

Prep. for PA



Prerequisite

Prerequisite

You need to install five ingredients

1. Visual Studio (or your favorite ide/editor)
2. Cmake
3. Git
4. Github account
5. GitKraken

Installation of Visual Studio

<https://visualstudio.microsoft.com/ko/vs/community/>

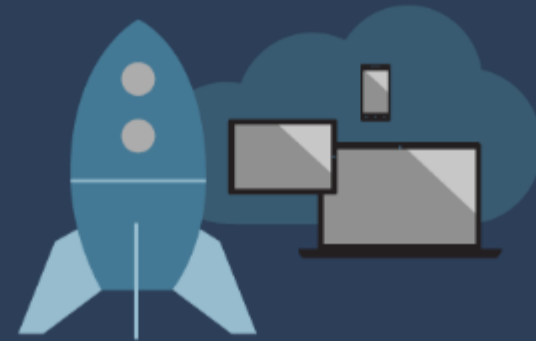
Visual Studio Community

Android, iOS 및 Windows용 최신 응용 프로그램뿐 아니라 웹 응용 프로그램 및 클라우드 서비스를 만들기 위한 모든 기능을 갖춘 확장 가능한 무료 IDE입니다.

Windows

macOS

VS Community 2017 다운로드 



Installation of CMake

<https://cmake.org/download/>

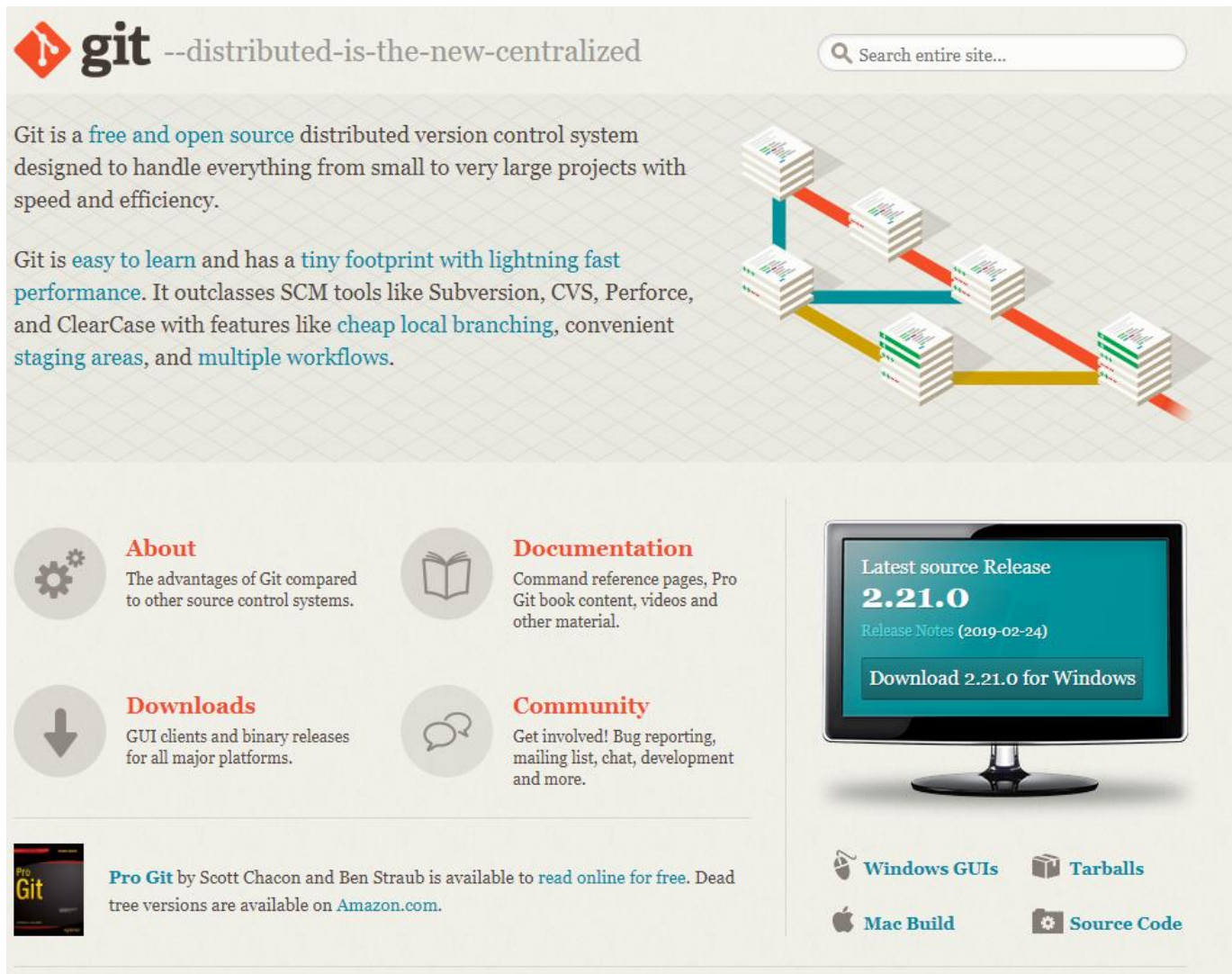
Scripting build process

Binary distributions:

Platform	Files
Windows win64-x64 Installer: Installer tool has changed. Uninstall CMake 3.4 or lower first!	cmake-3.14.0-rc3-win64-x64.msi
Windows win64-x64 ZIP	cmake-3.14.0-rc3-win64-x64.zip
Windows win32-x86 Installer: Installer tool has changed. Uninstall CMake 3.4 or lower first!	cmake-3.14.0-rc3-win32-x86.msi
Windows win32-x86 ZIP	cmake-3.14.0-rc3-win32-x86.zip
Mac OS X 10.7 or later	cmake-3.14.0-rc3-Darwin-x86_64.dmg
	cmake-3.14.0-rc3-Darwin-x86_64.tar.gz
Linux x86_64	cmake-3.14.0-rc3-Linux-x86_64.sh
	cmake-3.14.0-rc3-Linux-x86_64.tar.gz

Installation of Git

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



The screenshot shows the Git website homepage. At the top left is the Git logo (a red diamond with a white 'G' and a red 'i') followed by the text "git --distributed-is-the-new-centralized". To the right is a search bar with the placeholder text "Search entire site...". Below the header is a main text area with two paragraphs. The first paragraph describes Git as a free and open source distributed version control system. The second paragraph lists features like easy learning, tiny footprint, lightning fast performance, cheap local branching, convenient staging areas, and multiple workflows. To the right of the text is a 3D diagram of a distributed version control system with multiple nodes connected by lines. Below the main text are four circular icons with corresponding text: "About" (gears), "Documentation" (book), "Downloads" (down arrow), and "Community" (speech bubbles). On the right side, there is a monitor displaying the latest source release "2.21.0" with a "Download 2.21.0 for Windows" button. At the bottom, there is a section for "Pro Git" by Scott Chacon and Ben Straub, with links to "Windows GUIs", "Mac Build", "Tarballs", and "Source Code".

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.

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
2.21.0
Release Notes (2019-02-24)
Download 2.21.0 for Windows

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

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

Installation of GitKraken

<https://www.gitkraken.com/>

Easy Git GUI client. If you want to use other things, go ahead
Make sure that you connect your github id with git kraken

