

How to start OpenSees and OpenSeesPy

2022/02/13

This document shows how to start OpenSees.

There are two ways to use OpenSees.

The first is to download "opensees.exe " directly.

The second method is to build "opensees.exe" from the source code of OpenSees.

The first method is simple, but "opensees.exe" can't change the source code.

So, please choose according to your application.

First, this document shows how to download "opensees.exe ".

Second, this document shows how to build "opensees.exe ".

After that, this document shows how to start OpenSeesPy.

this document shows how to build "opensees.pyd ".

○first way(download "opensees.exe " directly)

1.Go to the URL shown below, click "opensees~.exe" and download it.

URL: <https://opensees.berkeley.edu/OpenSees/user/download.php>

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[OPENSEESWIKI](#)
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[DOWNLOAD](#)
[SOURCE CODE](#)
[BUG REPORT](#)

Search

To customize the quicklinks, go to [Site Map](#)

Records added successfully.

OpenSees Executable Distribution

Current version is: 3.2.2

OpenSees executables are available for download. The current version has been tested and is generally stable. However, users may encounter problems when running a new problem for the first time. For that reason we we strongly encourage you to participate in the various [message boards](#) hosted by OpenSees. And **please** report any [bugs](#) you find!

OpenSees uses [Tcl/Tk](#), a general purpose scripting language that we have extended with commands for OpenSees. For MAC users It is necessary that you download and install Tcl/Tk before you can use OpenSees. A link is provided next to the download page.

We are only now releasing 64 bit applications.

Windows Version

DOWNLOAD Windows 64 bit Binaries	
Release_3.2.2	OpenSees3.2.2-x64.exe

click



2.

Unzip the downloaded zip file and open “OpenSees3.2.2-x64.exe¥bin”. See the last page for how to run opensees.

PC > ダウンロード > OpenSees3.2.2-x64.exe > bin				
名前	更新日時	種類	サイズ	
OpenSees.exe	2021/05/11 19:17	アプリケーション	20,895 KB	
vcruntime140.dll	2021/05/11 19:17	アプリケーション拡張	84 KB	

○Second way(build "opensees.exe" from the source code)

<Install Visual Studio Community (2019) >

1. Search "Visual Studio Community" by search engine.

visualstudio.microsoft.com > vs > community ▼

[Visual Studio Community 2019 - Microsoft](https://visualstudio.microsoft.com/ja/?vs=community)

2020/10/26 — **Visual Studio Community**. Web アプリケーションとクラウド サービスだけでなく、Windows、Android、iOS 向けのモダン アプリケーションを作成するためのフル機能を装備した、拡張可能な無料の IDE です。 **Visual Studio ...**

2. click "download Visual Studio"

Visual Studio Community

Web アプリケーションとクラウド サービスだけでなく、Windows、Android、iOS 向けのモダン アプリケーションを作成するためのフル機能を装備した、拡張可能な無料の IDE です。

Visual Studio のダウンロード ↓

3. The installer is downloaded on the screen below, so run the installer.



4. select "install" of "Visual Studio Community 2019".



5. Select "Desktop development with C++" for the workload, download and install it.

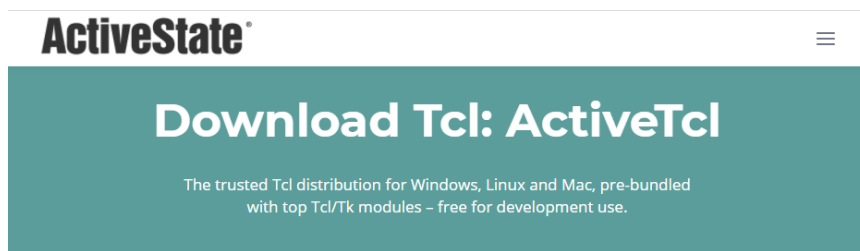


<download tcl-file>

6. for web site “Active State”, download Active Tcl.

URL: <https://www.activestate.com/products/tcl/downloads/>

Select “C:\Program Files\tcl” for installation location.



Get ActiveTcl Community Edition

Free Download for Windows | Linux | Mac

ActiveTcl 8.6

ActiveTcl 8.5

ActiveTcl is now offered through the ActiveState Platform. Create a **free** account above and get these benefits:

- Download ActiveTcl and get notified of updates
- Share your Tcl runtime environment with your team
- Coming Soon: Customize Tcl with only the packages you need

Languages		Requested Packages	
Tcl 8.6.5	Free	Tcl 8.6 Packages	
Platforms		unix	3.1.17
Linux CentOS / RHEL 6 / Ubuntu 10.10 / FC13 / OpenSUSE 11.2		expat	2.0.1
Windows 10		metasploit	4.0.0
		tklib	8.6.5

7. Create your account

ActiveState

Create a Free Account

Already have an account? [Sign In](#)

Use your Email Or Github

Email Address

Pick a Username

Password

Confirm Password

Create Account

☒ Yes, I would like to receive occasional emails on promotions, news and events from ActiveState.

You're just one step away from your download.

Create your account to access your own copy of "activetcl-8.6" & get notified when a new version is available.

Need a custom build?
You can also build Python or Perl with just the packages you want.

Build IN PROGRESS 12 of 24 Packages Built

Custom builds are available for Linux, Windows, and Mac.

8. click "Fork Project"

https://platform.activestate.com/activestate/ActiveTcl-8.6/fork?actions=change_name

ActiveState Your Dashboard Featured Projects & Languages Dev Tools ryota-matsui

Fork the "ActiveTcl-8.6" Project

This project will be forked into your **ryota-matsui** account. You can also fork into organizations once you create or join some.

Choose a name for the fork

Looks like you already have a project with this name. Give it a new name to continue.

