

Setting Up Java Development Environment

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Steps

1. Install JRE (JAVA RUNTIME ENVIRONMENT):
<https://www.java.com/en/download/>
2. Install JDK (JAVA SDK):
<https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html>
3. Set Environment Variables:
JAVA_HOME: jdk root
CLASSPATH: jdk root/lib
Path: jdk root/bin
4. Install Eclipse IDE:
<http://www.eclipse.org/downloads/>
5. Install Git
<https://git-scm.com/>

Install JRE(Java Runtime Environment)

- <https://www.java.com/en/download/>
- After download, keep clicking "Next" to install.

 Download Developer Resources Help

Help Resources

- [What is Java?](#)
- [Remove older versions](#)
- [Disable Java](#)
- [Error messages](#)
- [Troubleshoot Java](#)
- [Other help](#)

64-bit Java for Windows

Version 8 Update 341 (filesize: 83.46 MB) [Why is Java 8 recommended?](#)
Release date: July 19, 2022


Important Oracle Java License Information

The Oracle Java License changed for releases starting April 16, 2019.
The [Oracle Technology Network License Agreement for Oracle Java SE](#) is substantially different from prior Oracle Java licenses. This license permits certain uses, such as personal use and development use, at no cost -- but other uses authorized under prior Oracle Java licenses may no longer be available. Please review the terms carefully before downloading and using this product. An FAQ is available [here](#).

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Help Resources

- [Mac FAQ](#)

Download Java for macOS

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Install JDK(Java Development Kit)


- <https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html>
- Need to login oracle to download. After download, keep clicking "Next" to install.

<u>Linux</u>	macOS	Solaris	Windows
Product/file description		File size	Download
x86 Installer		159.66 MB	 jdk-8u341-windows-i586.exe
x64 Installer		173.16 MB	 jdk-8u341-windows-x64.exe

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You will be redirected to the login screen in order to download the file.

Download [jdk-8u341-windows-x64.exe](#) 

Install JDK(Java Development Kit)

Linux macOS Solaris Windows

Product/file description	File size	Download
x64 DMG Installer	200.53 MB	 jdk-8u341-macosx-x64.dmg

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Required

You will be redirected to the login screen in order to download the file.

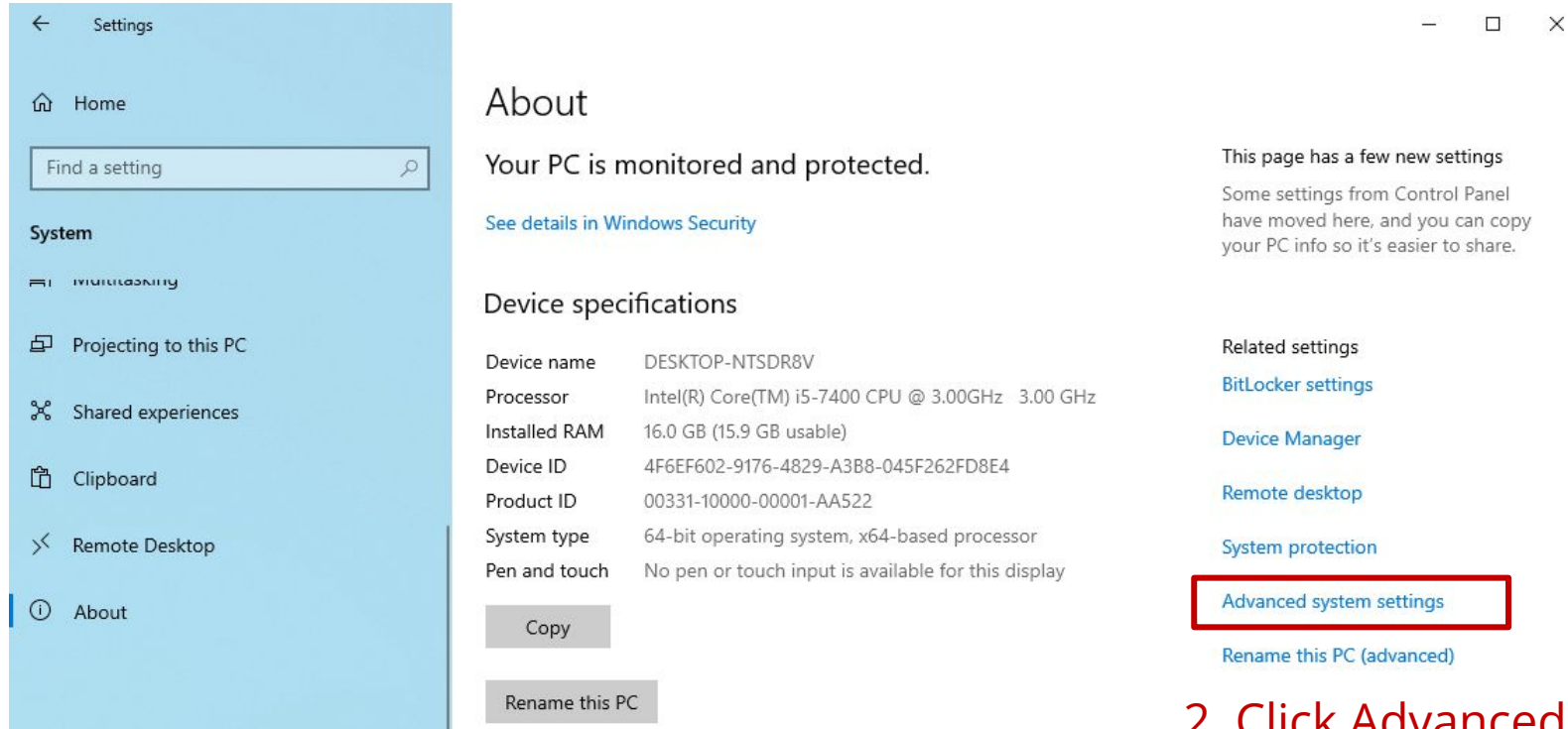
Download [jdk-8u341-macosx-x64.dmg](#) 