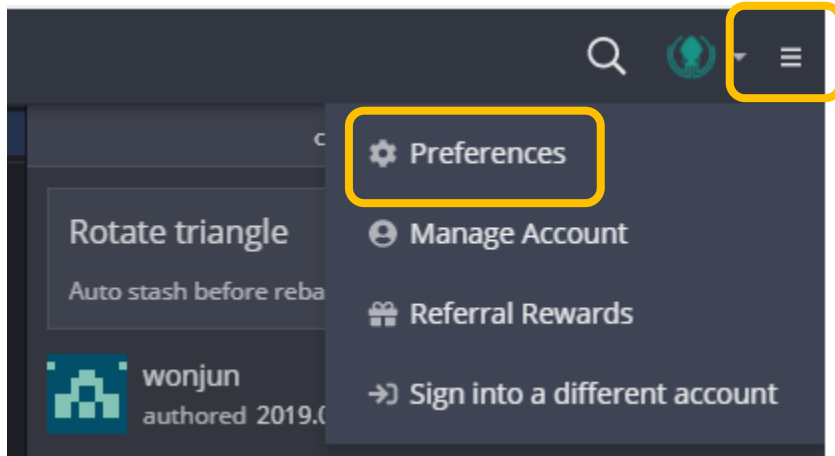


The image is a promotional banner for GitKraken, featuring a dark blue background with a subtle pattern of icons. In the center, there is a large teal logo of a kraken. Below the logo, the text "axosoft GitKraken" is displayed in white, with "axosoft" in a smaller font and "GitKraken" in a larger, bold font. Underneath, "Legendary Dev Tools" is written in a smaller, orange font. To the left of the central logo, there is a section for "Git Client" with the subtitle "For Windows, Mac and Linux" and a screenshot of the Git Client interface. Below this section is a red button with the text "Free Download" and "Current version & all platforms" underneath. To the right of the central logo, there is a section for "Glo Boards" with the subtitle "For Task and Issue Tracking" and a screenshot of the Glo Boards interface. Below this section is a red button with the text "Free Sign Up" and "See features" underneath.

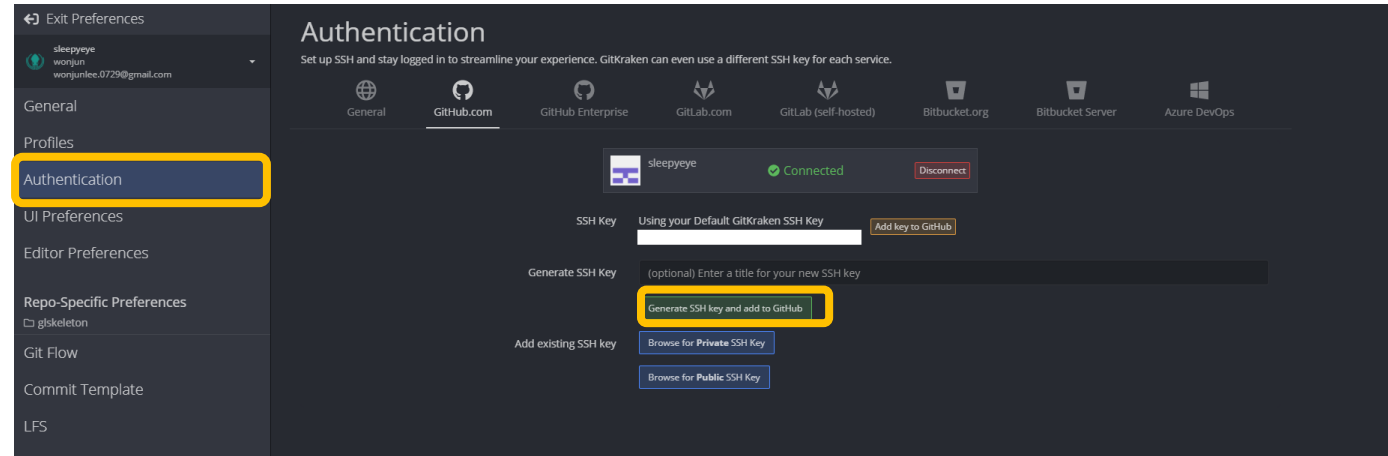
Set SSH for Git Kraken

If you don't do this, you cannot push your commit.

