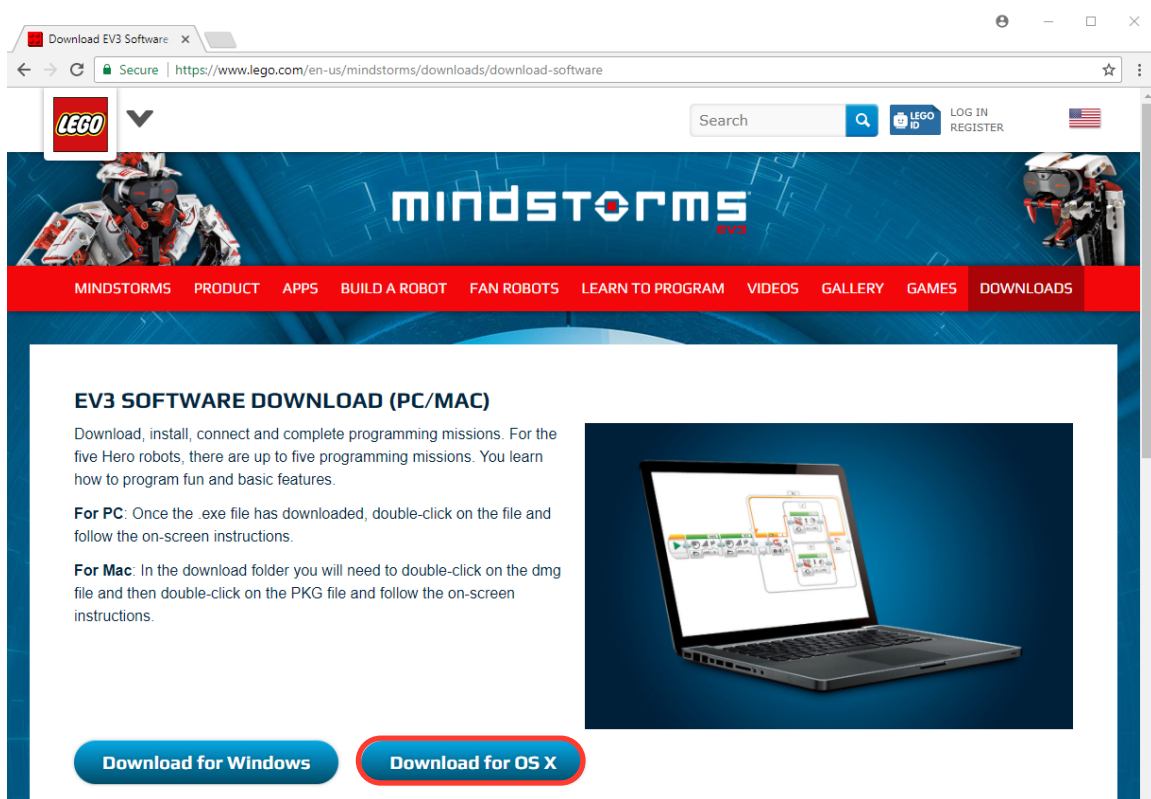


# Tutorial on how to install and run Java on Lego Mindstorms EV3 using Eclipse on MAC OSX

## 1. Download the Mindstorm Software

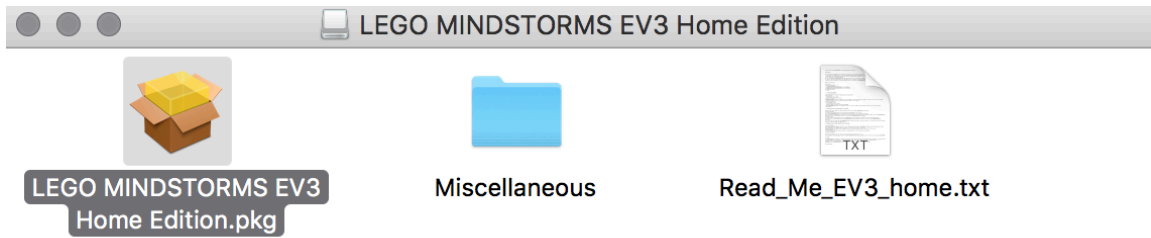
<https://www.lego.com/en-us/mindstorms/downloads/download-software>

You will need the USB driver for your EV3 and the easiest way to install it is to install the complete EV3 Developer Software. This is LEGO's own software based on LabView. It is a graphical programming language and we will **NOT** be using it. We only need the USB driver that comes with it.



