

# How to Install Java on Windows

## Introduction

The Java Development Kit (JDK) is software used for [Java](#) programming, along with the Java Virtual Machine (JVM) and the Java Runtime Environment (JRE). The JDK includes the [compiler](#) and class libraries, allowing developers to create Java programs executable by the JVM and JRE.

In this tutorial, you will learn to install the Java Development Kit on Windows.

## Prerequisites

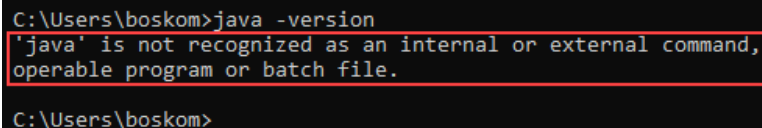
- A system running Windows 10.
- A network connection.
- Administrator privileges.

## Check if Java Is Installed

Before installing the Java Development Kit, [check if a Java version is already installed on Windows](#). Follow the steps below:

1. Open a command prompt by typing [cmd](#) in the search bar and press Enter.
2. Run the following command:

```
java -version
```



```
C:\Users\boskom>java -version
'java' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\boskom>
```

The command outputs the Java version on your system. If Java isn't installed, the output is a message stating that Java isn't recognized as an internal or external command.

# Download Java for Windows 10

Download the latest Java Development Kit installation file for Windows 10 to have the latest features and bug fixes.

1. Using your preferred web browser, navigate to the [Oracle Java Downloads page](#).
2. On the *Downloads* page, click the x64 Installer download link under the Windows category. At the time of writing this article, Java version 17 is the latest long-term support Java version.

Linux	macOS	Windows
Product/file description		
File size		Download
x64 Compressed Archive	170.66 MB	<a href="https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.zip">https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.zip</a> (sha256 <a href="#">🔗</a> )
x64 Installer	152 MB	<a href="https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.exe">https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.exe</a> (sha256 <a href="#">🔗</a> )
x64 MSI Installer	150.89 MB	<a href="https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.msi">https://download.oracle.com/java/17/latest/jdk-17_windows-x64_bin.msi</a> (sha256 <a href="#">🔗</a> )

Wait for the download to complete.

## Install Java on Windows 10

After downloading the installation file, proceed with installing Java on your Windows system.

Follow the steps below:

### Step 1: Run the Downloaded File

Double-click the downloaded file to start the installation.

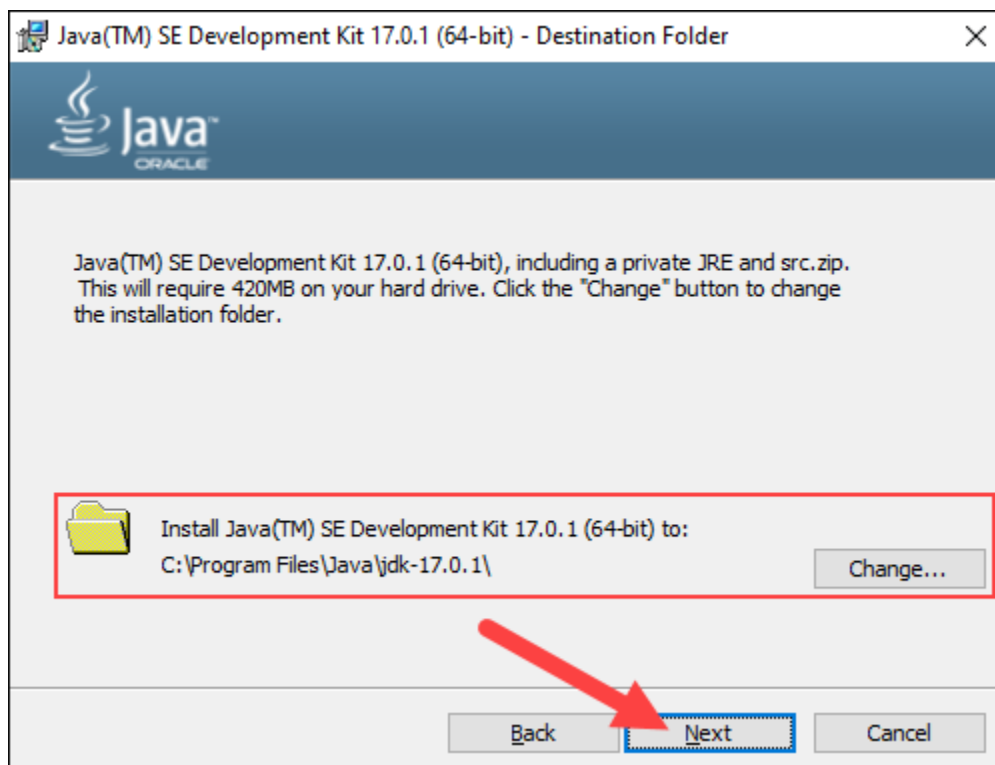
### Step 2: Configure the Installation Wizard

After running the installation file, the installation wizard welcome screen appears.

1. Click Next to proceed to the next step.



2. Choose the destination folder for the Java installation files or stick to the default path. Click Next to proceed.



3. Wait for the wizard to finish the installation process until the *Successfully Installed* message appears. Click Close to exit the wizard.