Set Environment Variables

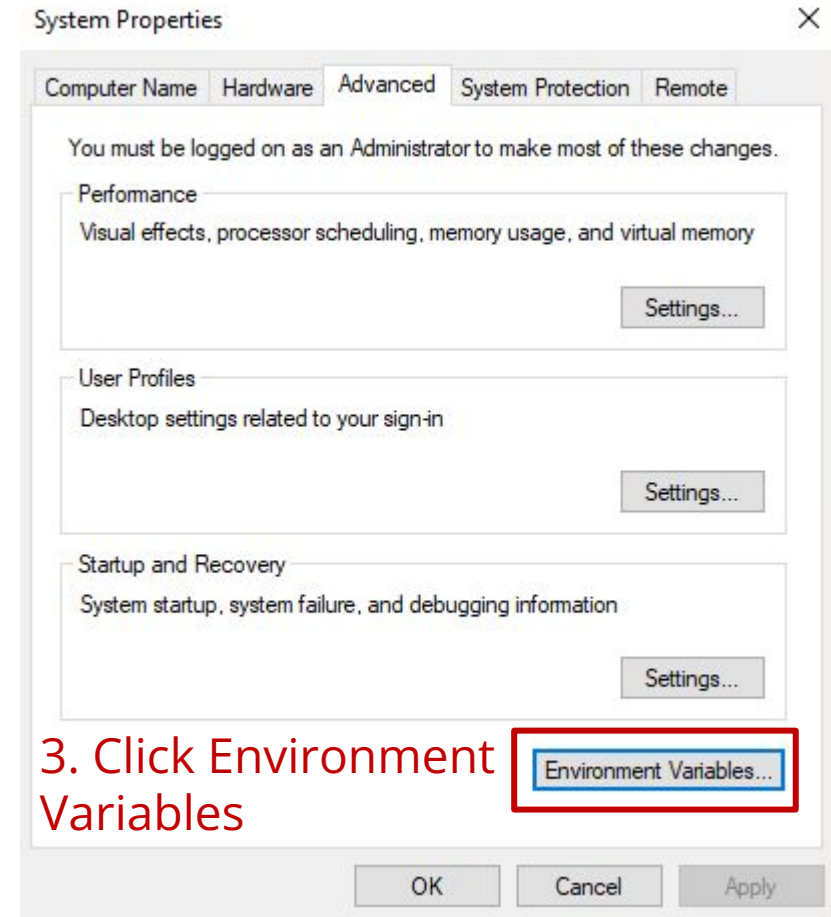
- Notice: You don't need to set environment variables on MAC OS.
- Environment Variables are the common variables in OS. Therefore, to let the OS know where we install JDK and JRE, we will set the following three environment variables:
 1. JAVA_HOME:
Location of the installation directory of JAVA
 2. CLASSPATH:
Location of the library of JAVA developer tool
 3. PATH:
Add JAVA-related commands to the system default search location