The screenshot shows a web browser window with the URL <https://www.lego.com/en-us/mindstorms/downloads/download-software>. The page features the LEGO logo and the Mindstorms EV3 branding. A navigation menu includes links for MINDSTORMS, PRODUCT, APPS, BUILD A ROBOT, FAN ROBOTS, LEARN TO PROGRAM, VIDEOS, GALLERY, GAMES, and DOWNLOADS. The main content area is titled "EV3 SOFTWARE DOWNLOAD (PC/MAC)" and provides instructions for downloading and installing the software. It includes a section for PC users and a section for Mac users. Below the text is an image of a laptop displaying a graphical programming interface. At the bottom of the page, there are two buttons: "Download for Windows" and "Download for OS X".

Just double click on the installer to launch the process. You will not only have the easy to use programming environment, but also the driver installed.



## 2. Install Java

Check if you already have java installed: open a terminal in the search box. And then type `java -version`

```
bash
Last login: Wed Aug 23 18:28:23 on ttys000
[bash-3.2$ java -version
No Java runtime present, requesting install.
[bash-3.2$ java -version
java version "1.7.0_80"
Java(TM) SE Runtime Environment (build 1.7.0_80-b15)
Java HotSpot(TM) 64-Bit Server VM (build 24.80-b11, mixed mode)
bash-3.2$ █
```

### 2.1 Download & install version 7 of the Java Development Kit (JDK)

Visit <http://www.oracle.com/technetwork/java/javase/downloads/java-archive-downloads-javase7-521261.html> to download the version 7. You will need the JDK version. Oracle did already release version 8 of Java, but not yet for the EV3 brick. To build a proper Java project you need to build it for version 1.7. The catch is that the latest version of Eclipse requires Java version 8, which we will download and install next. You can have multiple version of Java installed on your computer without any problems.

**Java SE 7 Archive Downloads**

Go to the [Oracle Java Archive](#) page.

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java™ platform.

**WARNING:** These older versions of the JRE and JDK are provided to help developers debug issues in older systems. They are not updated with the latest security patches and are not recommended for use in production.

For production use Oracle recommends downloading the latest JDK and JRE versions and allowing auto-update.

Only developers and Enterprise administrators should download these releases.

Downloading these releases requires an oracle.com account. If you don't have an oracle.com account you can use the links on the top of this page to learn more about it and register for one for free.

For current Java releases, please consult the [Oracle Software Download](#) page.

For more information on the transition of products from the legacy Sun download system to the Oracle Technology Network, visit the [SDLC Decommission](#) page announcement.

**Java SE Development Kit 7u80**

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

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Product / File Description	File Size	Download
Linux x86	130.44 MB	<a href="#">jdk-7u80-linux-i586.rpm</a>
Linux x86	147.68 MB	<a href="#">jdk-7u80-linux-i586.tar.gz</a>
Linux x64	131.69 MB	<a href="#">jdk-7u80-linux-x64.rpm</a>
Linux x64	146.42 MB	<a href="#">jdk-7u80-linux-x64.tar.gz</a>
Mac OS X x64	196.94 MB	<a href="#">jdk-7u80-macosx-x64.dmg</a>
Solaris x86 (SVR4 package)	140.77 MB	<a href="#">jdk-7u80-solaris-i586.tar.Z</a>
Solaris x86	96.41 MB	<a href="#">jdk-7u80-solaris-i586.tar.gz</a>
Solaris x64 (SVR4 package)	24.72 MB	<a href="#">jdk-7u80-solaris-x64.tar.Z</a>
Solaris x64	16.38 MB	<a href="#">jdk-7u80-solaris-x64.tar.gz</a>
Solaris SPARC (SVR4 package)	140.03 MB	<a href="#">jdk-7u80-solaris-sparc.tar.Z</a>
Solaris SPARC	99.47 MB	<a href="#">jdk-7u80-solaris-sparc.tar.gz</a>
Solaris SPARC 64-bit (SVR4 package)	24.05 MB	<a href="#">jdk-7u80-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	18.41 MB	<a href="#">jdk-7u80-solaris-sparcv9.tar.gz</a>
Windows x86	138.35 MB	<a href="#">jdk-7u80-windows-i586.exe</a>
Windows x64	140.09 MB	<a href="#">jdk-7u80-windows-x64.exe</a>

[Back to top](#)