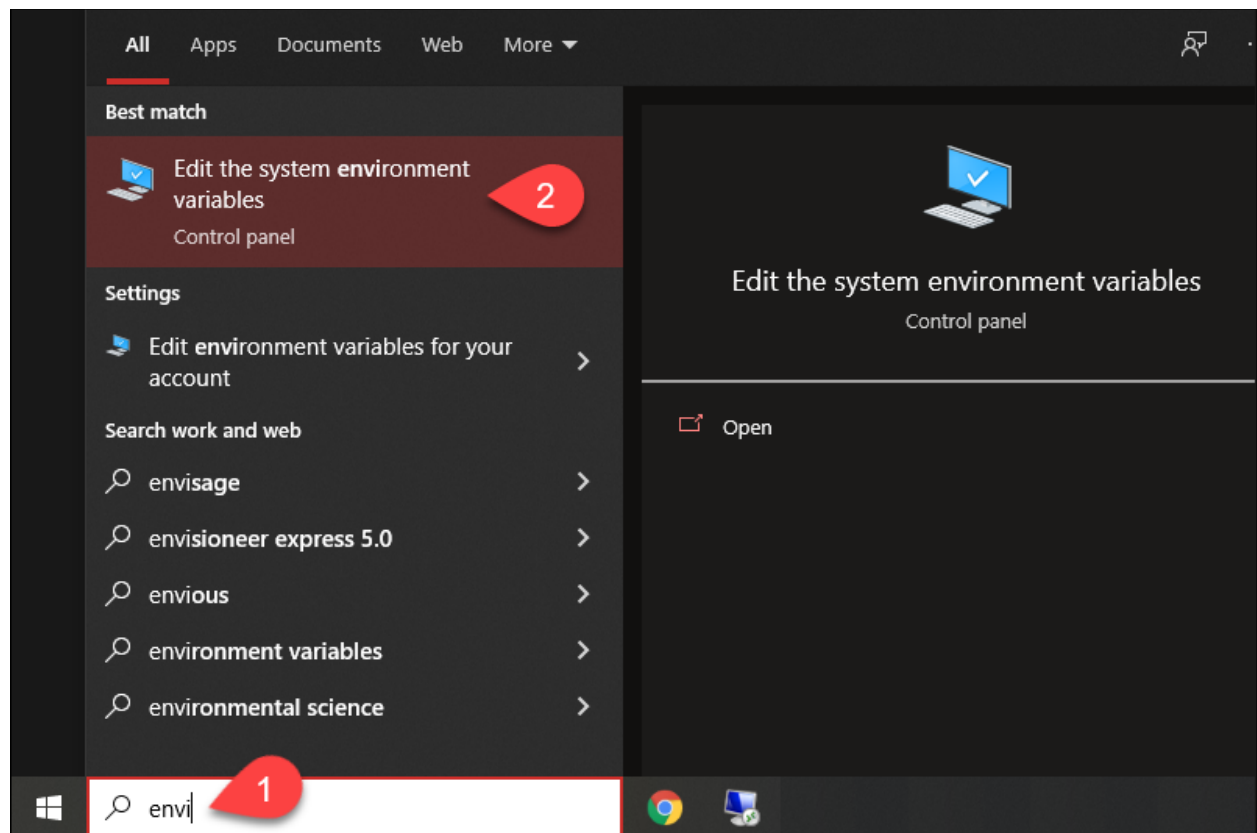


## Set Environmental Variables in Java

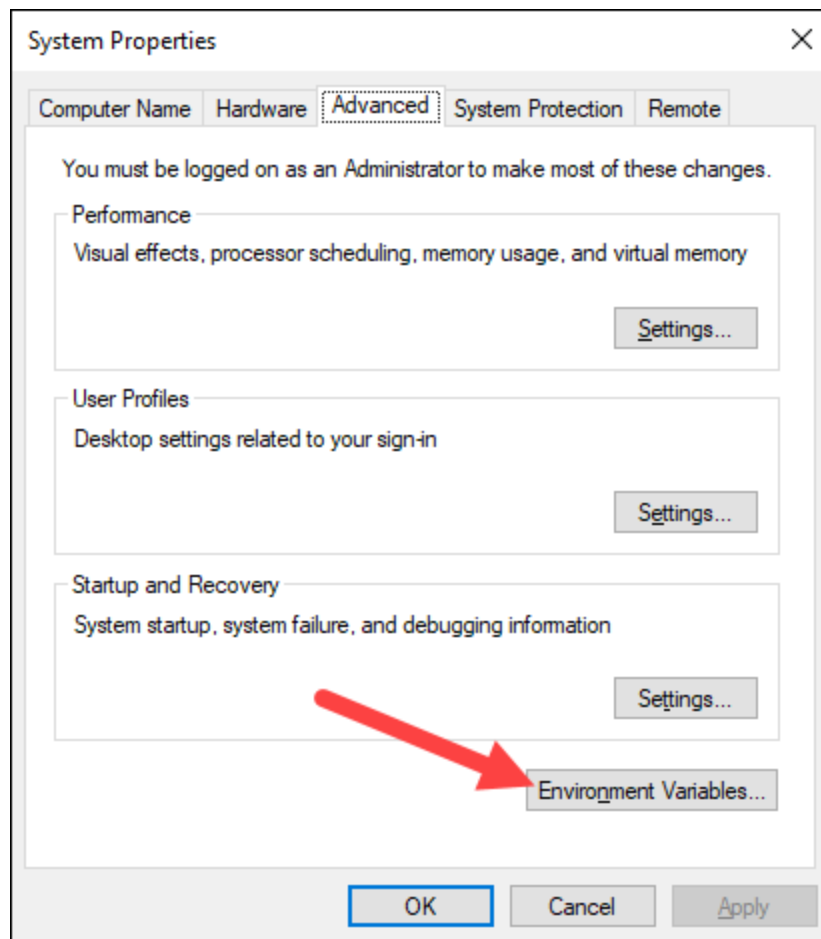
Set Java [environment variables](#) to enable program compiling from any directory. To do so, follow the steps below:

### Step 1: Add Java to System Variables

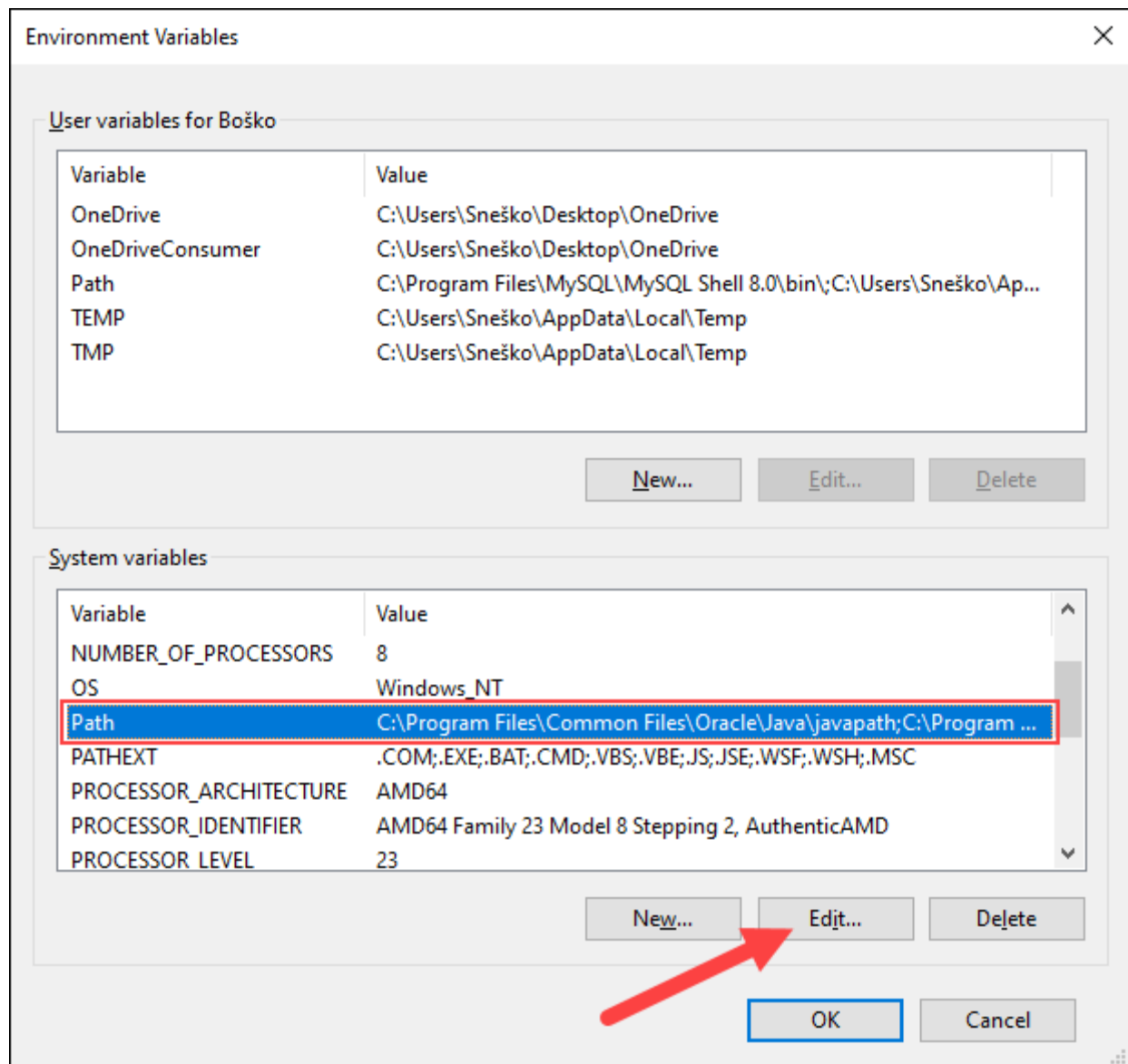
1. Open the Start menu and search for *environment variables*.
2. Select the Edit the system environment variables result.