Fork Project Cancel

9. click "Download.exe" to download installer

ActiveState Your Dashboard Featured Projects & Languages Dev Tools ryota-matsui

ActiveState
ActiveTcl-8.6 Fork It Public Project

Overview Configuration **Download Builds** History

Windows

macOS

Linux

Build Status **COMPLETE** 1 Packages Built

> Package build status

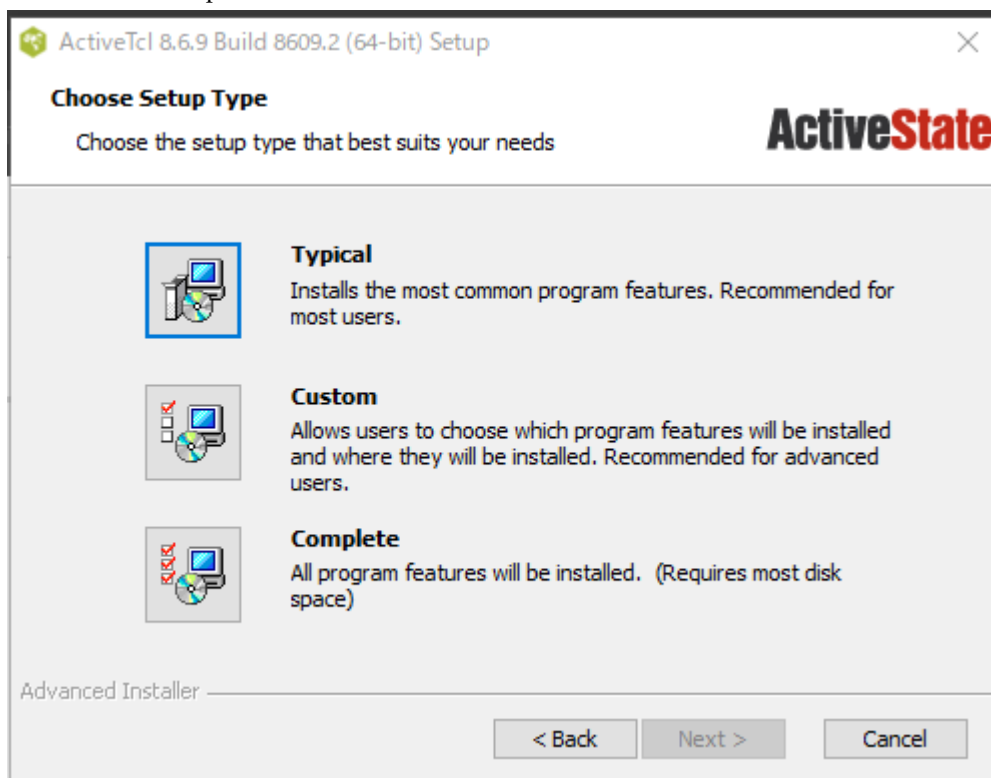
Download Installer

Download .exe ActiveTcl-8.6.9.8609.2-MSWin32-x64-5ccbd9ac8.exe

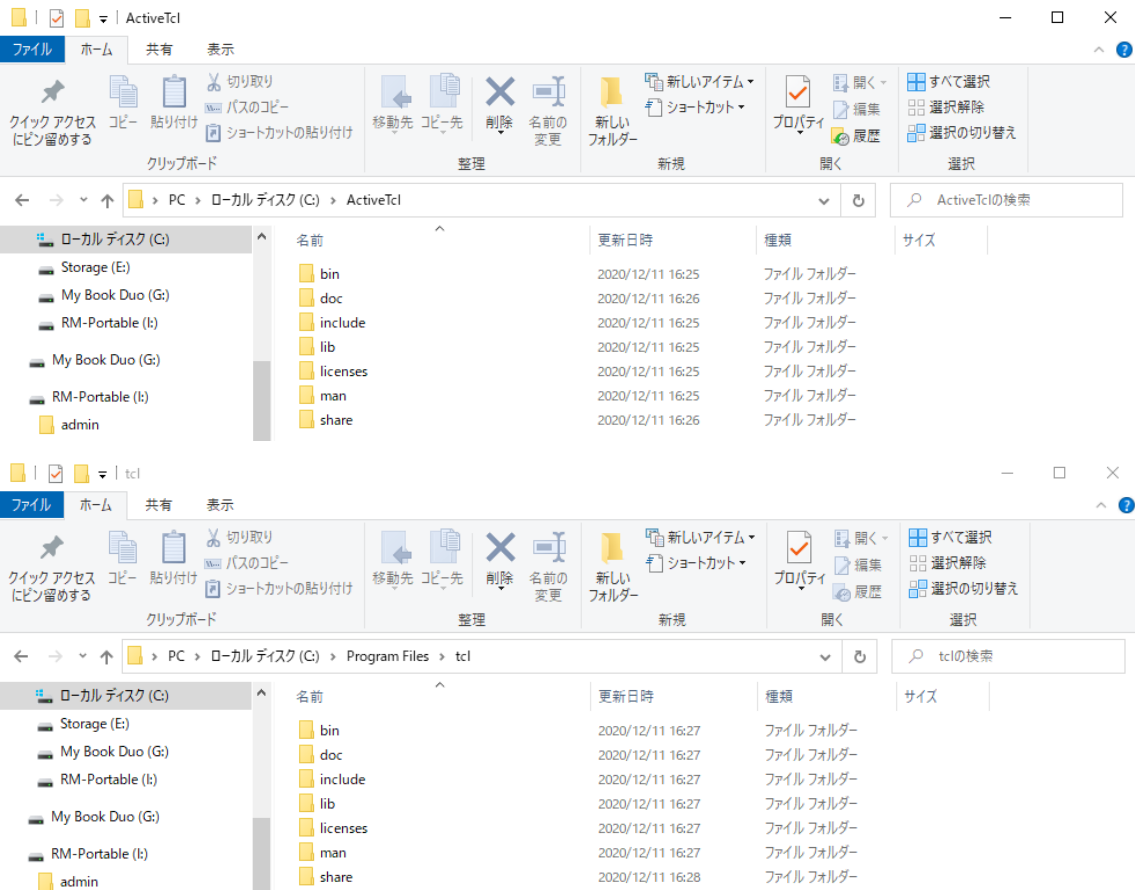
10. Install Active Tcl



11. Select "Complete"



12. When installed, ActiveTcl is stored on the C drive, so copy the contents to "C:Program Files\tcl".



<download source code of OpenSees>

13. For website “GitHub”, download source code of OpenSees.

URL: <https://github.com/OpenSees/OpenSees>

OpenSees / OpenSees

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Code Issues 56 Pull requests 11 Actions Projects Security Insights

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GitHub is home to over 50 million developers working together to host and review code, manage projects, and build software together.