**Java SE Runtime Environment 7u80**

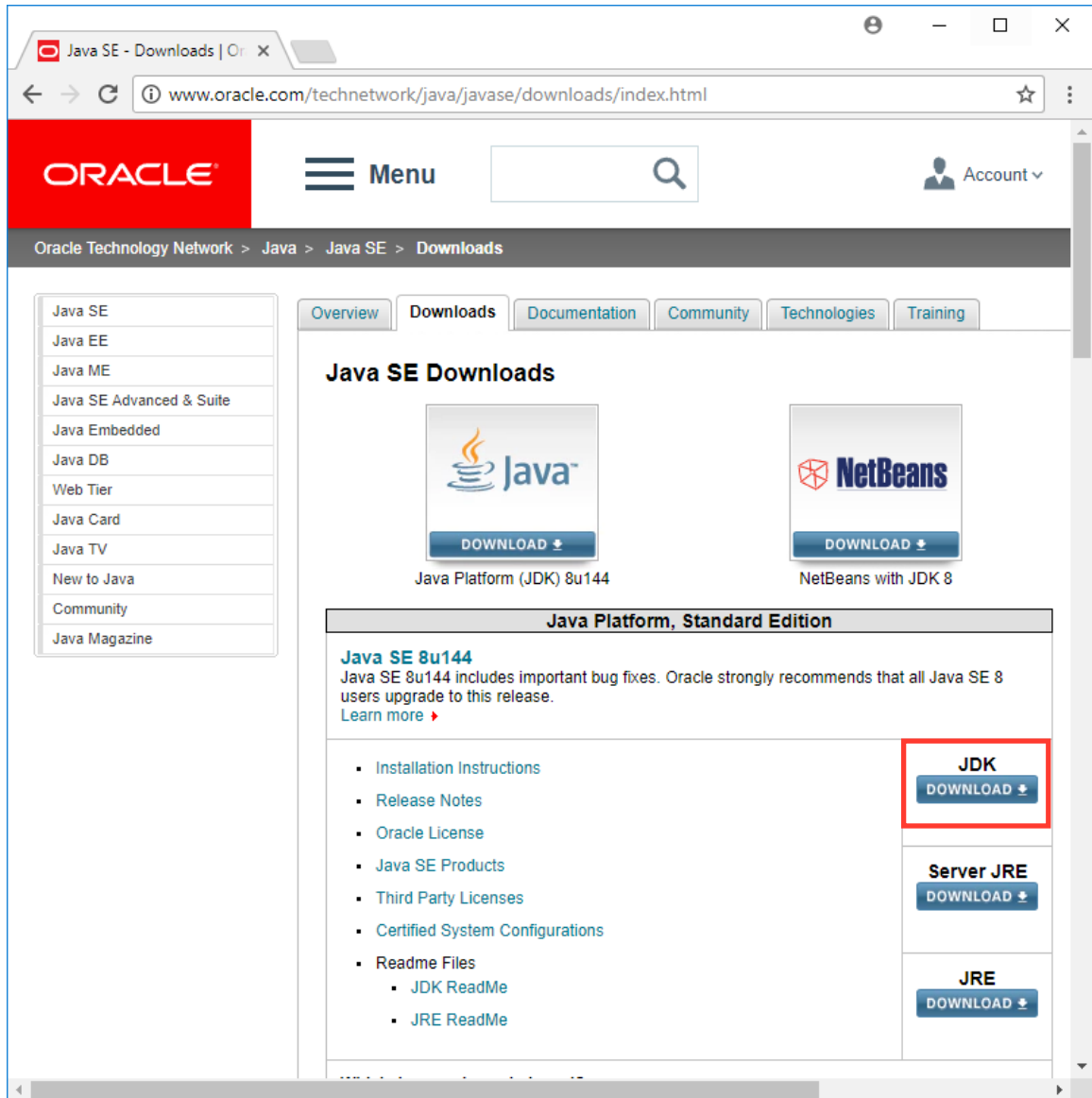
After downloading the DMG file double click it to mount the disk. A new window will appear with the JDK installer. Run the installer.



## 2.2 Download & install version 8 of the Java Development Kit (JDK) for Eclipse

You can skip this step if you already have java 8 (1.8) installed.

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>



The screenshot shows the Oracle Java SE Downloads page for JDK 8u144. The page is titled "Java SE Downloads" and features a navigation menu with options like Overview, Downloads, Documentation, Community, Technologies, and Training. The main content area displays two download options: "Java Platform (JDK) 8u144" and "NetBeans with JDK 8". Below these, there is a section for "Java Platform, Standard Edition" which includes a "Java SE 8u144" announcement and a list of links for installation instructions, release notes, and licenses. A red box highlights the "JDK DOWNLOAD" button, which is the primary download option for the JDK.

Oracle Technology Network > Java > Java SE > Downloads

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### Java SE Downloads

Java Platform (JDK) 8u144

NetBeans with JDK 8

#### Java Platform, Standard Edition

**Java SE 8u144**  
Java SE 8u144 includes important bug fixes. Oracle strongly recommends that all Java SE 8 users upgrade to this release.  
[Learn more](#)

- Installation Instructions
- Release Notes
- Oracle License
- Java SE Products
- Third Party Licenses
- Certified System Configurations
- Readme Files
  - JDK ReadMe
  - JRE ReadMe