1. Go to preference
2. Go to authentication
3. Generate SSH key and add to github



Step 1



Step 2



Clone the Skeleton

Clone The Skeleton Project

If you have programming background

- Skip this and read README.md in skeleton project
- That is much more simple and easy to follow if you have some experiences

If you DON'T have programming background

- Follow instructions in following pages
- Instructions assumed that you are using git kraken

Clone The Skeleton - 1

6 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file **Clone or download**

sleepyeye	Add screenshot images	
doc	Add screenshot images	
extern	Fix typo	
src	Fix typo	
.gitignore	init	
.gitmodules	init	2 days ago
CMakeLists.txt	Remove test project from MSVC	2 days ago
README.md	Add more detailed descriptions for building cmake project in window	2 days ago

README.md

Clone with HTTPS ? Use SSH

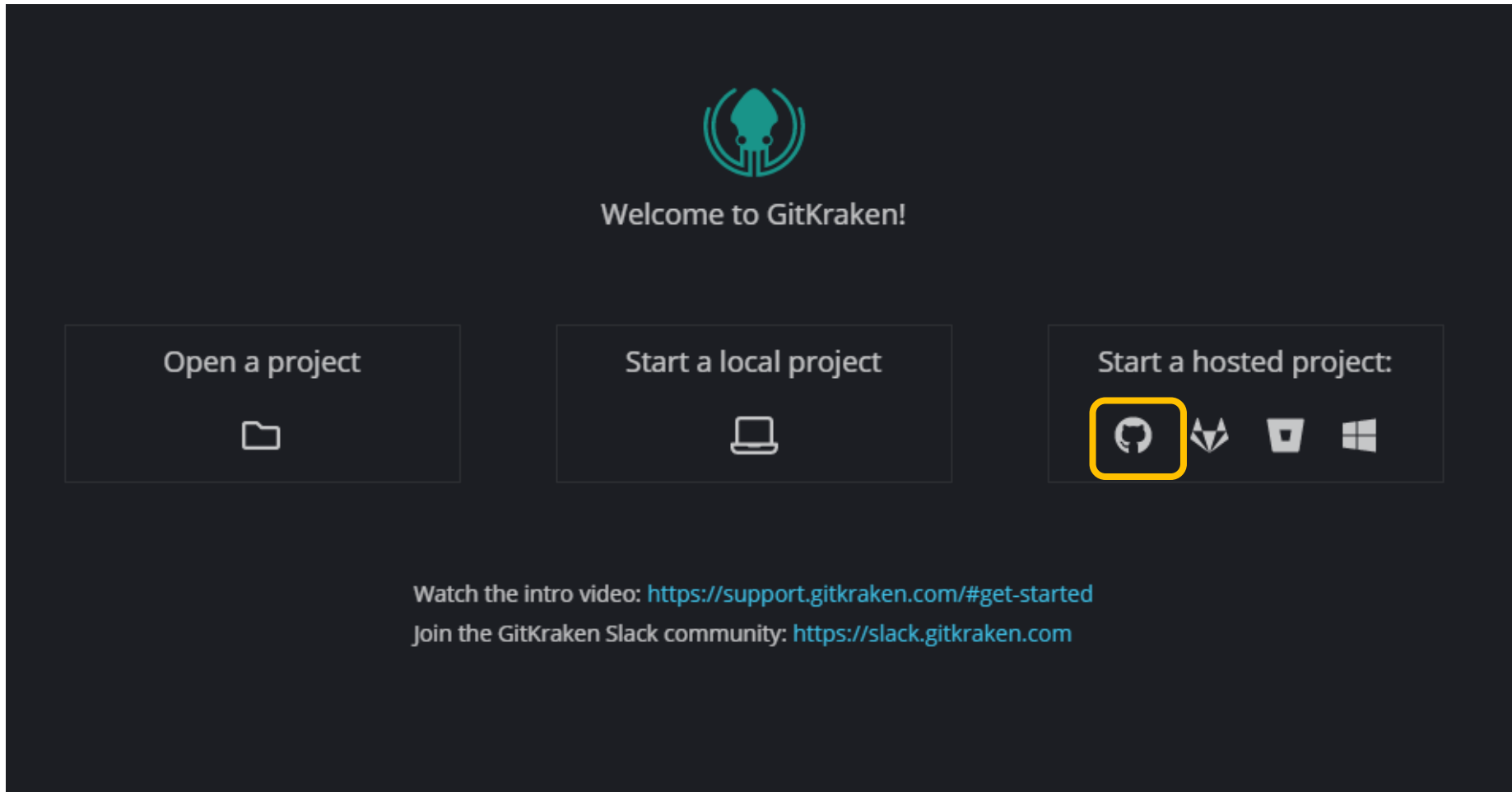
Use Git or checkout with SVN using the web URL.