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master

Go to file Code

About

OpenSees Source Code Repository

Readme

View license

Releases 11

OpenSees Version ... Latest on 26 Mar

Click “Releases”

Packages

No packages published

File/Folder	Commit Message	Time Ago
DEVELOPER	Revert "Added J2CyclicBoundig3D and J2CyclicB..."	last month
EXAMPLES	Revert "Added J2CyclicBoundig3D and J2CyclicB..."	last month
MAKES	fmk - ading new Makefile.def for stampede 2	28 days ago
OTHER	Revert "Added J2CyclicBoundig3D and J2CyclicB..."	last month
SCRIPTS	Revert "Added J2CyclicBoundig3D and J2CyclicB..."	last month
SRC	Update FourNodeTetrahedron.cpp	5 days ago
Win32	Merge pull request #444 from MassimoPetracca/...	13 days ago
Win64	Merge branch 'master' into master	3 days ago
Workshops	Revert "Added J2CyclicBoundig3D and J2CyclicB..."	last month

14. Select Version 3.1.0

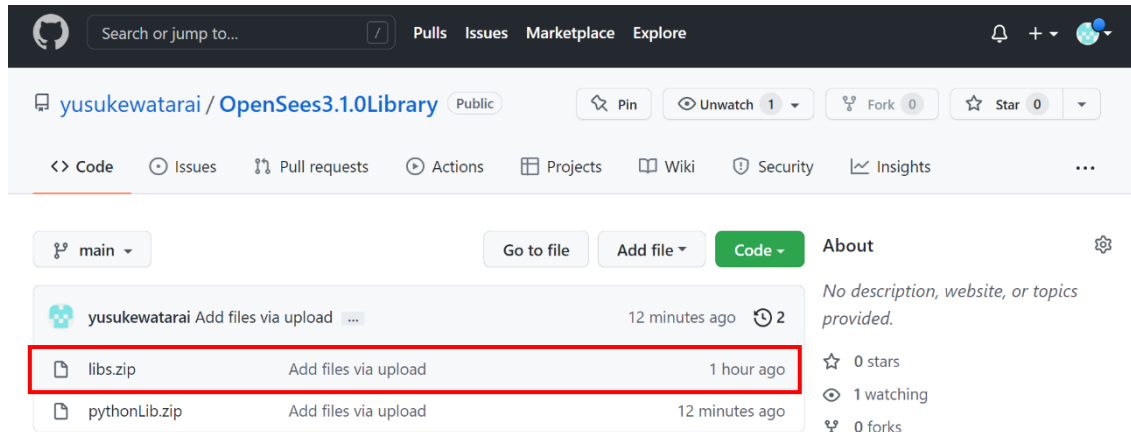
The screenshot shows the GitHub releases page for the OpenSees repository. At the top, there are tabs for 'Releases' and 'Tags'. The 'Releases' tab is active. On the left sidebar, there are two release entries: 'v3.2.0' with commit hash 'fb2159f' and a 'Compare' button, and 'v3.1.0' with commit hash '4ea6720' and a 'Verified' badge, also with a 'Compare' button. The main content area displays 'OpenSees Version 3.2.0' as the latest release, noting it was released on 26 Mar with 538 commits since. Below this, there are two assets: 'Source code (zip)' and 'Source code (tar.gz)'. Further down, 'version 3.1.0' is listed as a verified release from 23 Nov 2019 with 698 commits since, also featuring the same two source code assets.

15. Click and download “Source Code(zip)” and unzip the file. The storage location can be anywhere, but this time please save to “C:\¥opensees code”.

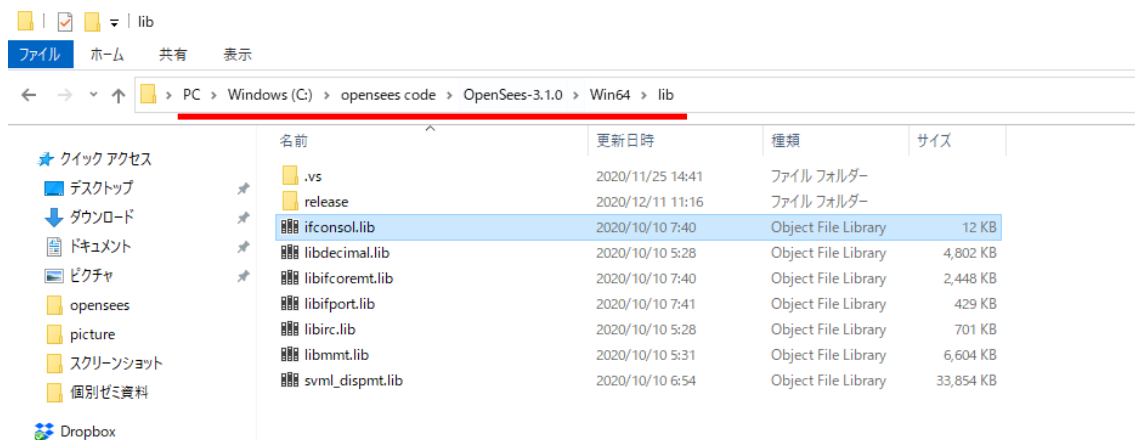
This screenshot shows the main GitHub repository page for OpenSees. The repository name 'OpenSees / OpenSees' is at the top, along with statistics: 49 watches, 199 stars, and 278 forks. Navigation links for 'Code', 'Issues' (56), 'Pull requests' (11), 'Actions', 'Projects', 'Security', and 'Insights' are visible. The 'Releases' tab is selected in the sidebar. The main content area shows 'version 3.1.0' as a verified release from 23 Nov 2019 with 698 commits since. It lists two assets: 'Source code (zip)' and 'Source code (tar.gz)'. The left sidebar shows the release history with 'v3.1.0' (4ea6720) and 'v3.2.0' (fb2159f) listed.

16. Go to the following URL in GitHub and download the lib file for Visual Studio. Please download libs.zip. It contains 7 lib files.