**JDK**  
DOWNLOAD

**Server JRE**  
DOWNLOAD

**JRE**  
DOWNLOAD

Oracle Technology Network > Java > Java SE > Downloads

Overview Downloads Documentation Community Technologies Training

### Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK 8u144 checksum

**Java SE Development Kit 8u144**

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Accept License Agreement
  Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.89 MB	<a href="#">jdk-8u144-linux-arm32-vfp-hflt.tar.gz</a>
Linux ARM 64 Hard Float ABI	74.83 MB	<a href="#">jdk-8u144-linux-arm64-vfp-hflt.tar.gz</a>
Linux x86	164.65 MB	<a href="#">jdk-8u144-linux-i586.rpm</a>
Linux x86	179.44 MB	<a href="#">jdk-8u144-linux-i586.tar.gz</a>
Linux x64	162.1 MB	<a href="#">jdk-8u144-linux-x64.rpm</a>
Linux x64	176.92 MB	<a href="#">jdk-8u144-linux-x64.tar.gz</a>
Mac OS X	226.6 MB	<a href="#">jdk-8u144-macosx-x64.dmg</a>
Solaris SPARC 64-bit	139.87 MB	<a href="#">jdk-8u144-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	99.18 MB	<a href="#">jdk-8u144-solaris-sparcv9.tar.gz</a>
Solaris x64	140.51 MB	<a href="#">jdk-8u144-solaris-x64.tar.Z</a>
Solaris x64	96.99 MB	<a href="#">jdk-8u144-solaris-x64.tar.gz</a>
Windows x86	190.94 MB	<a href="#">jdk-8u144-windows-i586.exe</a>
Windows x64	197.78 MB	<a href="#">jdk-8u144-windows-x64.exe</a>

After downloading the DMG file double click it to mount the disk. A new window will appear with the JDK installer. Run the installer.

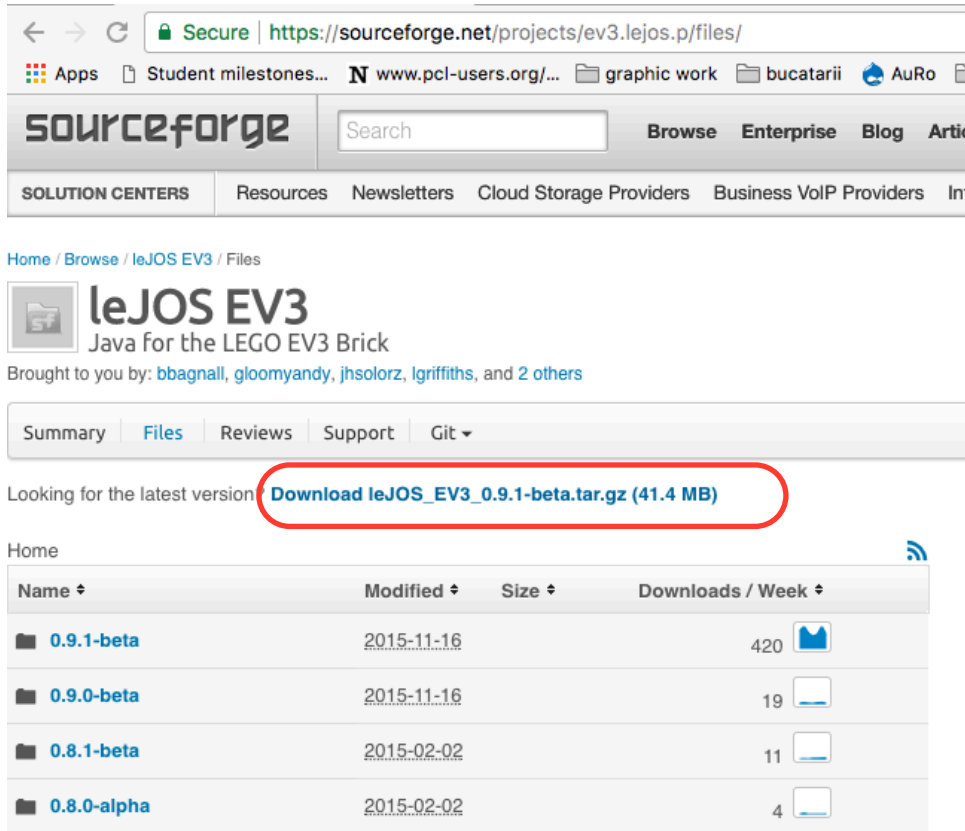


### 3. Install LeJOS

The heart of any EV3 Java project is LeJOS. Let's install it on your computer

#### 3.1 Download LeJOS

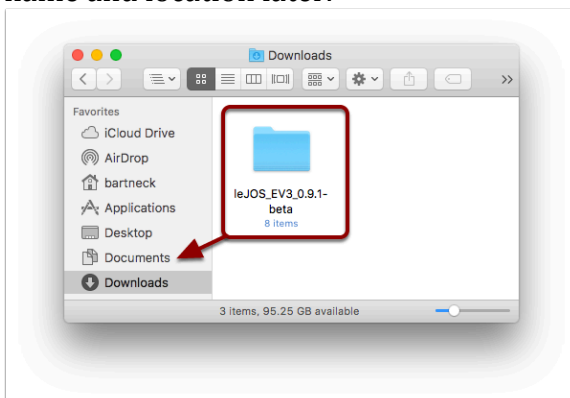
Visit <https://sourceforge.net/projects/ev3.lejos.p/files/> to download the latest version of LeJOS. Once the download is complete uncompress the file.