`https://github.com/CGLAB-Classes/Pa0-laz`

Open in Desktop Download ZIP

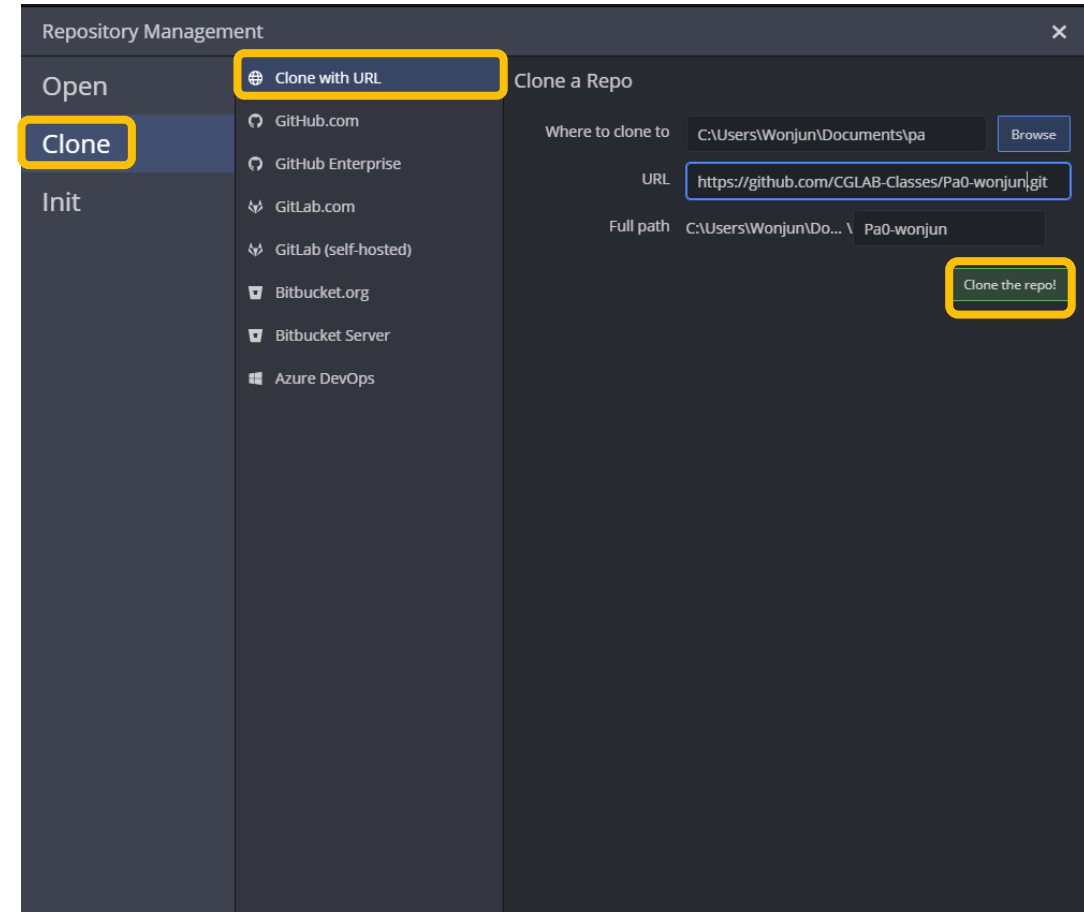
Copy

Clone The Skeleton - 2



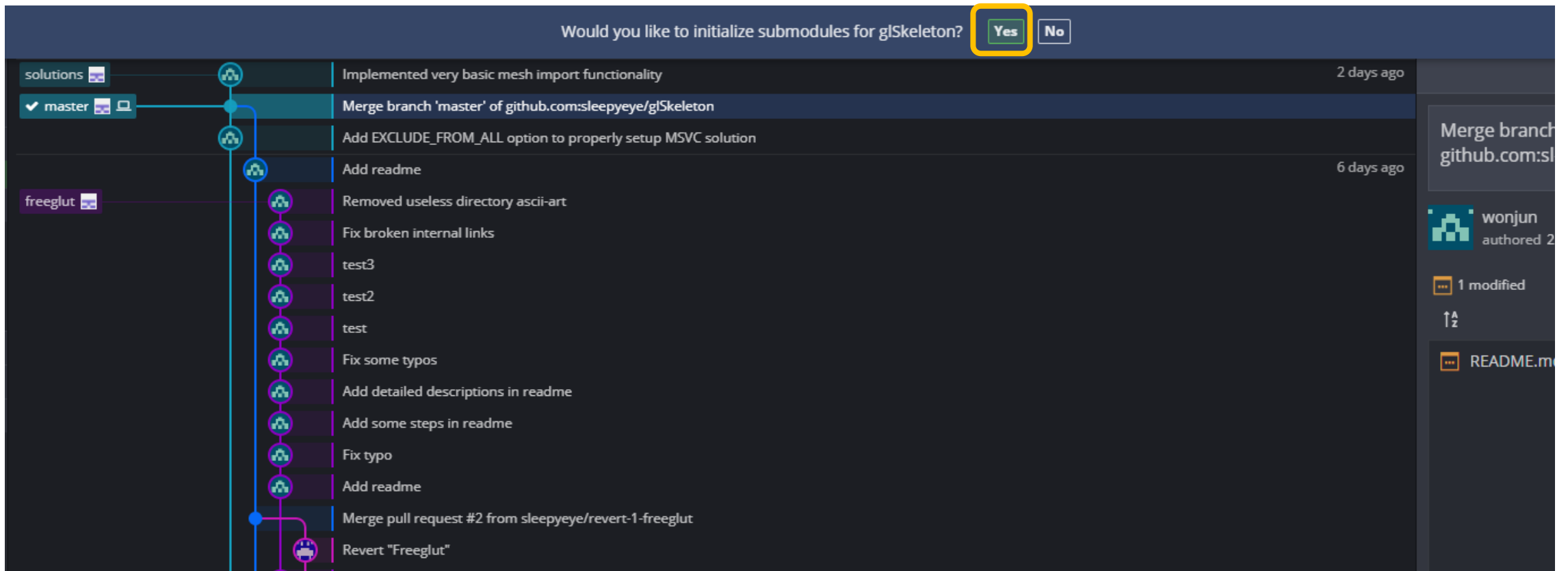
Clone The Skeleton - 3

1. Set your local folder
2. Copy and paste the repo url
3. Clone it!



Clone The Skeleton - 4

Git Kraken will automatically ask that you want to initialize submodules -
CLICK YES