Set Environment Variables

1. Settings -> System -> About

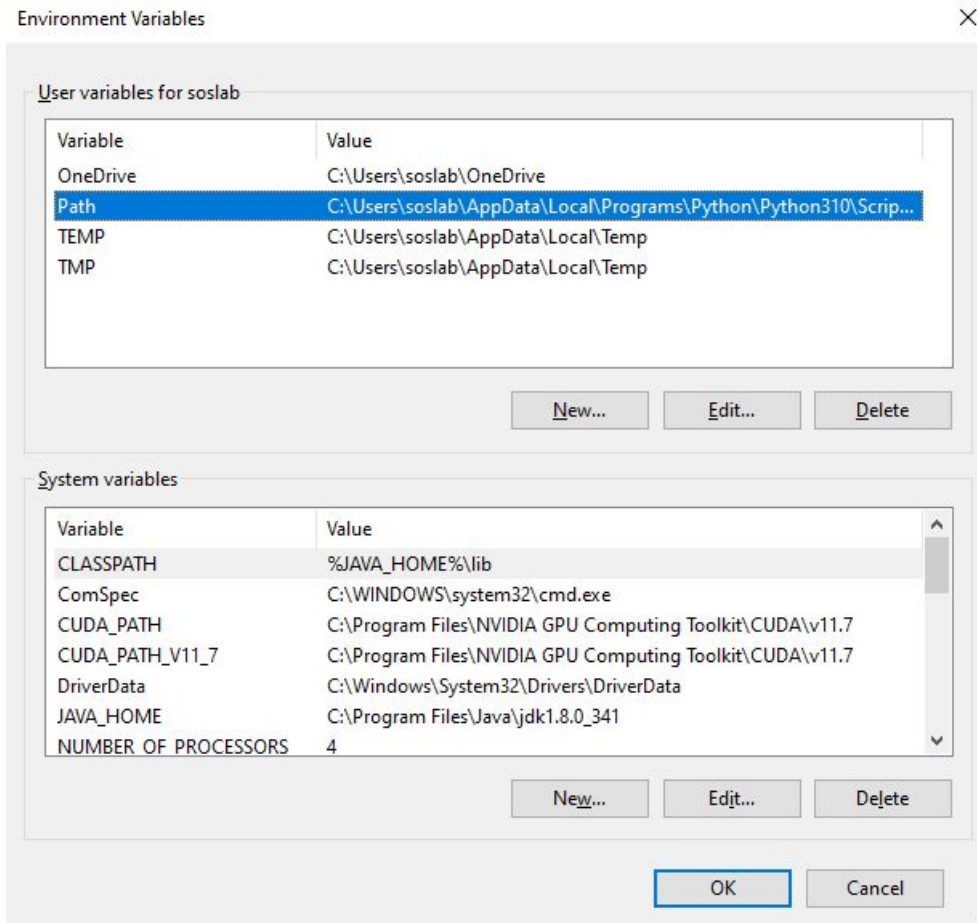


2. Click Advanced system settings



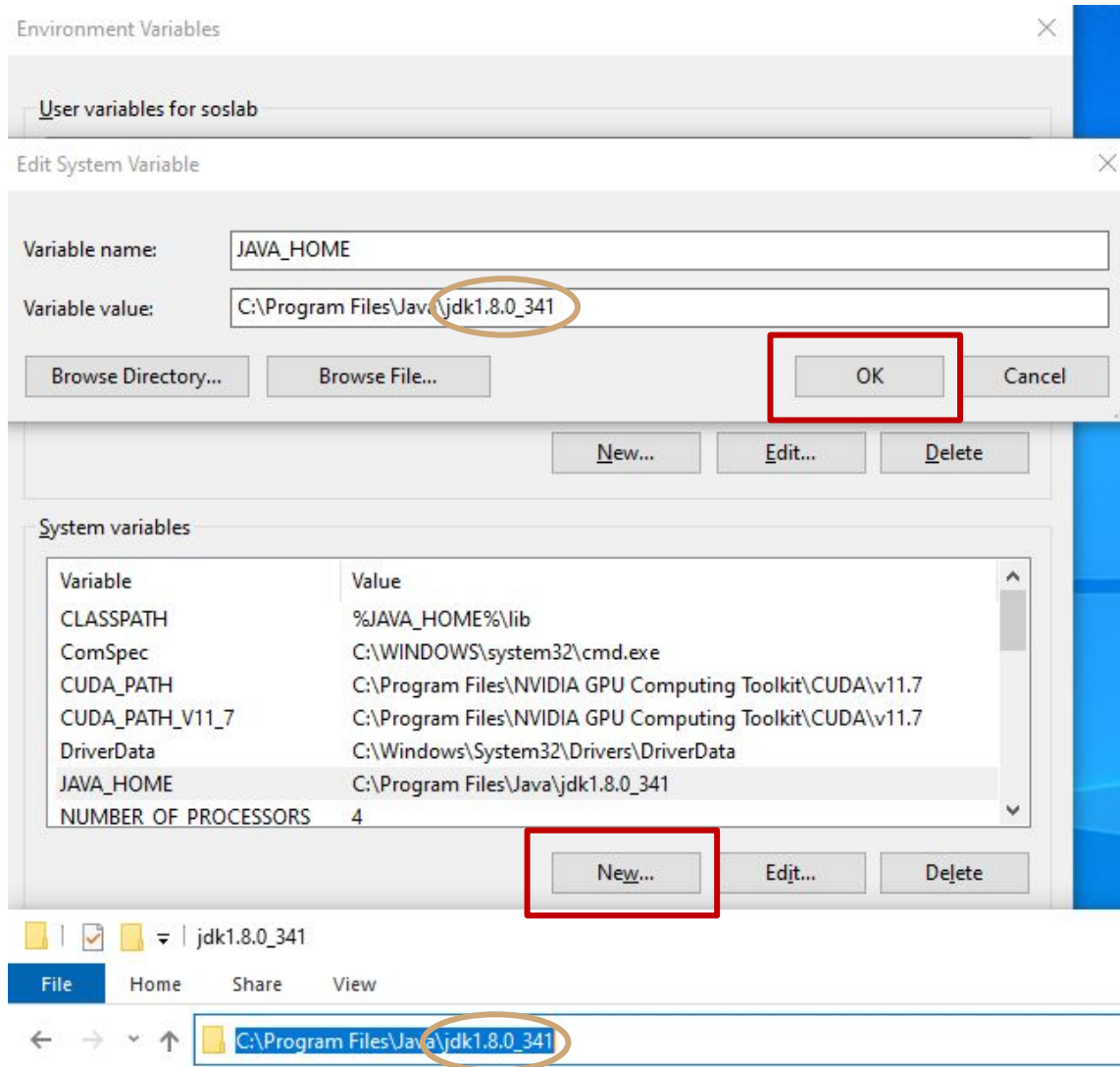
3. Click Environment Variables

Set Environment Variables



- If we set environment variables in the upper section (User variables for XXX), it means our setting only works when XXX login Windows.
- If we set environment variables on bottom section (System variables), it works when any user login.
- Recommend that you use the bottom (System variables) to set environment variables.

Set Environment Variables JAVA_HOME



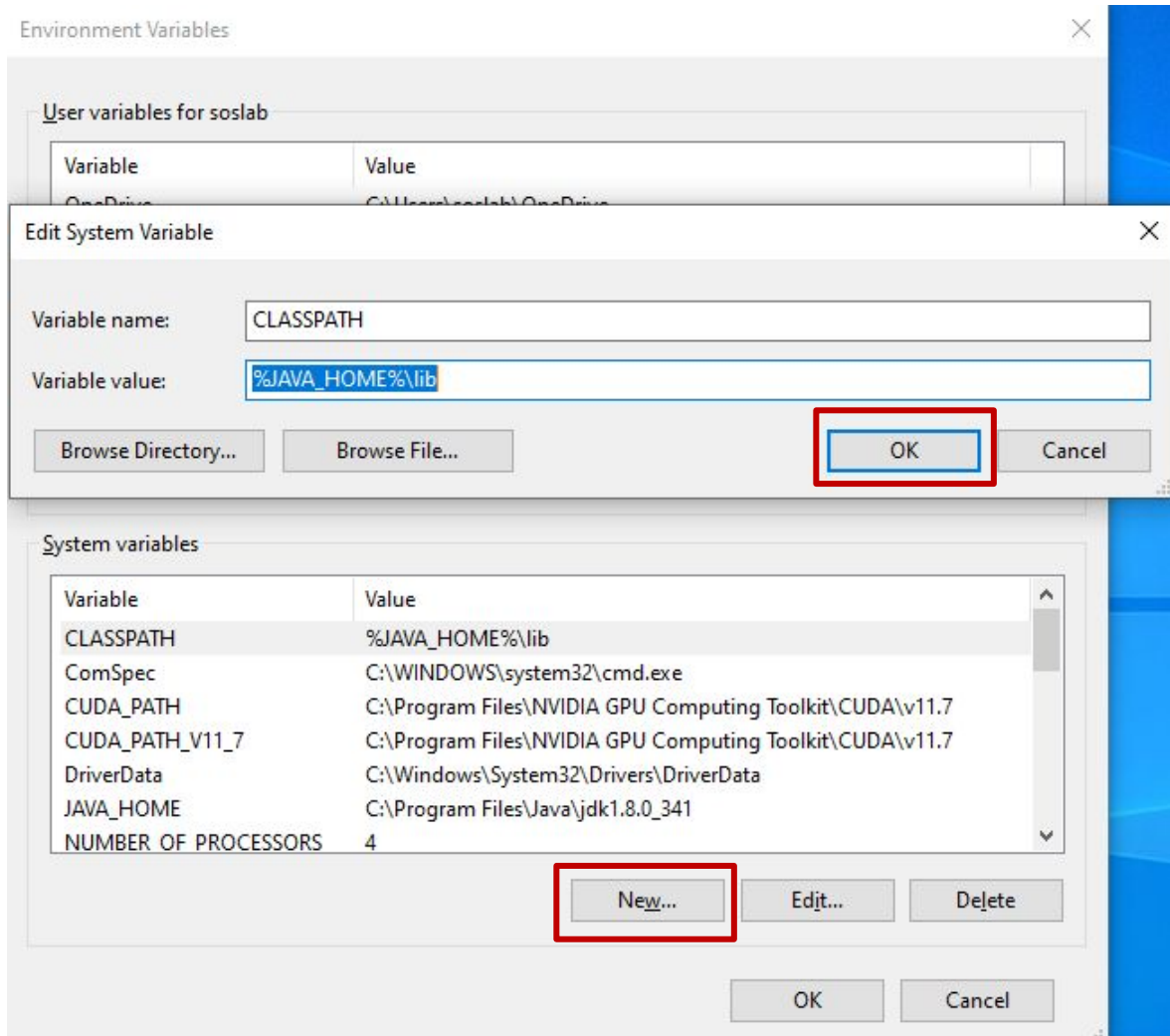
1. Click "New"
 - Variable name: JAVA_HOME
 - Variable value: installation directory of JDK

X64 windows usually is:
C:\ProgramFiles\Java\jdkXXXXXXXX

X86 windows usually is:
C:\Program Files(x86)\Java\jdkXXXXXXXX

 - The red part depends on the version; please check whether the directory exists and set the environment variables.
2. Click "OK" to save.