The screenshot shows the SourceForge project page for leJOS EV3. The page title is "leJOS EV3 Java for the LEGO EV3 Brick". Below the title, there are tabs for "Summary", "Files", "Reviews", "Support", and "Git". The "Files" tab is selected, and a link to "Download leJOS\_EV3\_0.9.1-beta.tar.gz (41.4 MB)" is highlighted with a red circle. Below this, there is a table listing the available versions of the software.

Name	Modified	Size	Downloads / Week
0.9.1-beta	2015-11-16		420
0.9.0-beta	2015-11-16		19
0.8.1-beta	2015-02-02		11
0.8.0-alpha	2015-02-02		4

Do not leave LeJOS in the download folder. Move it to a permanent location, such as your Documents folder. I renamed the folder to "leJOSEV3" since we will need its name and location later.

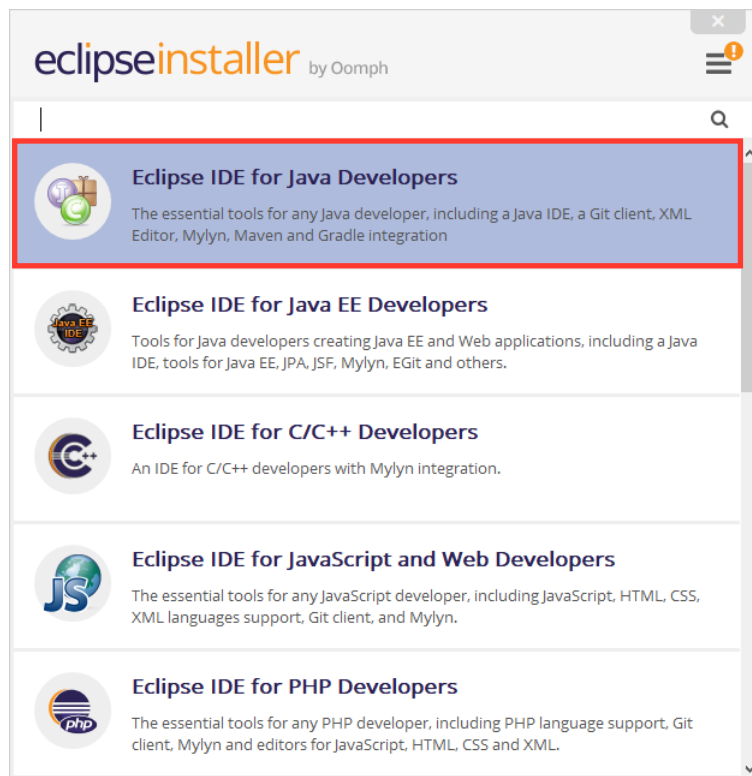
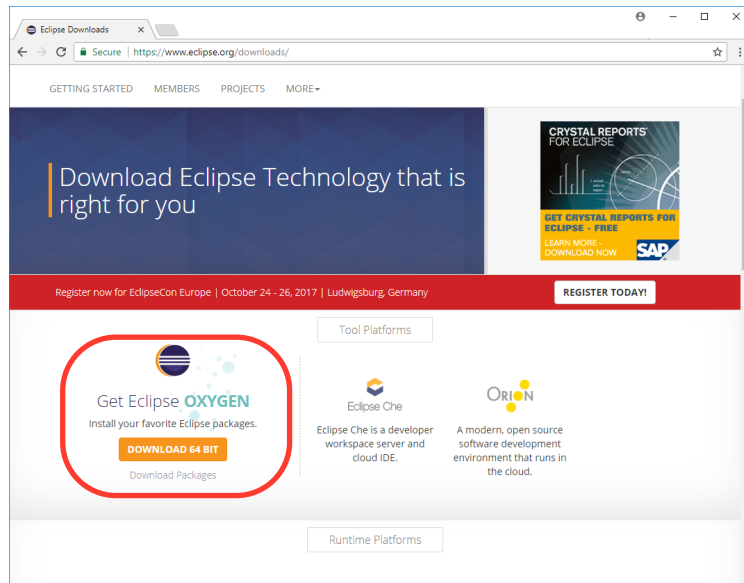


## 4. Install Eclipse IDE

The Eclipse Integrated Development Environment is a great software editor for your Java projects. It is free and open source.