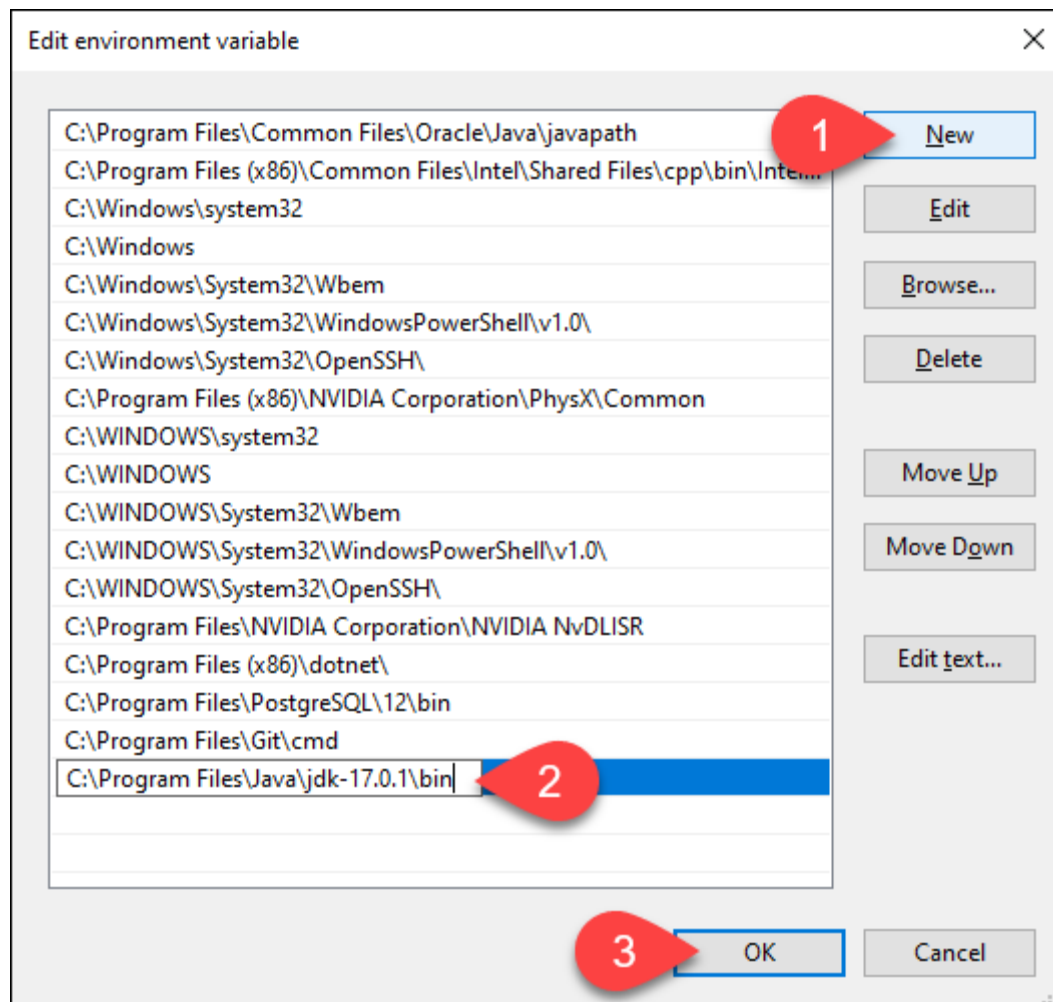
3. In the *System Properties* window, under the *Advanced* tab, click Environment Variables...



4. Under the *System variables* category, select the Path variable and click Edit:



5. Click the New button and enter the path to the Java bin directory:



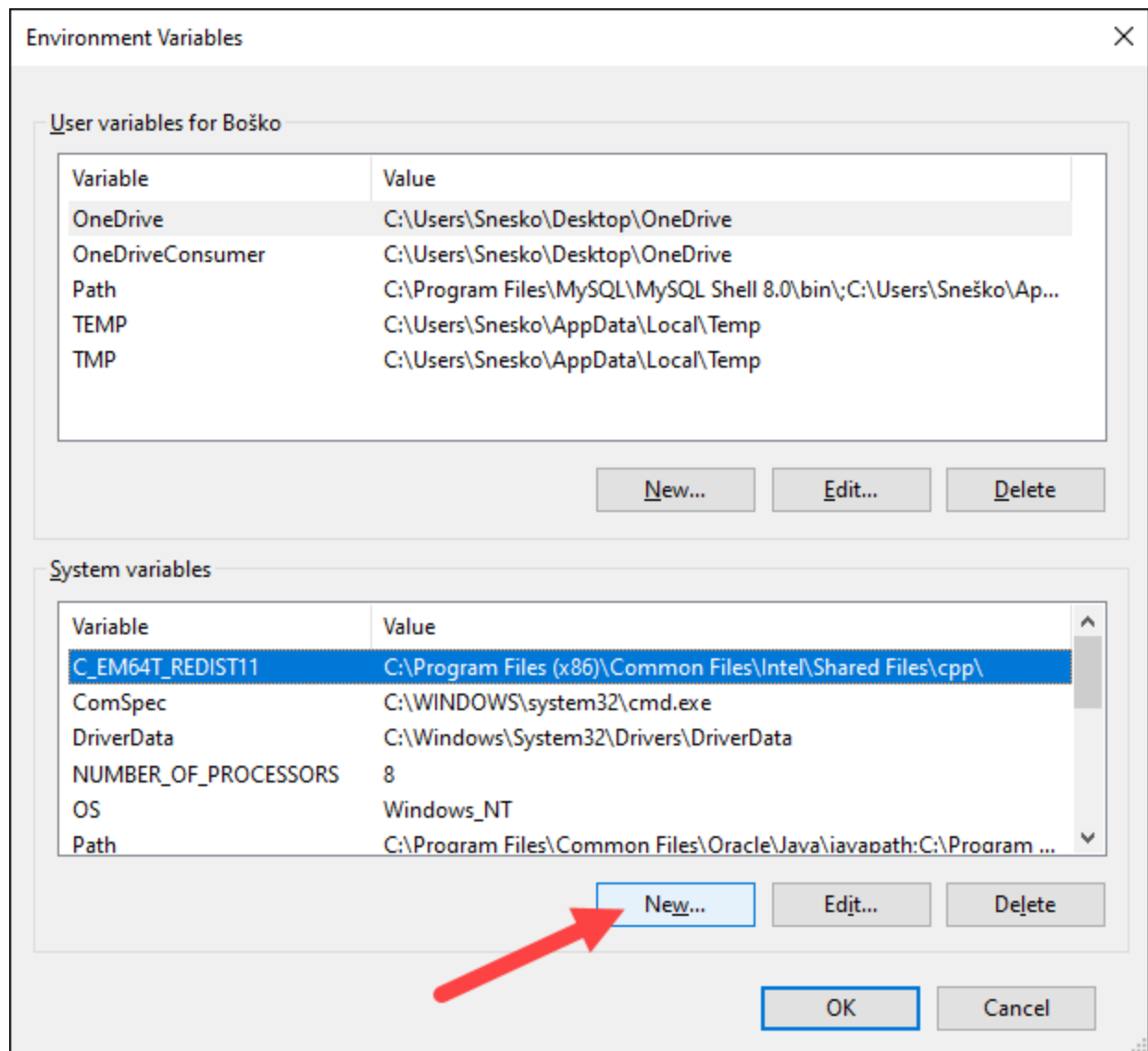
6. Click OK to save the changes and exit the variable editing window.