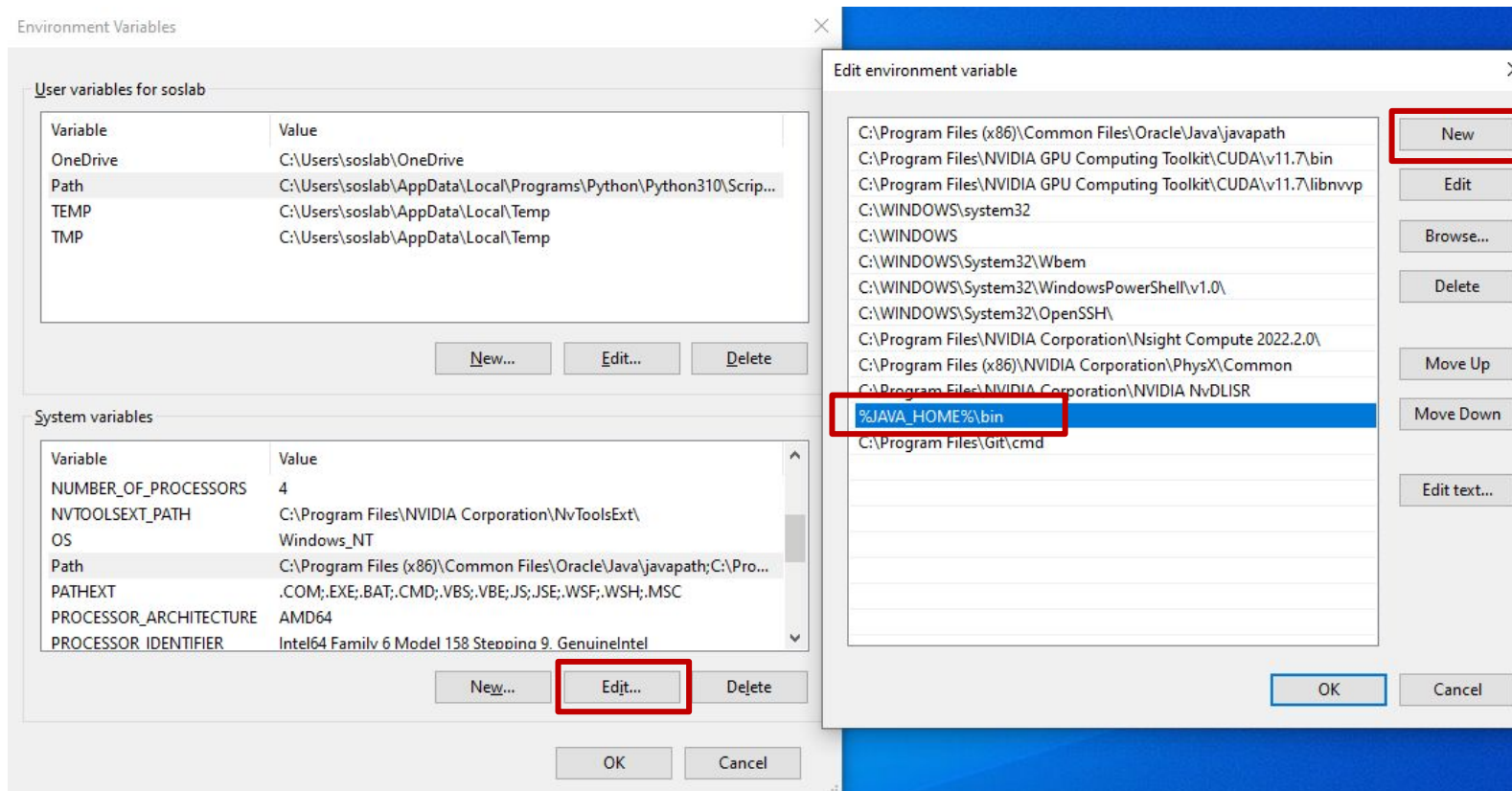
Set Environment Variables CLASSPATH



1. Click "New"
 - Variable name: CLASSPATH
 - Variable value: **%JAVA_HOME%\lib**
installation directory of JDK
 - **%JAVA_HOME%** is the path of JAVA_HOME
 - If you alter the Java JDK version in the future, only need to change the environment variables of JAVA_HOME, and don't need to change others.
2. Click "OK" to save.

Set Environment Variables PATH


- PATH variable usually has other values, so instead of adding this, we need to find the “PATH” variable in the list and **click “Edit”**.
- PATH contains lots of paths; **click “New”** and then input **%JAVA_HOME%\bin**
- **%JAVA_HOME%** is the path of JAVA_HOME



Install Eclipse IDE

- <https://www.eclipse.org/downloads/>

The Eclipse Installer 2022-06 R now includes a JRE for macOS, Windows and Linux.




Get Eclipse IDE 2022-06

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All downloads are provided under the terms and conditions of the [Eclipse Foundation Software User Agreement](#) unless otherwise specified.


[Download](#)

Download from: Korea, Republic Of - Kakao Corp. (https)

File: [eclipse-inst-jre-win64.exe](#) SHA-512

>> [Select Another Mirror](#)