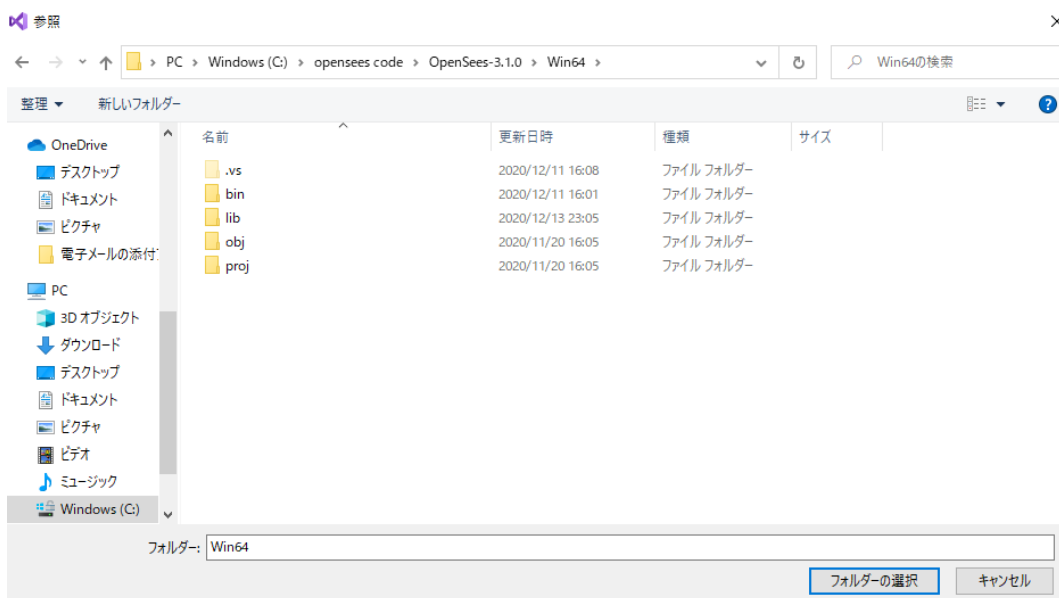
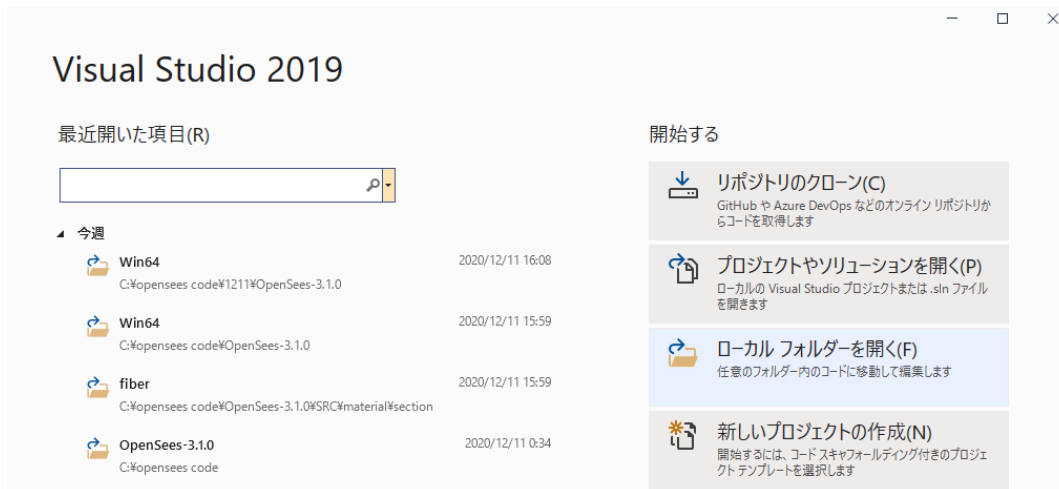
URL: <https://github.com/yusukewatarai/OpenSees3.1.0Library>



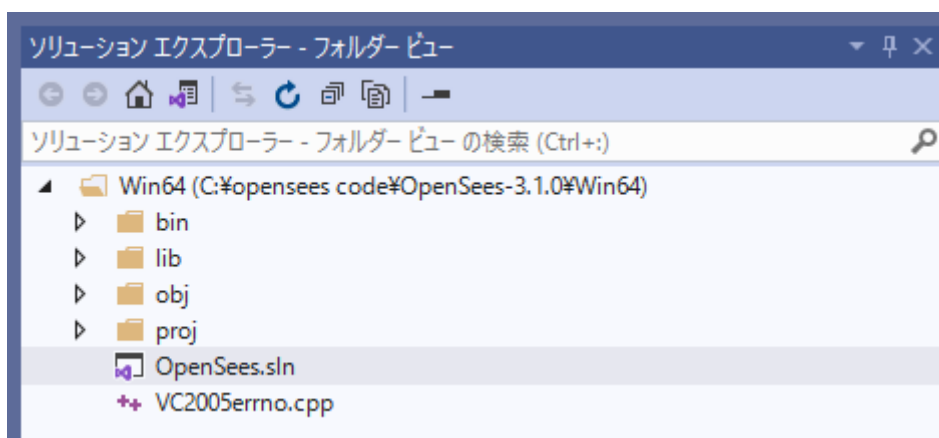
17. Add 7 downloaded lib files to " C:\openseescode/OpenSees-3.1.0/Win64/lib " .



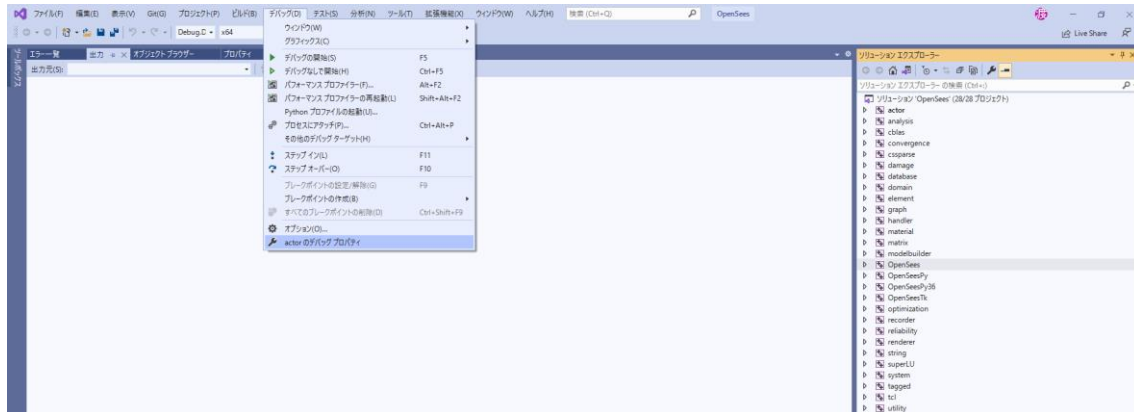
18. Start Visual Studio Community 2019 and select " C:\openseescode/OpenSees-3.1.0/Win64" from "Open Local Folder", and press "Select Folder".