## Step 2: Add JAVA\_HOME Variable

Some applications require the JAVA\_HOME variable. Follow the steps below to create the variable:

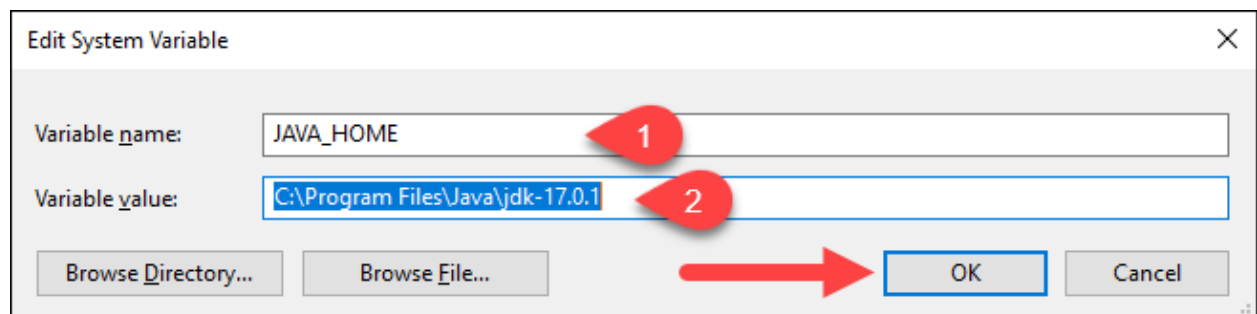
1. In the *Environment Variables* window, under the *System variables* category, click the *New...* button to create a new variable.





2. Name the variable as `JAVA_HOME`.

3. In the variable value field, paste the path to your Java jdk directory and click OK.



4. Confirm the changes by clicking OK in the *Environment Variables* and *System properties* windows.

## Test the Java Installation

Run the `java -version` command in the command prompt to make sure Java installed correctly:

```
C:\Users\boskom>java -version
java version "17.0.1" 2021-10-19 LTS
Java(TM) SE Runtime Environment (build 17.0.1+12-LTS-39)
Java HotSpot(TM) 64-Bit Server VM (build 17.0.1+12-LTS-39, mixed mode, sharing)
```

If installed correctly, the command outputs the Java version.

# How to Install Maven on Windows

## Introduction

Apache Maven is a build-automation tool designed to provide a comprehensive and easy-to-use way of developing Java applications. It uses a POM (Project Object Model) approach to create a [standardized development environment](#) for multiple teams.

## Prerequisites

- A system running Windows.
- A working Internet connection.
- Access to an account with administrator privileges.
- Access to the command prompt.
- A copy of Java installed and ready to use, with the JAVA\_HOME environment variable set up (learn how to set up the JAVA\_HOME environment variable in our [guide to installing Java on Windows](#)).

## How to Install Maven on Windows

Follow the steps outlined below to install Apache Maven on Windows.

### Step 1: Download Maven Zip File and Extract

1. Visit the [Maven download page](#) and download the version of Maven you want to install. The *Files* section contains the archives of the latest version. Access earlier versions using the archives link in the *Previous Releases* section.

2. Click on the appropriate link to download the binary zip archive of the latest version of Maven. As of the time of writing this tutorial, that is version 3.8.4.

Centre

Maven >

Central Repository

Maven >

Developer Centre

Books and Resources

Security

COMMUNITY

Community Overview

Project Roles

How to Contribute

Getting Help

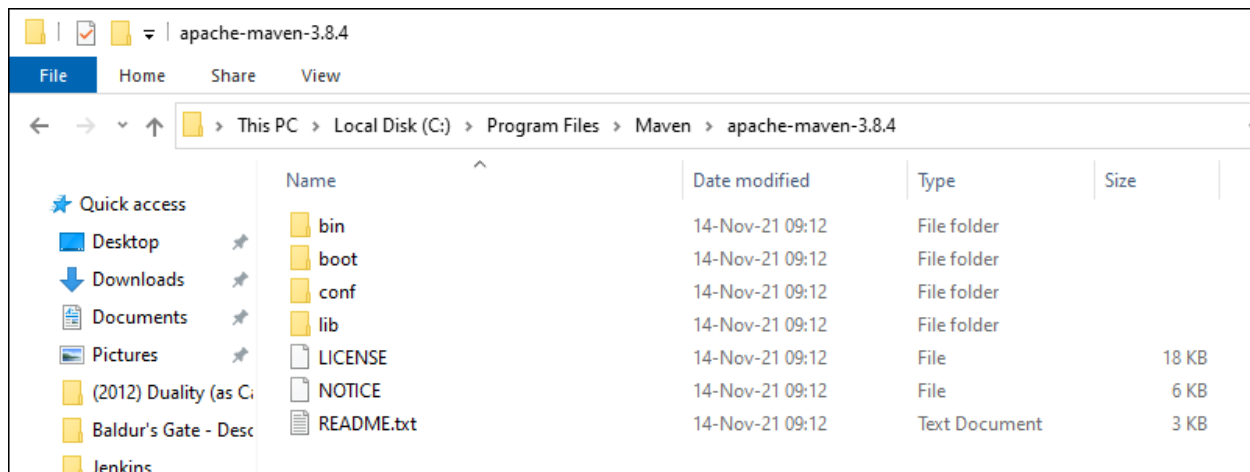
## Files

Maven is distributed in several formats for your convenience. Simply pick a ready-made binary distribution archive and follow the [installation instructions](#). Use a source archive if you intend to build Maven yourself.

In order to guard against corrupted downloads/installations, it is highly recommended to [verify the signature](#) of the release bundles against the public [KEYS](#) used by the Apache Maven developers.