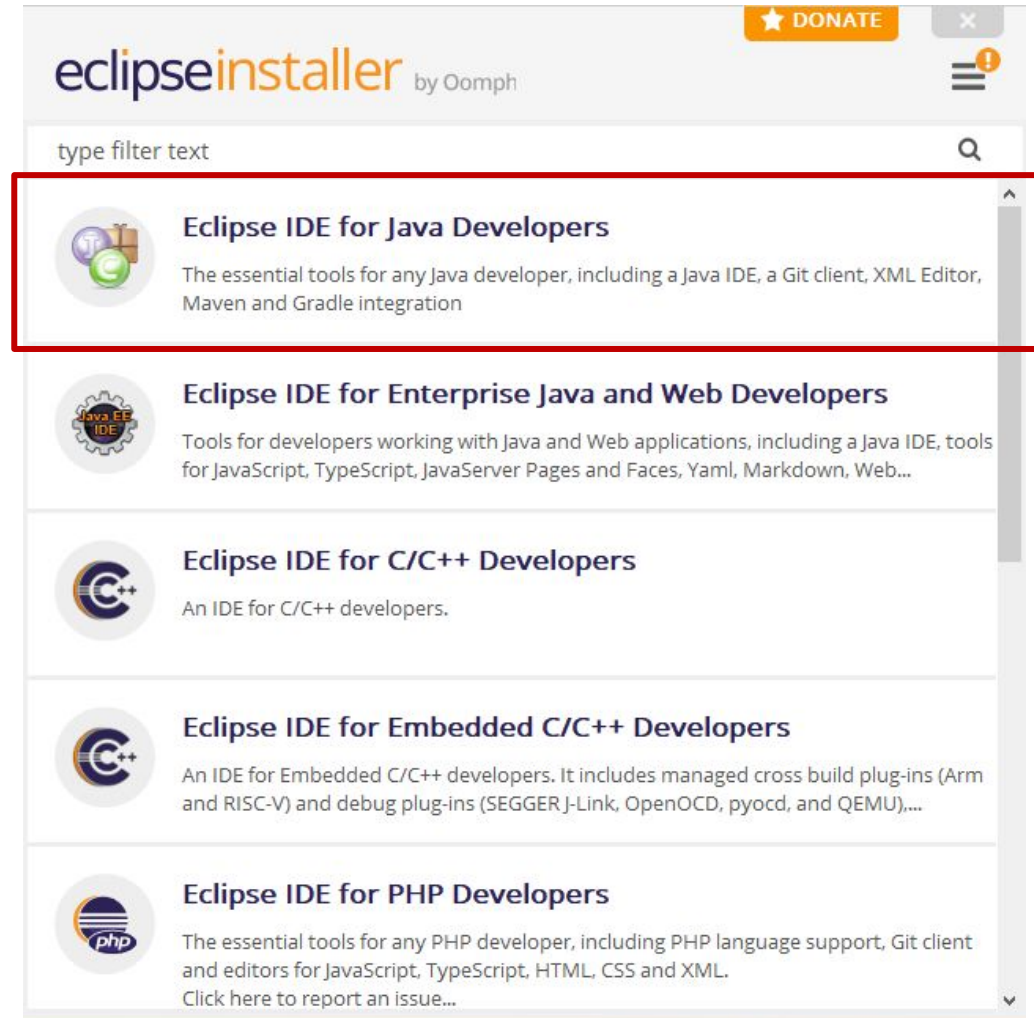
Sponsored Ad



An Open-Source Strategy

Install Eclipse IDE

- You can download the basic Java SE (first one) for usual, and use Java EE(Enterprise) for the final.
- Eclipse is the tool for coding in the future, so please put the unzipped folder in a suitable place (ex C:\), don't put it in the folder like "Download" to avoid losing it in the future.



Install Eclipse IDE

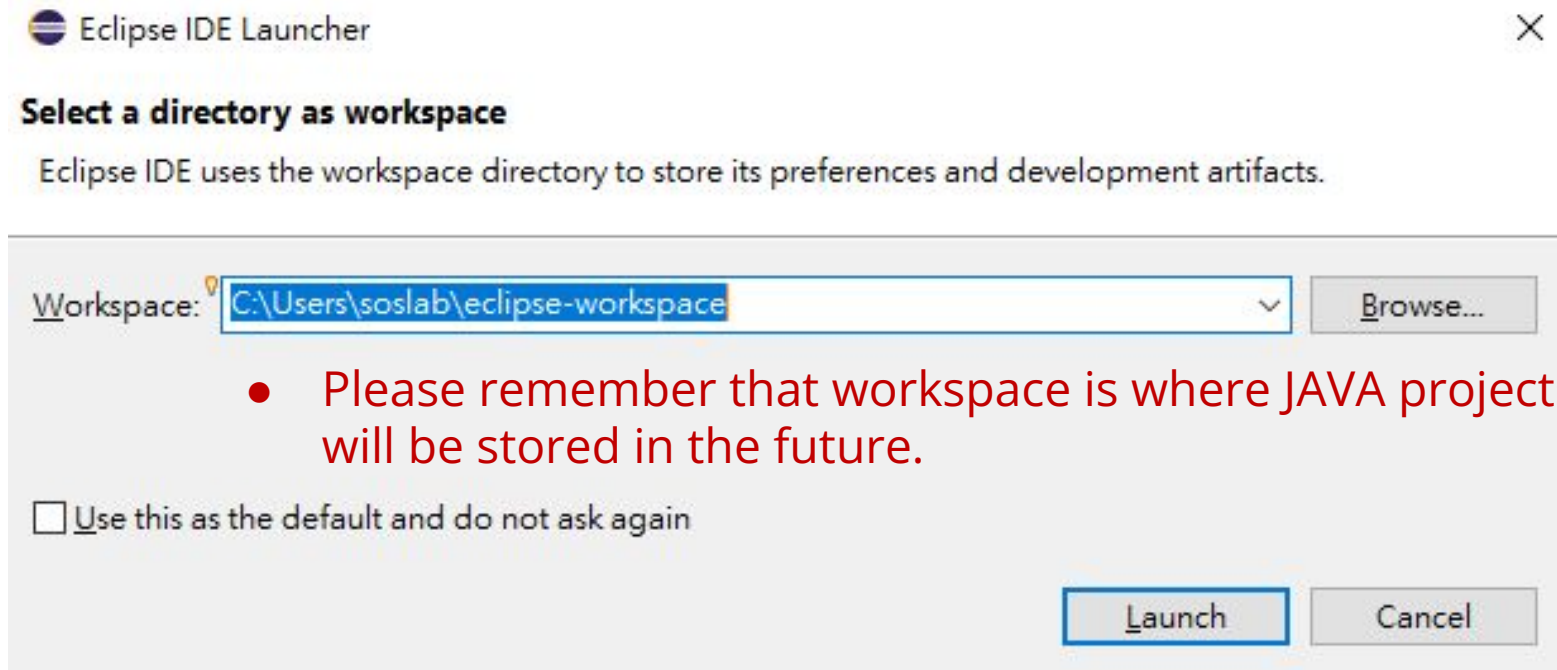
- Recommend adding a new folder (ex: Eclipse) in driver C, and select the folder you just created here.



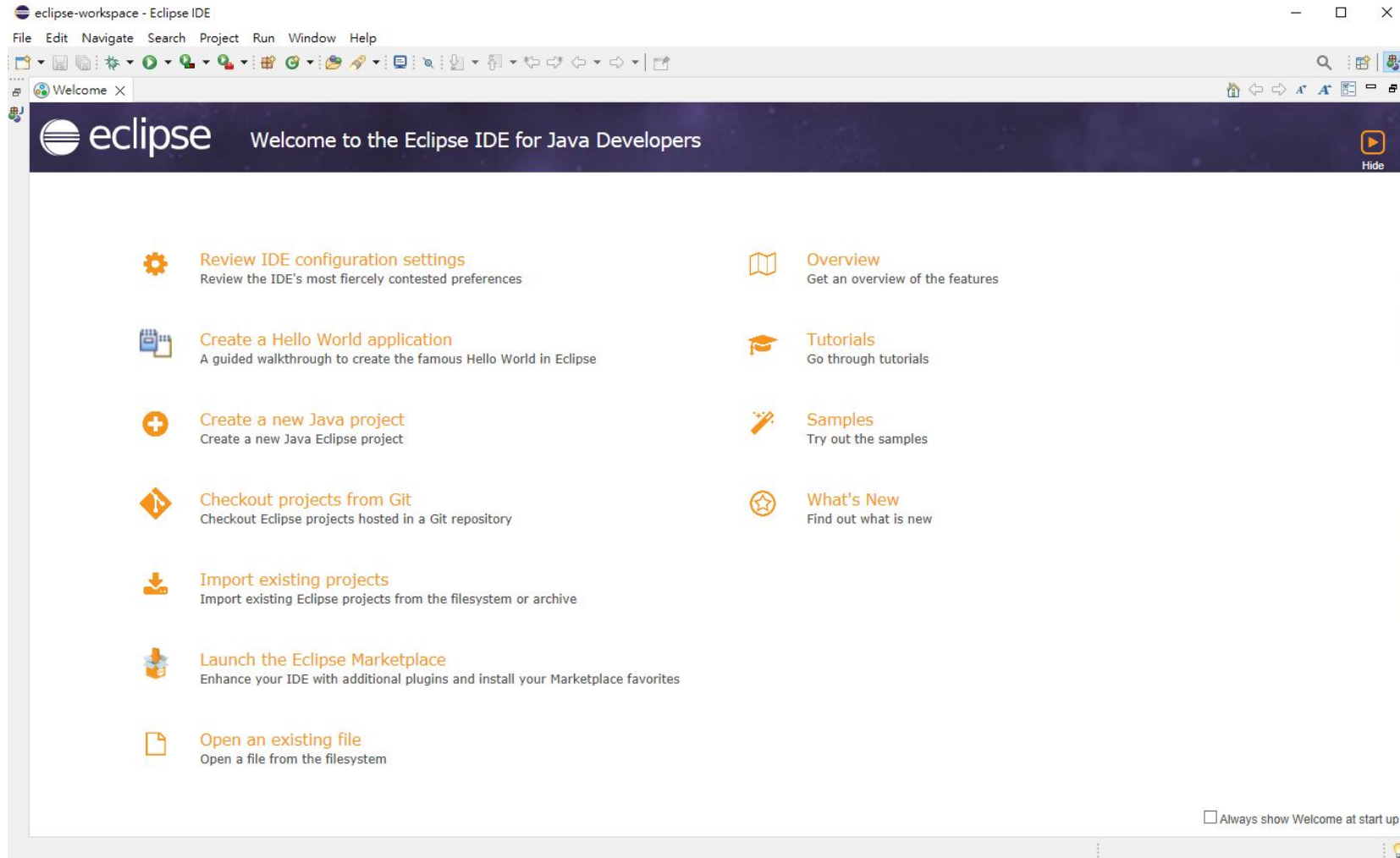
The screenshot shows the Eclipse Installer by Oomph window. At the top, there is a 'DONATE' button and a close button. Below the header, the title 'Eclipse IDE for Java Developers' is displayed with a 'details' link. A description states: 'The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Maven and Gradle integration.' The 'Java 11+ VM' section shows a dropdown menu with the URL 'ps://download.eclipse.org/justj/jres/17/updates/release/latest'. The 'Installation Folder' section has a text input field containing 'C:\Eclipse', which is highlighted with a red rectangle. Below this, there are two checked options: 'create start menu entry' and 'create desktop shortcut'. A large orange 'INSTALL' button is at the bottom. A 'BACK' button is in the bottom left corner.