### 4.1 Download the Eclipse IDE

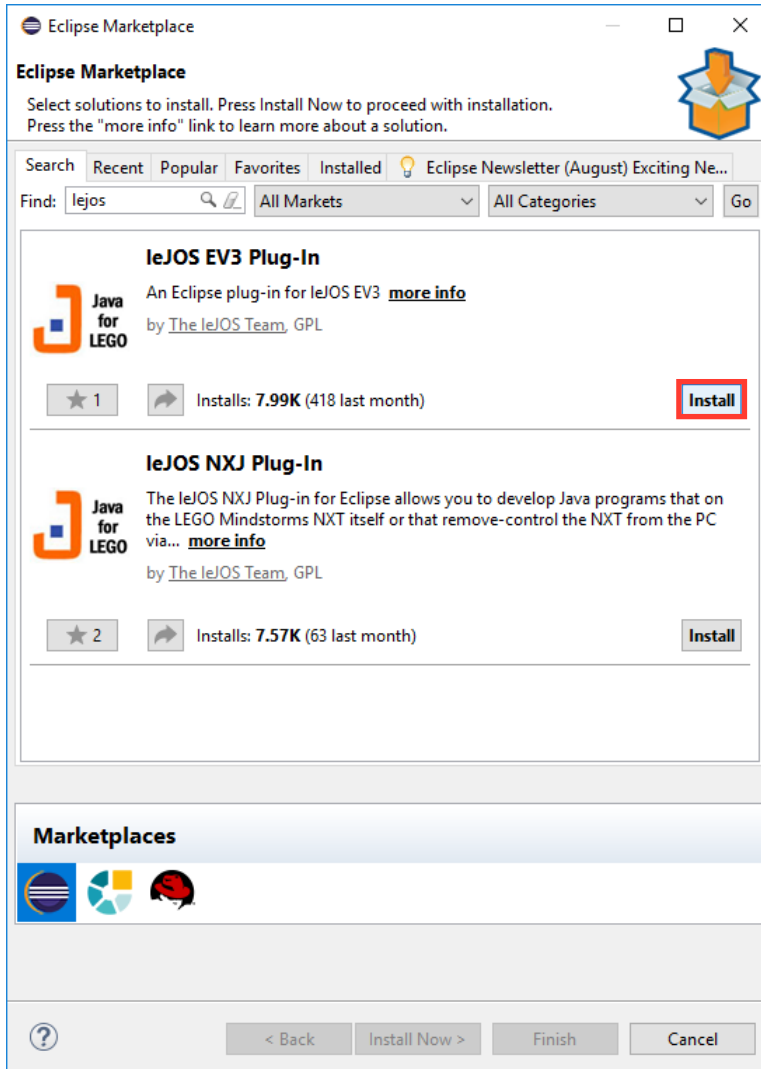
Go to <https://www.eclipse.org/downloads/> and download the Eclipse Oxygen version



## 5. Configure Eclipse

You will find the Eclipse Marketplace in the Help Menu.

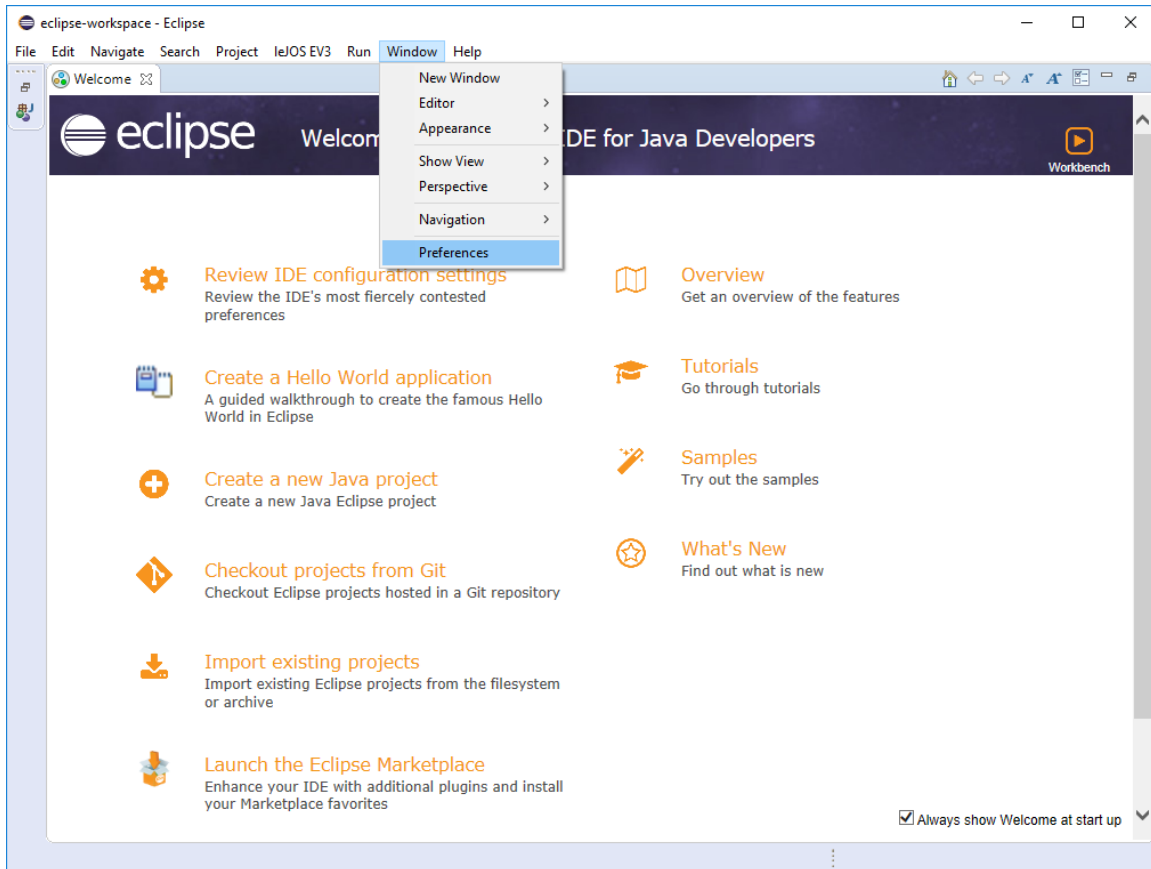
Enter "lejos" in the search field and then click on install in the EV3 Plugin.