19. Double-click “opensees .sln” in solution explorer.

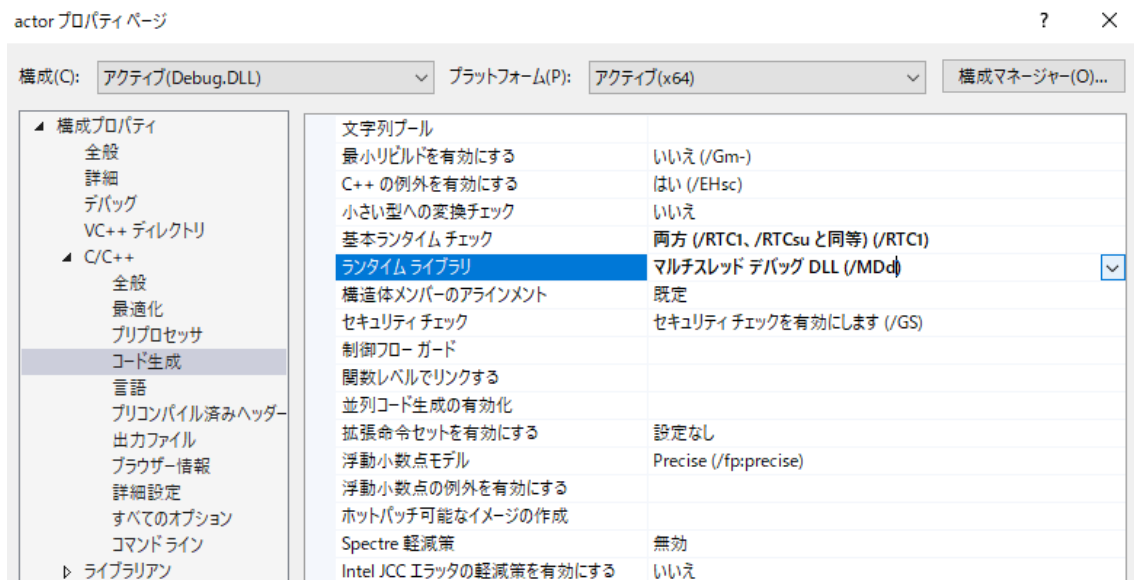


20. Serect “debug” ⇒ “debug property of actor”



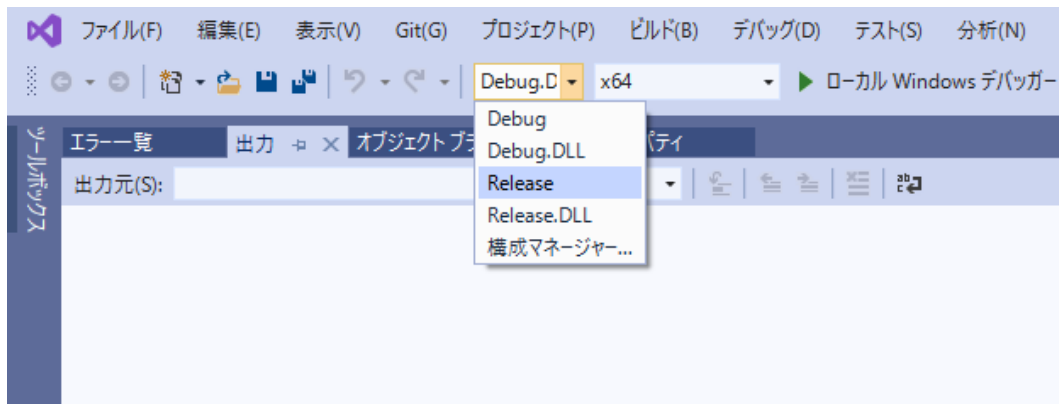
21. in debug property of actor, select “C/C++” ⇒ “make code”.

in “make code”, click the  button to the right of “Runtime library” and change it to “Multi-threaded Debug DLL (/MDd)”.

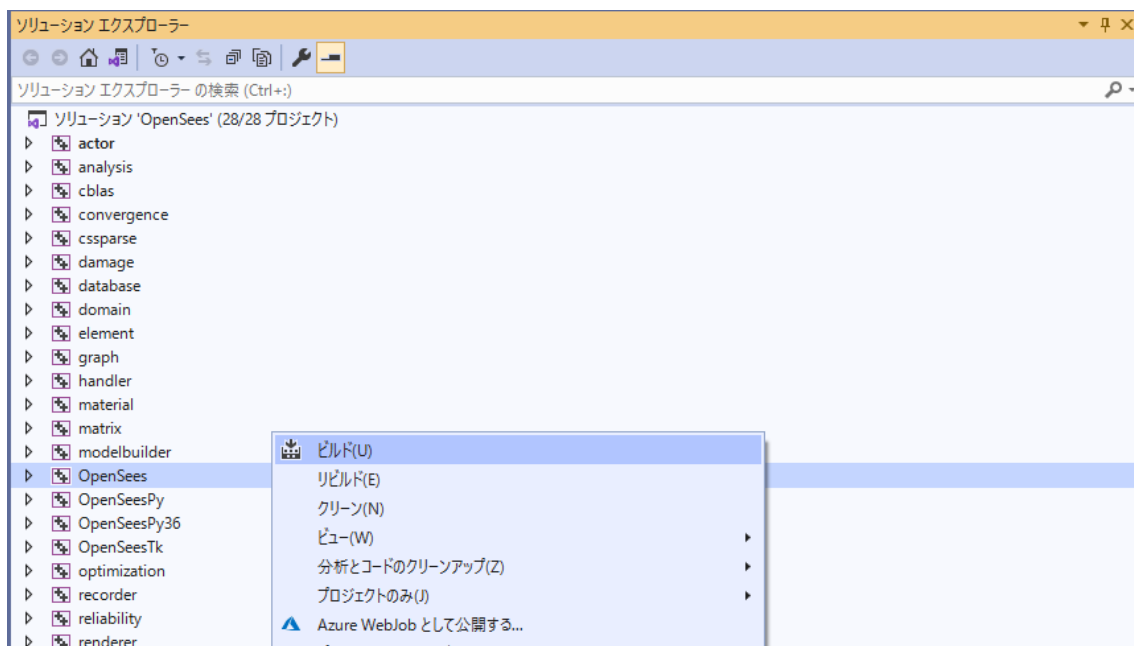


After the change, click "Apply" at the bottom of the page.

22. Change the “Debug.DLL” on the main page of Visual Studio Community 2019 to “Release”.



23. Right-click “OpenSees” in solution explorer and click “build”.



24. It takes about 10 minutes to build (depending on PC performance). During build, you'll see countless errors, but it's okay.



At the end of the output field, you're seeing if the build was successful.

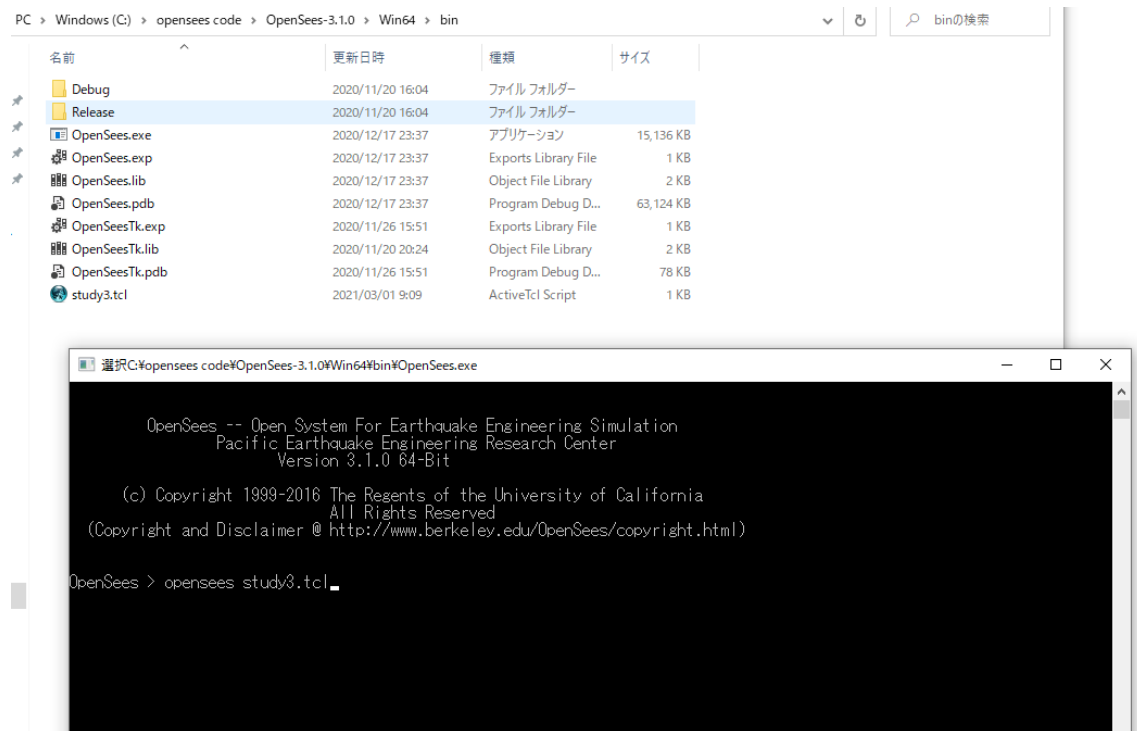
===== すべてリビルド: 25 正常終了、0 失敗、0 スキップ =====