- Recommend everyone put a shortcut of Eclipse on the desktop, it will be easier to find in the future!

Open Eclipse IDE



Finish!

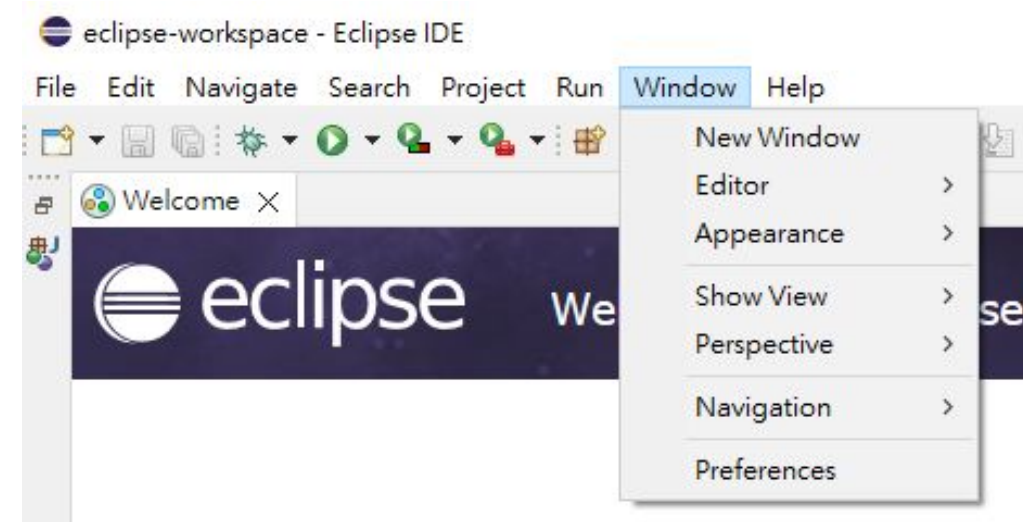


- Students who have used commercial development environments, such as Visual Studio, will feel difficult to adapt when they are new to Eclipse. However, Eclipse is a high-end free development environment; the function of Visual Studio can also be used on Eclipse with a little setting.
- Following will teach everyone set the code auto completion function via “Preference...”

How to open Preferences...

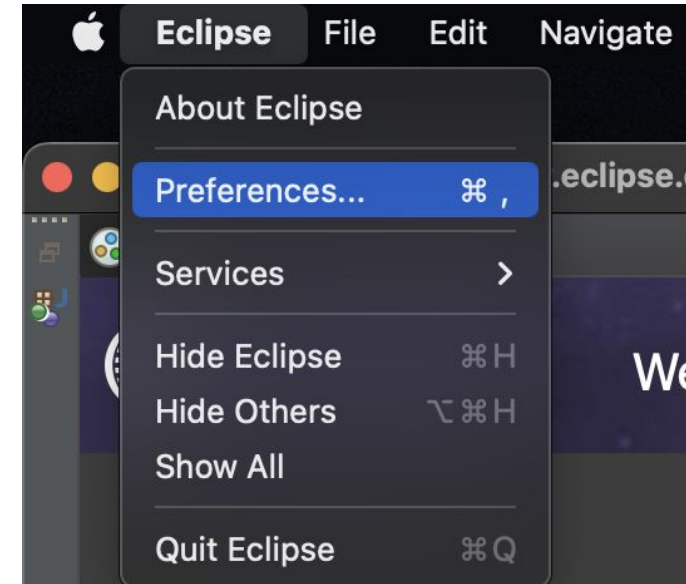
- Windows

The top menu of Eclipse “Window” → “Preferences...”