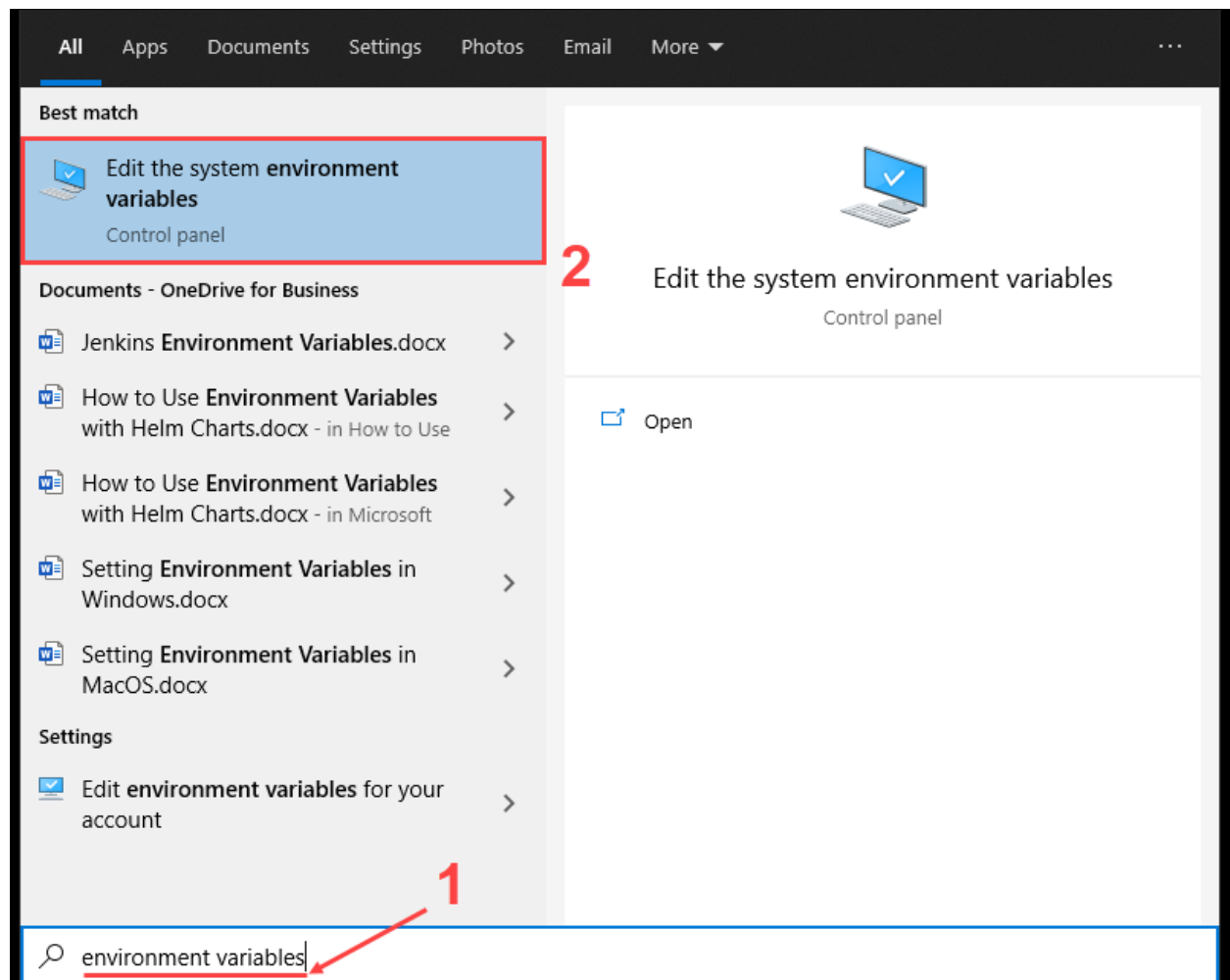
	Link	Checksums	Signature
Binary tar.gz archive	<a href="#">apache-maven-3.8.4-bin.tar.gz</a>	<a href="#">apache-maven-3.8.4-bin.tar.gz.sha512</a>	<a href="#">apache-maven-3.8.4-bin.tar.gz.asc</a>
Binary zip archive	<a href="#">apache-maven-3.8.4-bin.zip</a>	<a href="#">apache-maven-3.8.4-bin.zip.sha512</a>	<a href="#">apache-maven-3.8.4-bin.zip.asc</a>
Source tar.gz archive	<a href="#">apache-maven-3.8.4-src.tar.gz</a>	<a href="#">apache-maven-3.8.4-src.tar.gz.sha512</a>	<a href="#">apache-maven-3.8.4-src.tar.gz.asc</a>
Source zip archive	<a href="#">apache-maven-3.8.4-src.zip</a>	<a href="#">apache-maven-3.8.4-src.zip.sha512</a>	<a href="#">apache-maven-3.8.4-src.zip.asc</a>

3. Since there is no installation process, extract the Maven archive to a directory of your choice once the download is complete. For this tutorial, we are using *C:\Program Files\Maven\apache-maven-3.8.4*.