If everything is completed normally like this, it is OK.

25. If everything is successful, there is Opensees.exe in "C:\openseescode\OpenSees-3.1.0\Win64\bin".

名前	更新日時	種類	サイズ
Debug	2020/11/20 16:04	ファイル フォルダ	
Release	2020/11/20 16:04	ファイル フォルダ	
C2.txt	2020/11/27 2:13	テキストドキュメント	1 KB
OpenSees.exe	2020/12/17 23:37	アプリケーション	15,136 KB
OpenSees.exp	2020/12/17 23:37	Exports Library File	1 KB
OpenSees.lib	2020/12/17 23:37	Object File Library	2 KB
OpenSees.pdb	2020/12/17 23:37	Program Debug D...	63,124 KB
OpenSeesTk.exp	2020/11/26 15:51	Exports Library File	1 KB
OpenSeesTk.lib	2020/11/20 20:24	Object File Library	2 KB
OpenSeesTk.pdb	2020/11/26 15:51	Program Debug D...	78 KB
study3.tcl	2020/11/13 5:02	ActiveTcl Script	1 KB

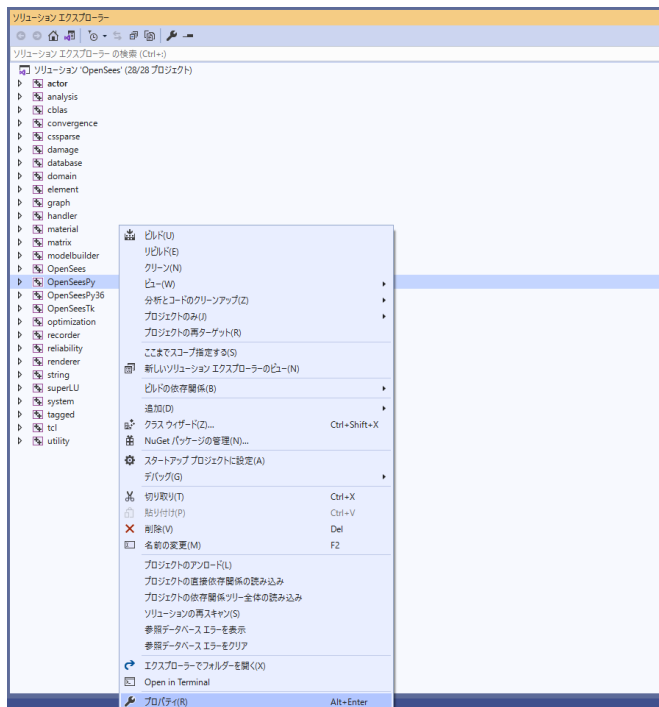
26. Start "opensees.exe" and then type "opensees ~~~.tcl" to run. In this case, tcl-files must be in the same folder.




- build "opensees.pyd"

To build OpenSeesPy, you need to build OpenSees, so build OpenSees first.

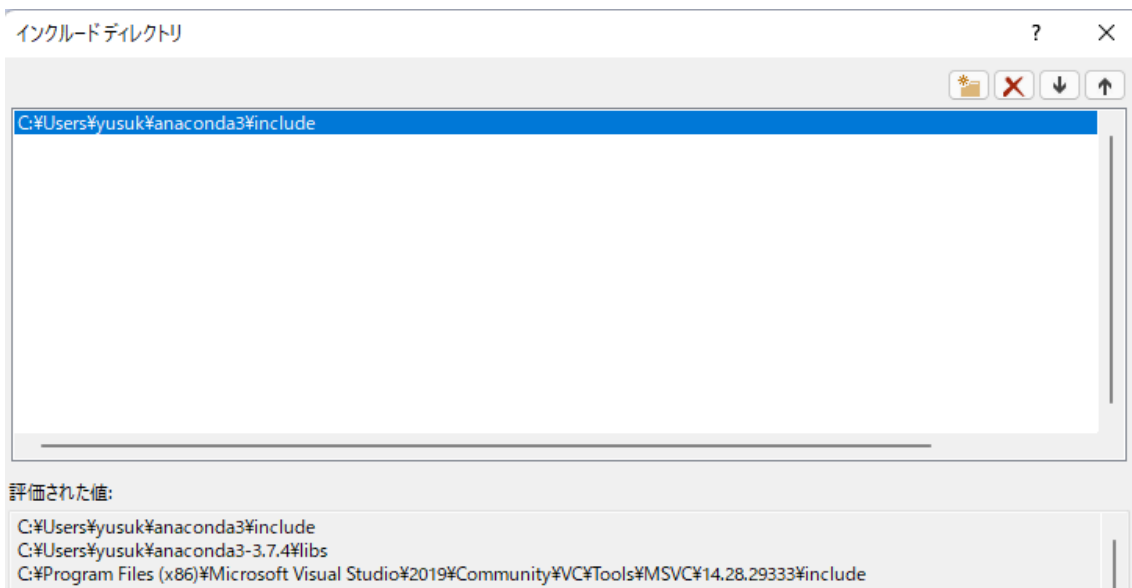
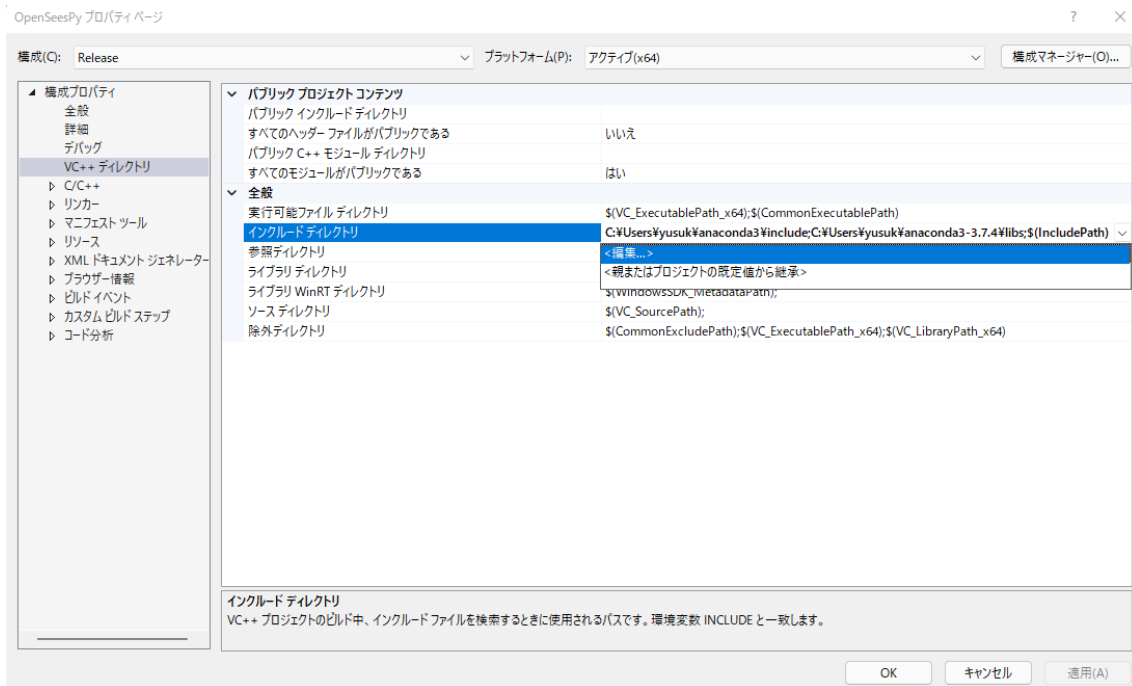
1. Right-click "OpenSeesPy" in solution explorer and click "property" in Visual Studio Community 2019