Select "I accept the terms of the license agreement" and click on Finish. You will be asked to restart eclipse.

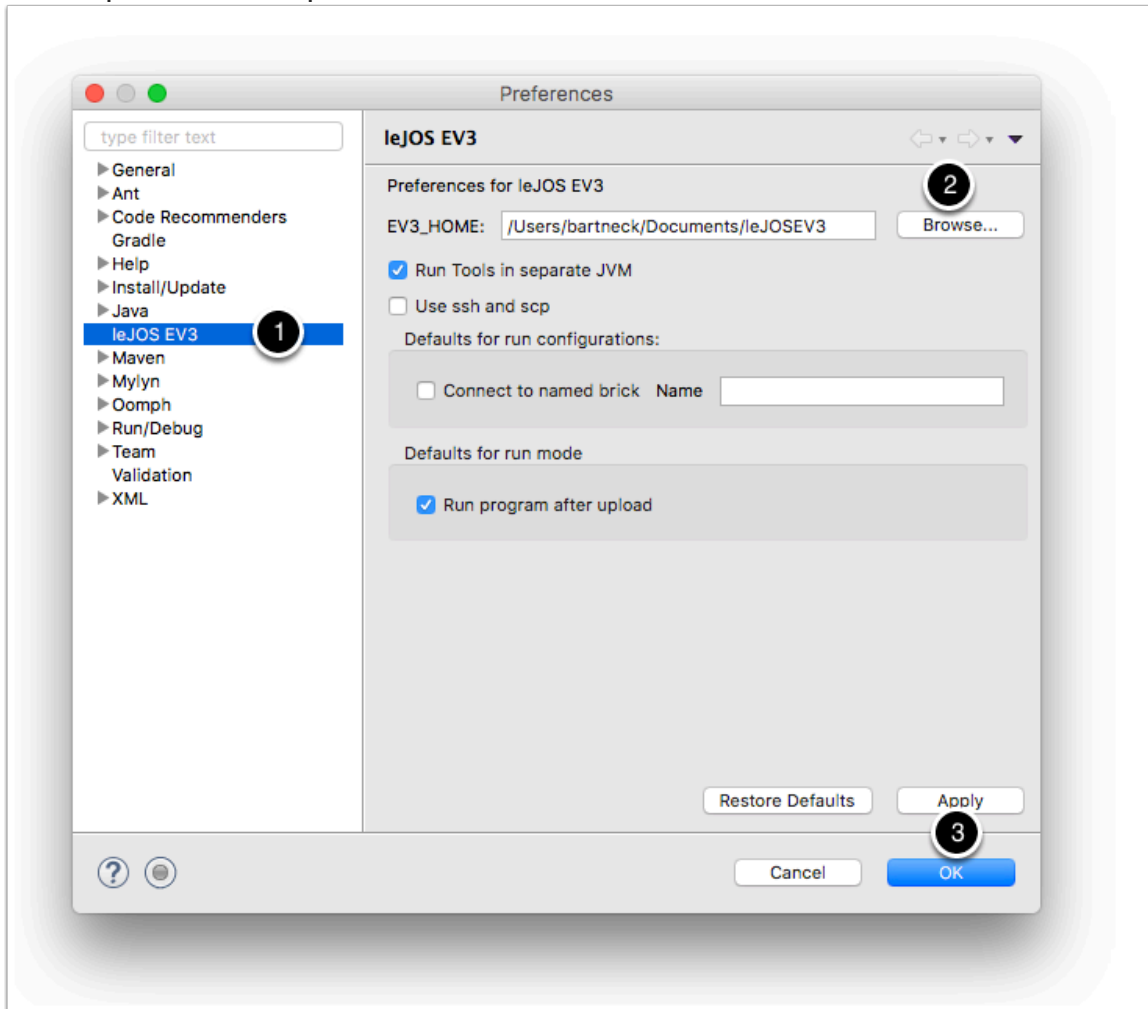


After Eclipse restarts you need to enter the Preferences, which are available under the Window Menu.



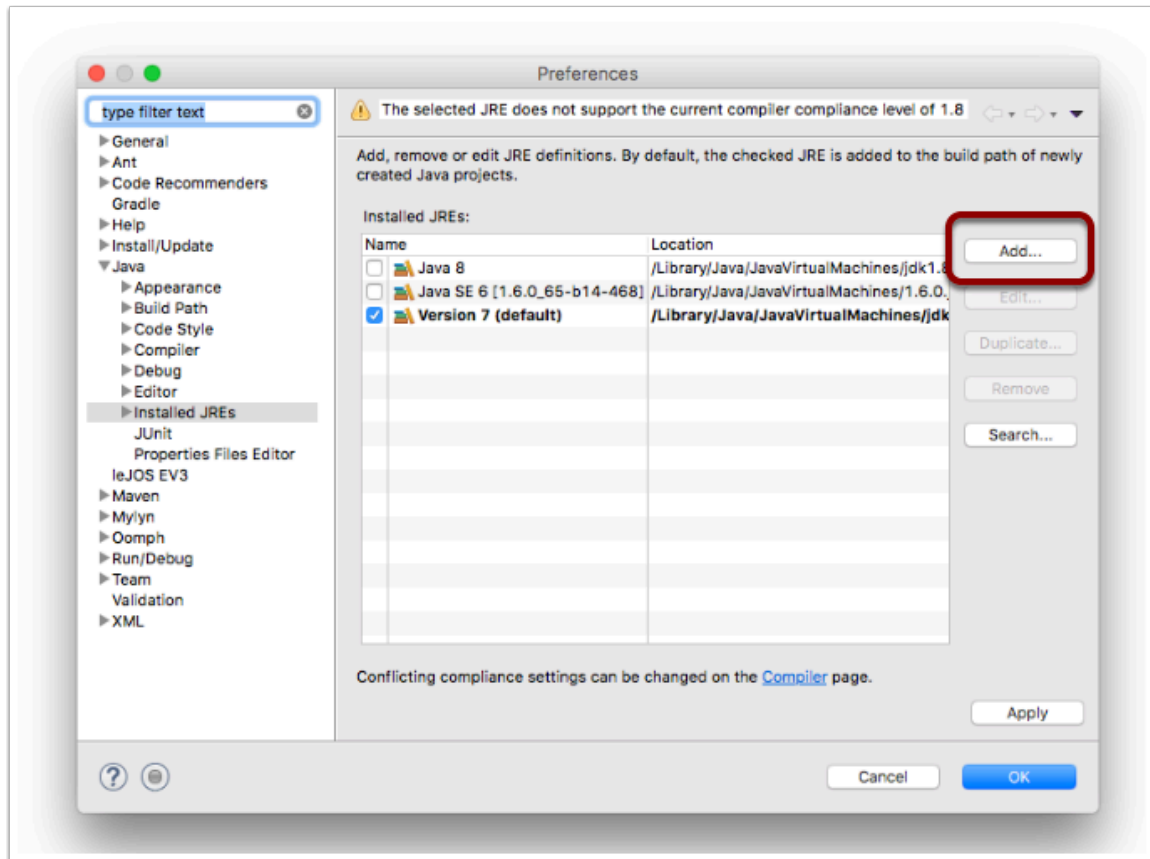
## Set the EV3\_HOME

First, you need to select the "leJOS EV3" tab on the left before clicking on "Browse" to select the directory in which you installed LeJOS. Click on "Apply" to complete the setup.



## Setup the different versions of Java

While you are in the Preferences, go to the "Java" tab and then on the "Installed JREs". Use the "Add" button to add any missing JREs to the list. Setup Version 7 as the default, since you will be building your EV3 programs towards that target.



Instructions adapted from : <http://www.bartneck.de/2017/06/04/tutorial-on-how-to-install-and-run-java-on-lego-mindstorms-ev3-using-eclipse-on-mac-os-x/>