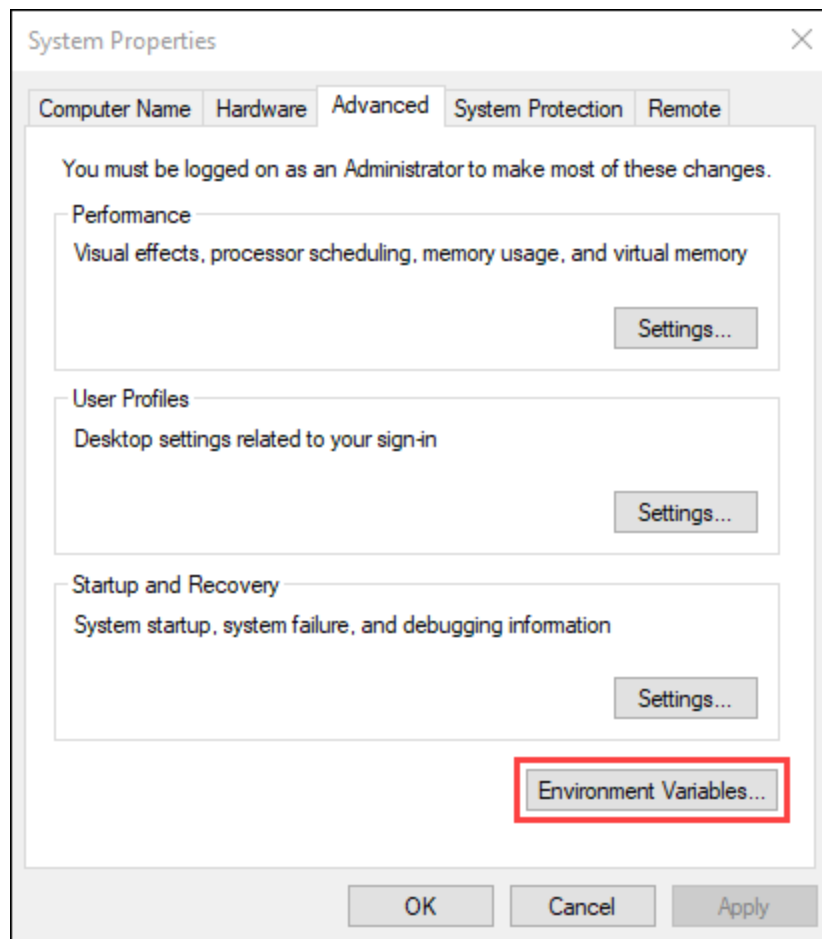


## Step 2: Add MAVEN\_HOME System Variable

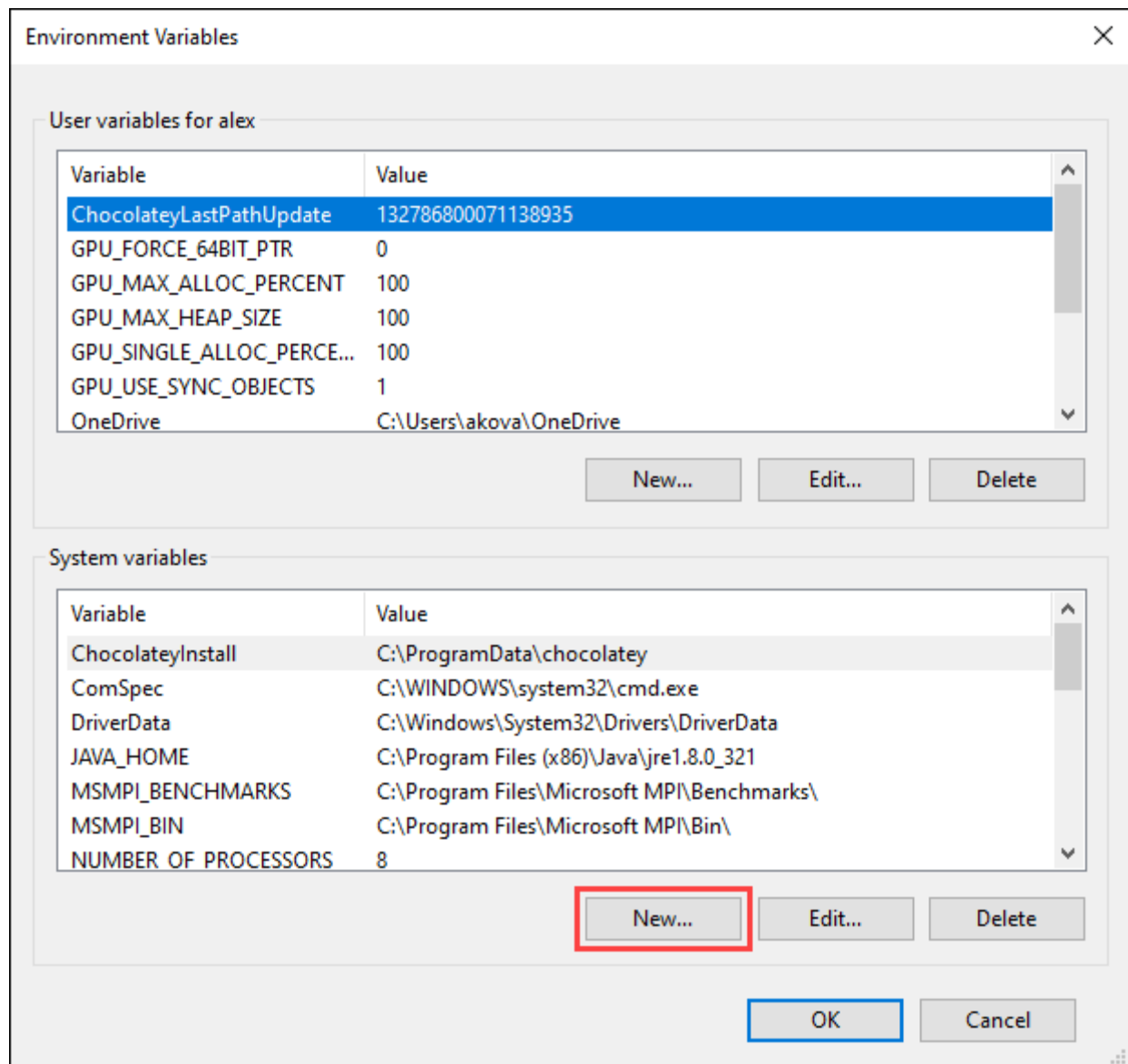
1. Open the Start menu and search for [environment variables](#).
2. Click the Edit the system environment variables result.



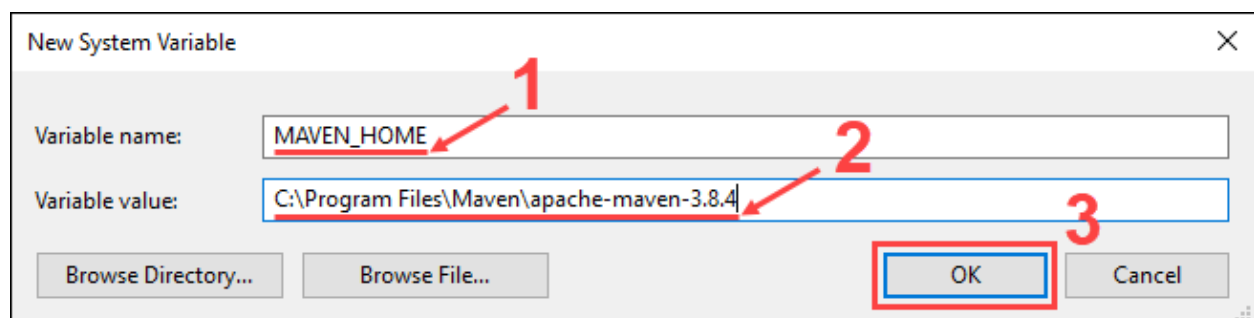
3. Under the *Advanced tab* in the *System Properties* window, click *Environment Variables*.