2. in property of OpenSeesPy, select “VC++ directory” \Rightarrow “include directory”.
in “include directory”, click  the button and click “edit”.

3. If you have installed anaconda3 and the following folder contains “Python.h”, please add new directory with the link of folder.If you not, please install anaconda3.

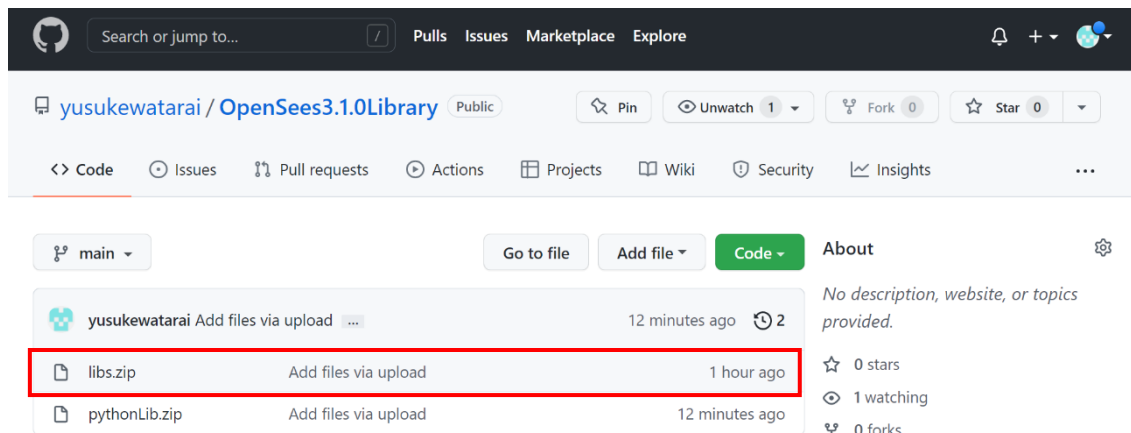
Folder: C:\Users\%users name%\anaconda3\include



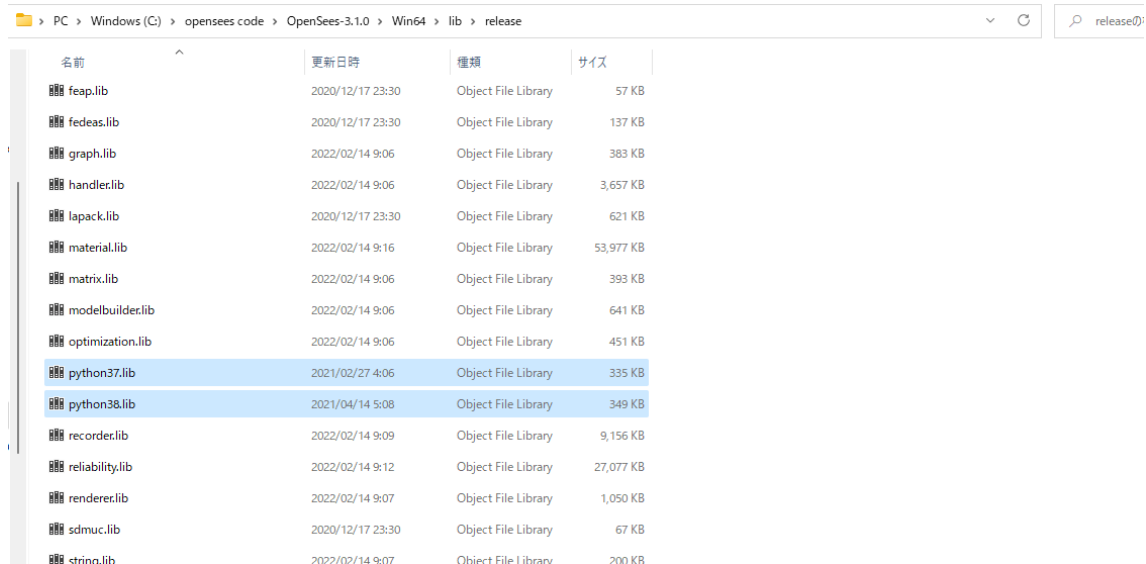
After the change, click "OK" at the bottom of the page.

4. Go to the following URL in GitHub and download the lib file for Visual Studio. Please download pythonLib.zip. It contains 2 lib files.