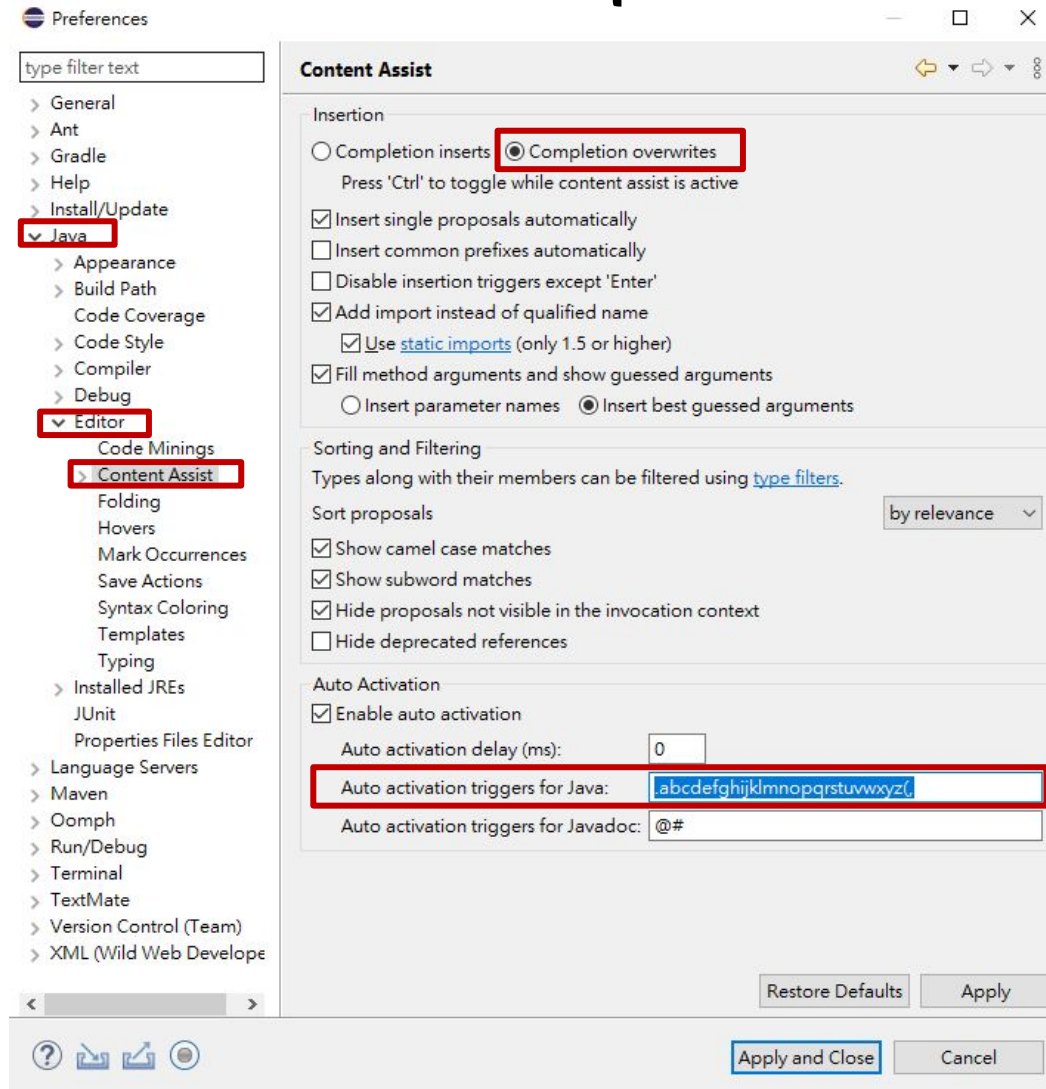


- MAC

The top menu of Eclipse “Eclipse” → “Preferences...”



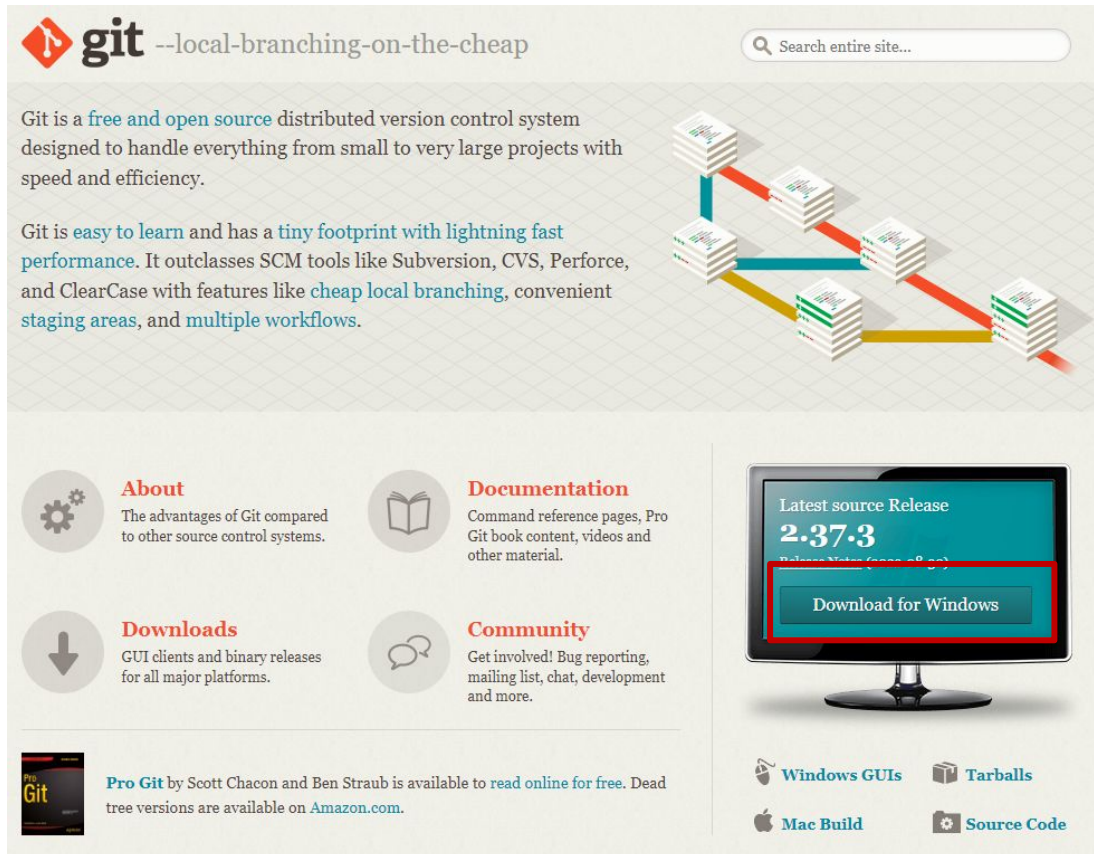
Code auto completion



1. Open "Preferences..."
2. Preferences select "Java" → "Editor" → "Content Assist" on the left side.
3. Choose "Completion overwrites" on the right side.
4. Change "Auto activation triggers for java" value to **.abcdefghijklmnopqrstuvwxyz,**

Install git

- <https://git-scm.com/>



The image shows the Git website homepage. At the top, there's a navigation bar with the Git logo and the tagline "--local-branching-on-the-cheap". Below this, a search bar is visible. The main content area features a large illustration of a branching model with multiple stacks of code blocks connected by lines. To the left of this illustration, there's a paragraph describing Git as a free and open source distributed version control system. Below this, another paragraph highlights Git's ease of learning and performance. On the right side of the main content area, there's a section titled "About" with a gear icon, "Documentation" with a book icon, "Downloads" with a download icon, and "Community" with a speech bubble icon. At the bottom, there's a section for "Pro Git" by Scott Chacon and Ben Straub, available for free online or on Amazon. On the right side of the bottom section, there are links for "Windows GUIs", "Tarballs", "Mac Build", and "Source Code".

git --local-branching-on-the-cheap

Git is a [free and open source](#) distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is [easy to learn](#) and has a [tiny footprint with lightning fast performance](#). It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like [cheap local branching](#), convenient [staging areas](#), and [multiple workflows](#).

About
The advantages of Git compared to other source control systems.

Documentation
Command reference pages, Pro Git book content, videos and other material.

Downloads
GUI clients and binary releases for all major platforms.