4. Click the New button under the *System variables* section to add a new system environment variable.

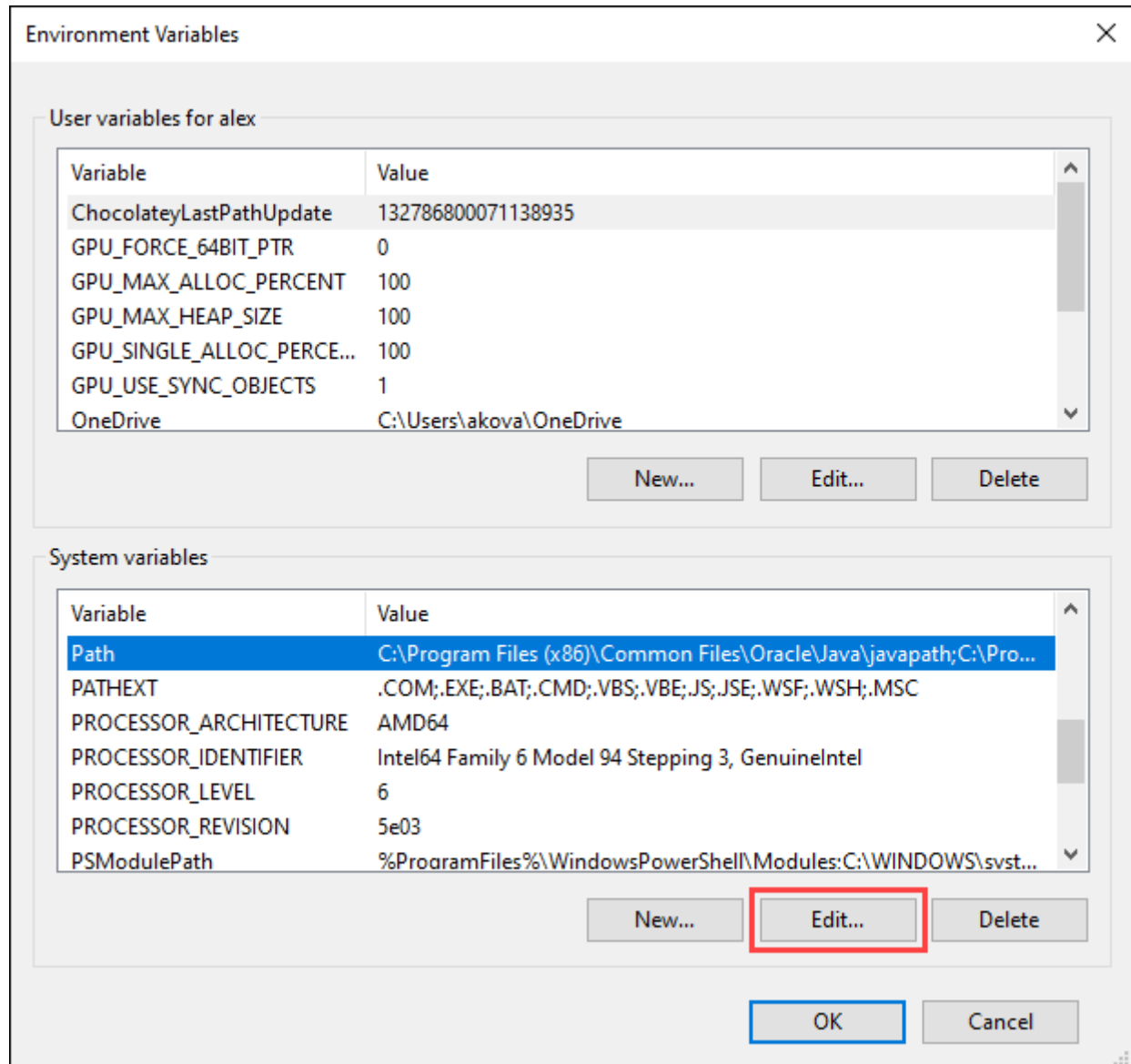


5. Enter MAVEN\_HOME as the variable name and the path to the Maven directory as the variable value. Click OK to save the new system variable.



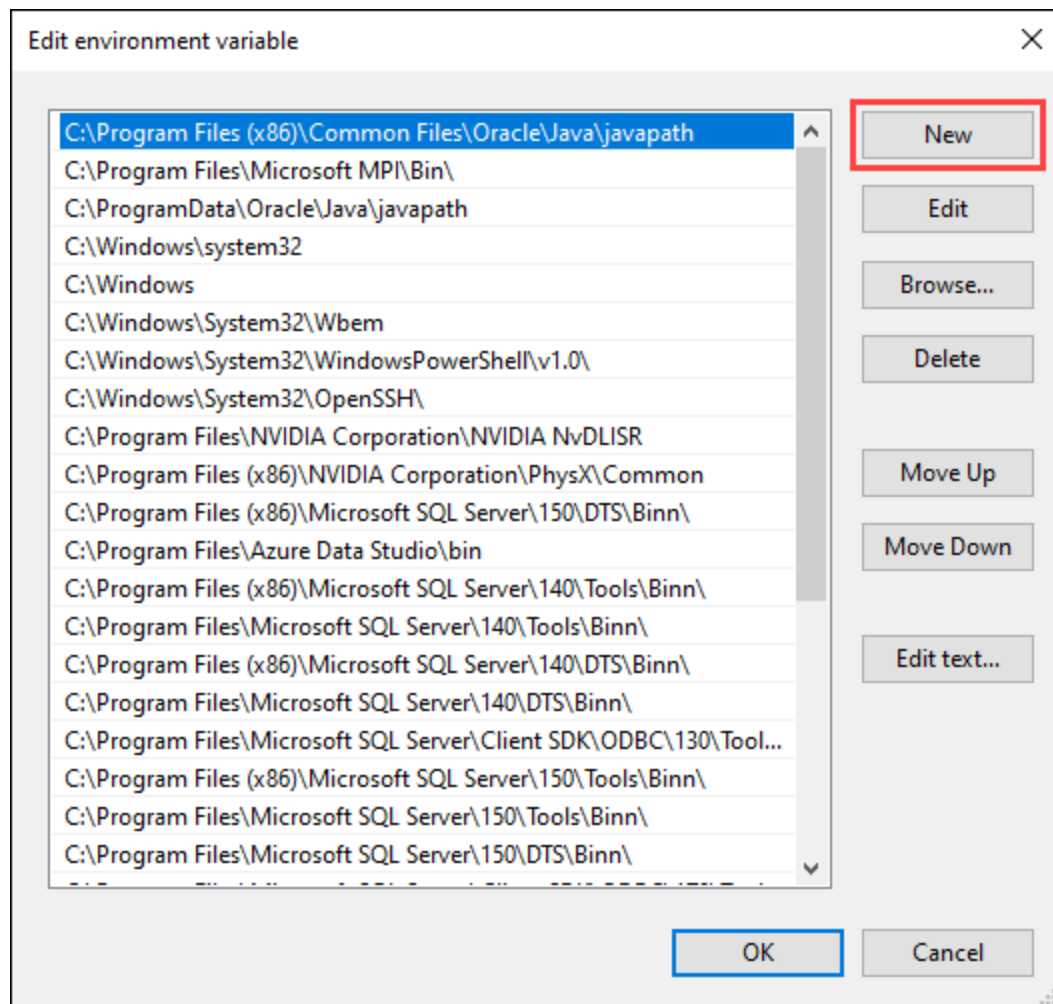
## Step 3: Add MAVEN\_HOME Directory in PATH Variable

1. Select the Path variable under the *System variables* section in the *Environment Variables* window. Click the Edit button to edit the variable.