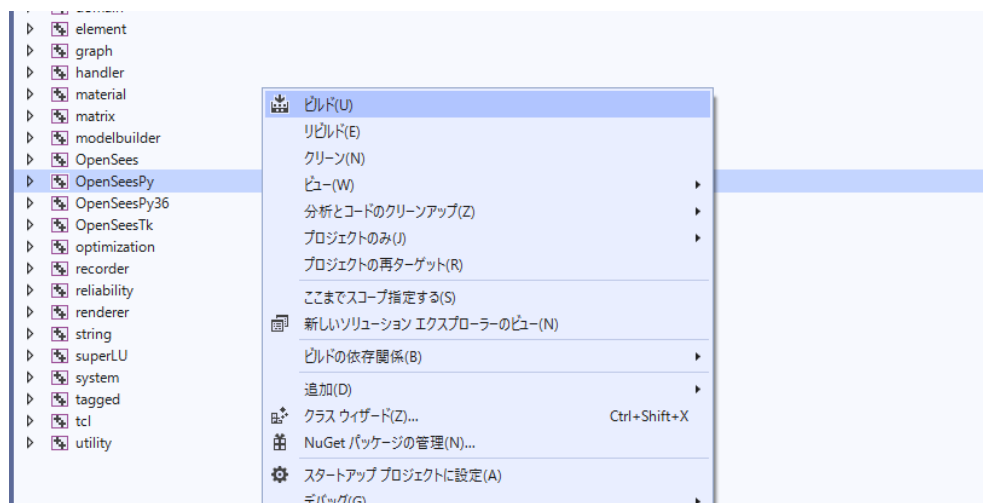
URL: <https://github.com/yusukewatarai/OpenSees3.1.0Library>



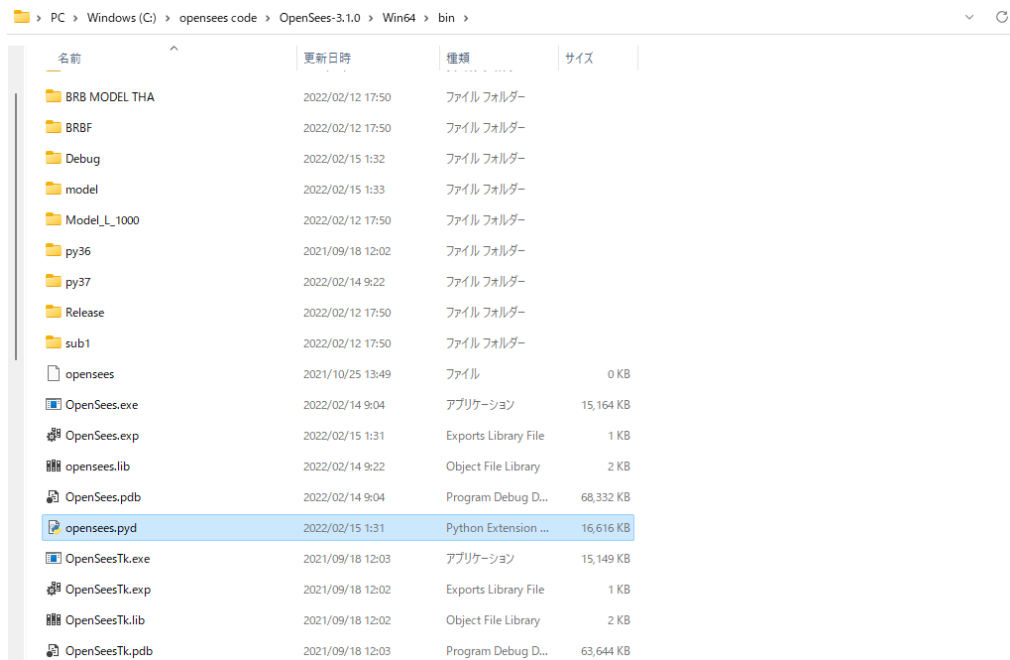
5. Add 2 downloaded lib files to " C:\openseescode/OpenSees-3.1.0/Win64/lib/release " .



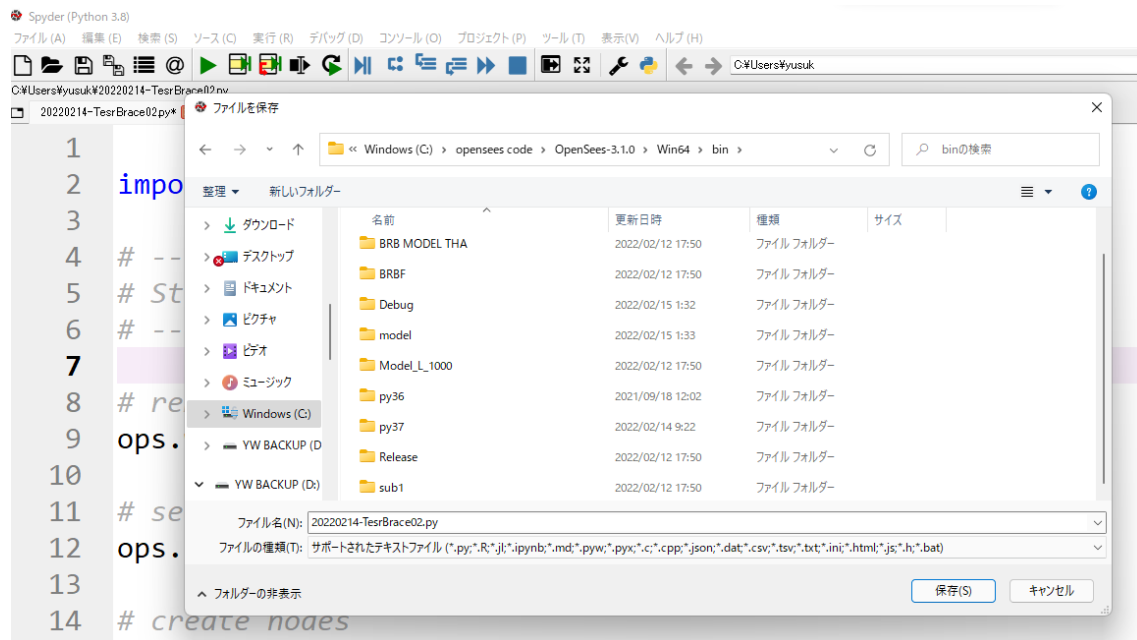
6. In Visual Studio, Right-click "OpenSeesPy" in solution explorer and click "build".



7. If everything is successful, there is Opensees.pyd in "C:\openseescode\OpenSees-3.1.0\Win64\bin".



8. In this case, tcl-files must be in the same folder.



Open spyder of anaconda3. Add the model file to the same folder as "openseespy.pyd" you just created.

At the beginning of the code in the model file, add the following code.

Code: import openseespy.opensees as ops