Community
Get involved! Bug reporting, mailing list, chat, development and more.

Latest source Release
2.37.3
Released 2022-08-30
[Download for Windows](#)

[Windows GUIs](#) [Tarballs](#)
[Mac Build](#) [Source Code](#)

Pro Git by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

Download for Windows

[Click here to download](#) the latest (**2.37.3**) **64-bit** version of **Git for Windows**. This is the most recent [maintained build](#). It was released **5 days ago**, on 2022-08-30.

Other Git for Windows downloads

Standalone Installer

[32-bit Git for Windows Setup.](#)

[64-bit Git for Windows Setup.](#)

Portable ("thumbdrive edition")

[32-bit Git for Windows Portable.](#)

[64-bit Git for Windows Portable.](#)

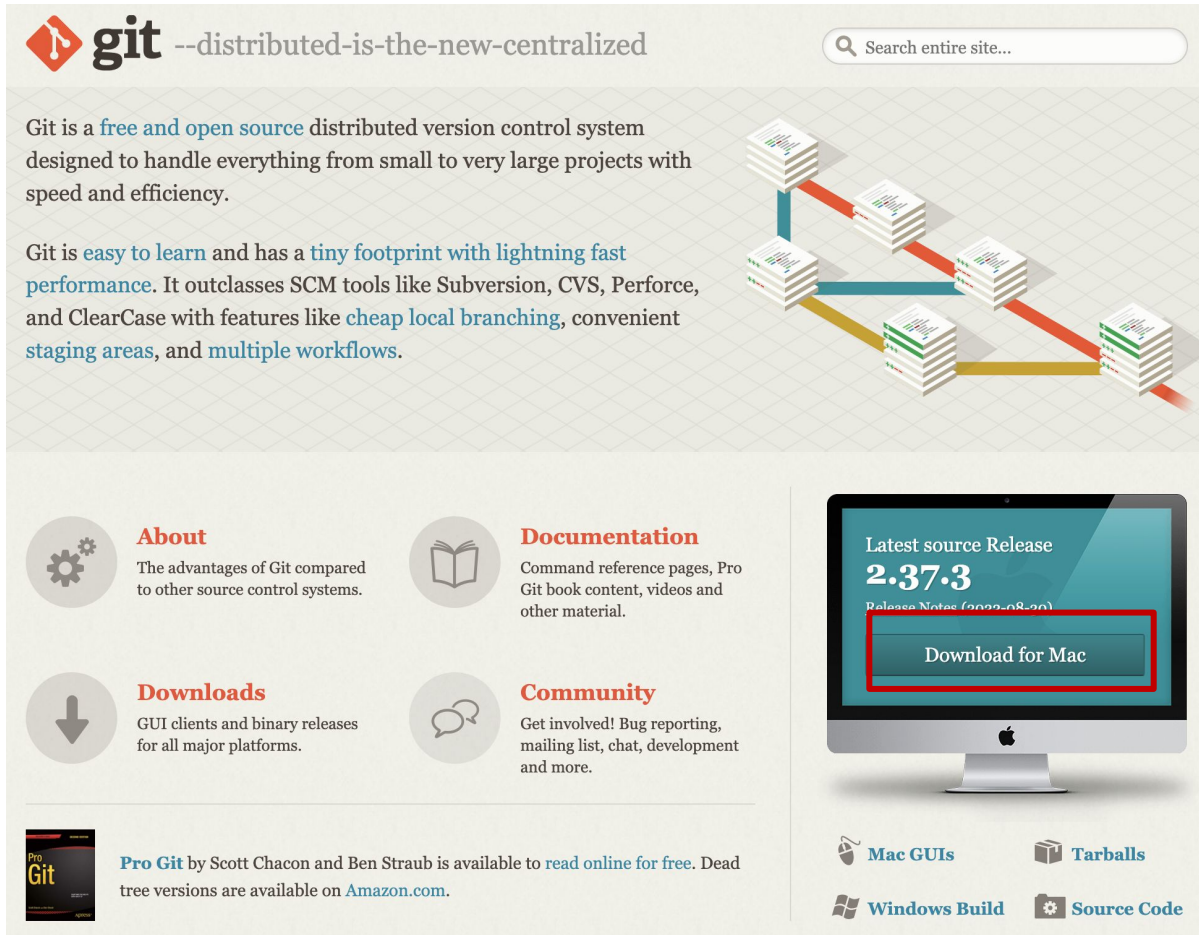
Using winget tool

Install [winget tool](#) if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

The current source code release is version **2.37.3**. If you want the newer version, you can build it from [the source code](#).

Install git



The image shows the Git website header and navigation. At the top left is the Git logo (a red diamond with a white 'G') followed by the text '--distributed-is-the-new-centralized'. To the right is a search bar with the placeholder text 'Search entire site...'. Below the header, there is a main content area with a grid of icons and text. The icons represent 'About', 'Documentation', 'Downloads', and 'Community'. The 'About' section describes Git as a free and open source distributed version control system. The 'Documentation' section lists command reference pages, Pro Git book content, videos, and other material. The 'Downloads' section mentions GUI clients and binary releases for all major platforms. The 'Community' section encourages bug reporting, mailing list participation, chat, development, and more. At the bottom left, there is a section for 'Pro Git' by Scott Chacon and Ben Straub, available to read online for free. At the bottom right, there is a section for 'Mac GUIs', 'Tarballs', 'Windows Build', and 'Source Code'. In the center of the main content area, there is a diagram showing a network of stacks of books connected by lines, representing a distributed version control system. Below this diagram is a screenshot of a computer monitor displaying the 'Latest source Release 2.37.3' and a 'Download for Mac' button, which is highlighted with a red rectangle.

git --distributed-is-the-new-centralized

Search entire site...

Git is a [free and open source](#) distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

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Mac GUIs **Tarballs** **Windows Build** **Source Code**

Download for macOS

There are several options for installing Git on macOS. Note that any non-source distributions are provided by third parties, and may not be up to date with the latest source release.

Homebrew

Install [homebrew](#) if you don't already have it, then:

```
$ brew install git
```

MacPorts

Install [MacPorts](#) if you don't already have it, then:

```
$ sudo port install git
```

Xcode

Apple ships a binary package of Git with [Xcode](#).

Binary installer

Tim Harper provides an [installer](#) for Git. The latest version is [2.33.0](#), which was released about 1 year ago, on 2021-08-30.

Building from Source

If you prefer to build from source, you can find tarballs [on kernel.org](#). The latest version is [2.37.3](#).

Installing git-gui

If you would like to install [git-gui](#) and [gitk](#), git's commit GUI and interactive history browser, you can do so using [homebrew](#)

```
$ brew install git-gui
```

Check git installation

- Check whether the git installation is successful.
- Type `git --version` in Terminal and enter.

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1889]
(c) Microsoft Corporation. All rights reserved.

C:\Users\soslab>git --version
git version 2.37.3.windows.1
```

```
(base) [redacted]@MacBook ~ % git --version
git version 2.33.0
```

- It will show the version you installed, that means your installation is successful.

Done!