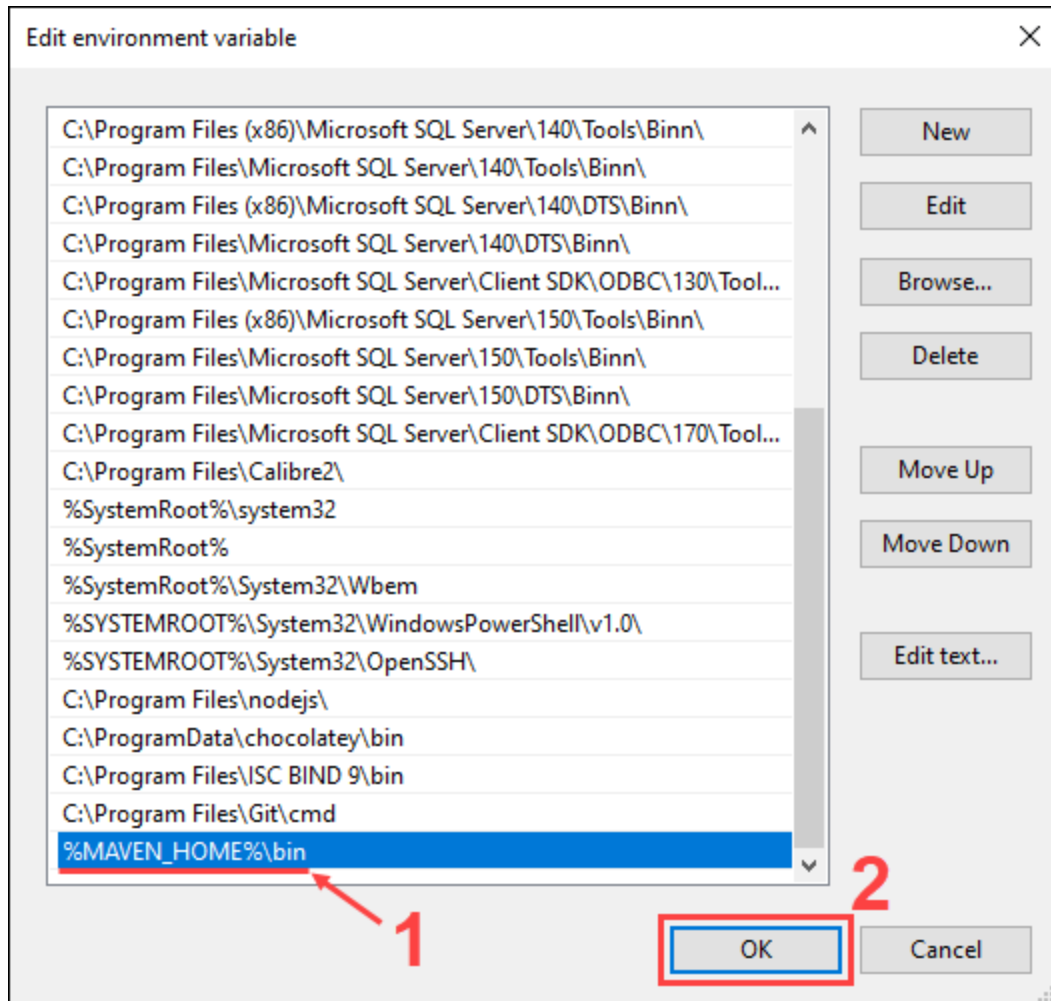


2. Click the New button in the *Edit environment variable* window.



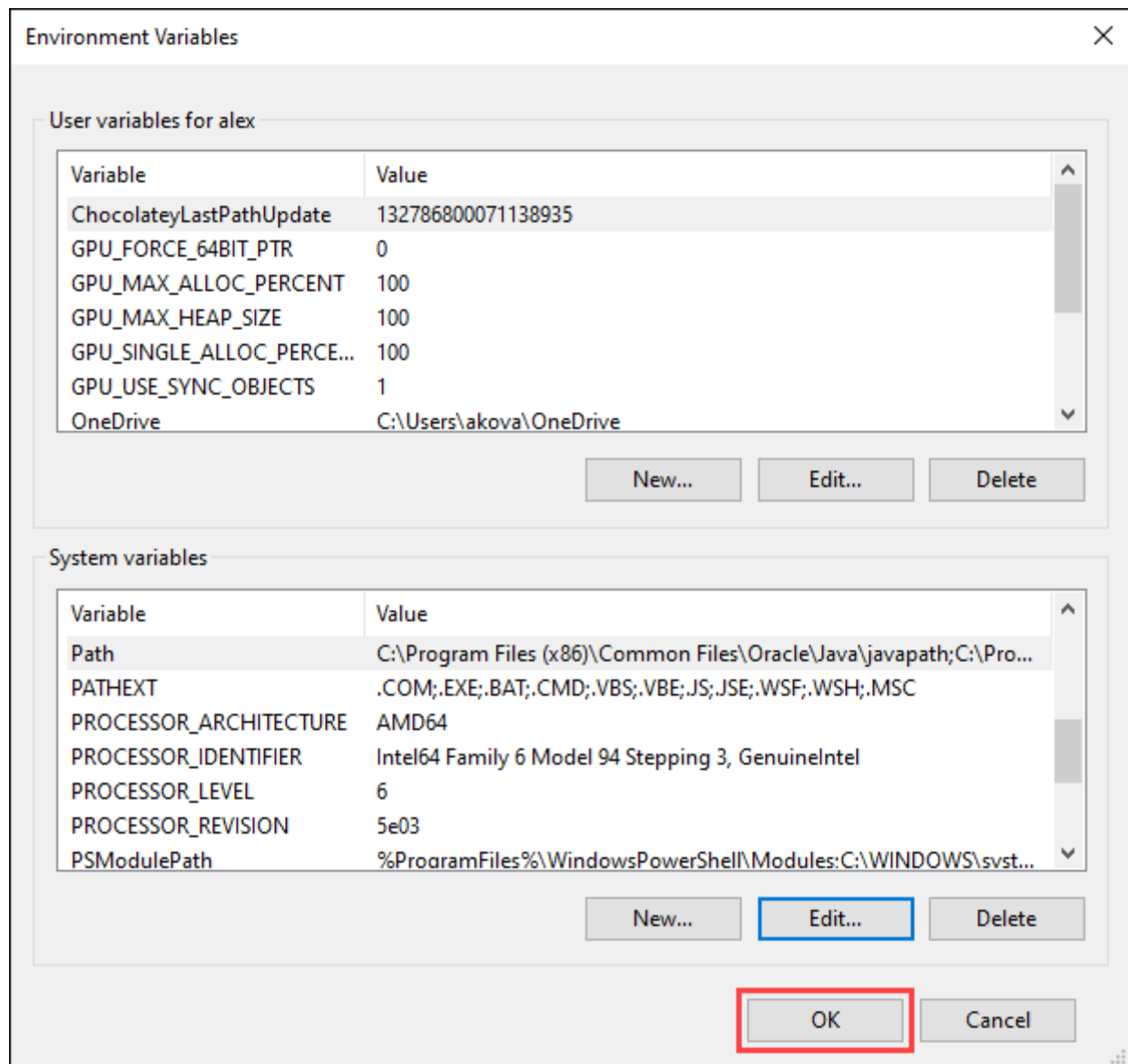


3. Enter %MAVEN\_HOME%\bin in the new field. Click OK to save changes to the Path variable.



Note: Not adding the path to the Maven home directory to the Path variable causes the 'mvn' is not recognized as an internal or external command, operable program or batch file error when using the mvn command.

4. Click OK in the *Environment Variables* window to save the changes to the system variables.



## Step 4: Verify Maven Installation

In the command prompt, use the following command to verify the installation by checking the current version of Maven:

```
mvn -version
```

```
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\akova>mvn -version
Apache Maven 3.8.4 (9b656c72d54e5bacbed989b64718c159fe39b537)
Maven home: C:\Program Files\Maven\apache-maven-3.8.4
Java version: 1.8.0_321, vendor: Oracle Corporation, runtime: C:\Program Files (x86)\Java\jre1.8.0_321
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 10", version: "10.0", arch: "x86", family: "windows"

C:\Users\akova>
```

## Conclusion

After reading this tutorial, you should have a copy of Maven installed and ready to use on your Windows system.