How to Build

How to Build? - Short Version

For windows user

- <https://github.com/CGLAB-Classes/glskeleton#for-windows-user>

For linux user

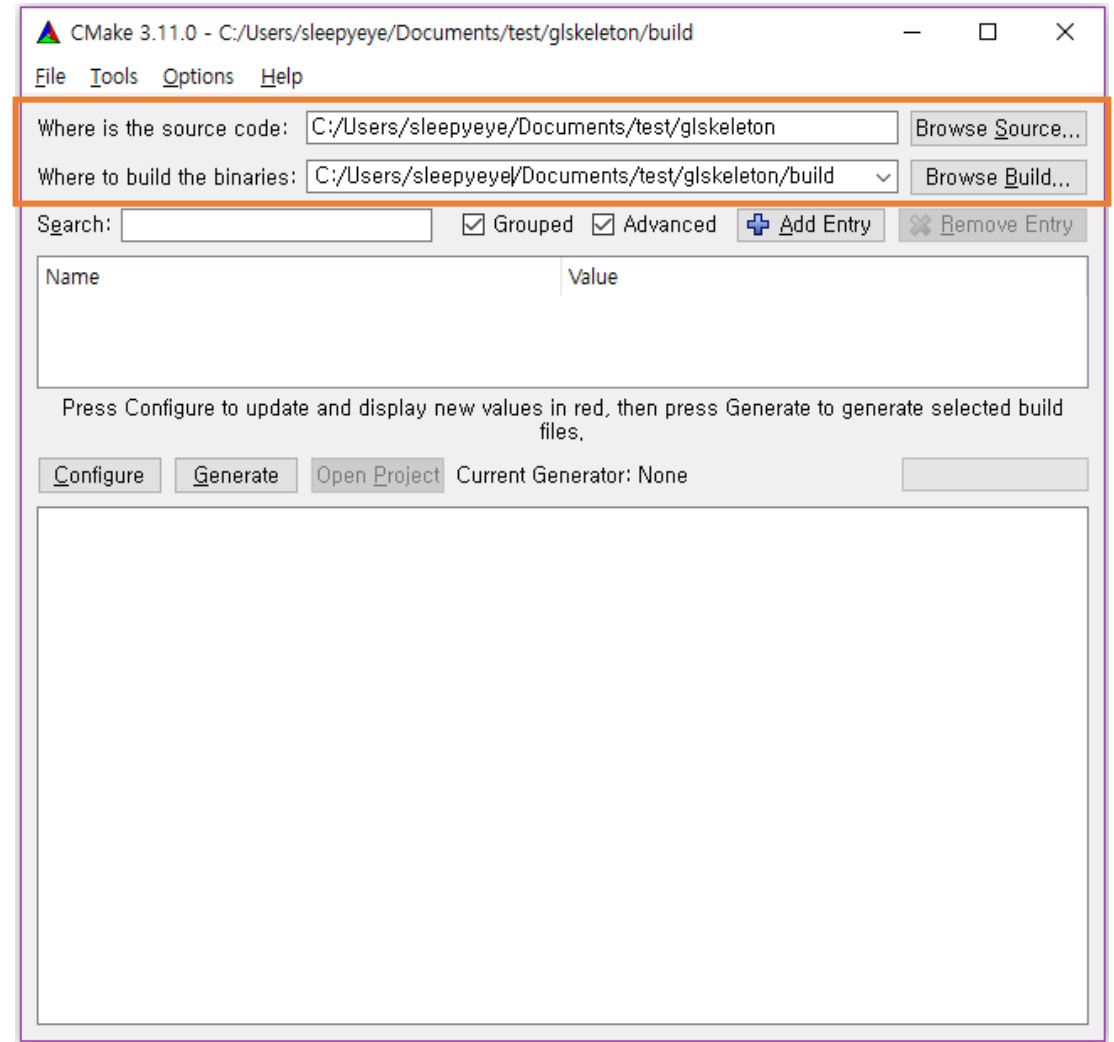
- <https://github.com/CGLAB-Classes/glskeleton#for-linux-user>

For mac user

- Currently mac is not supported

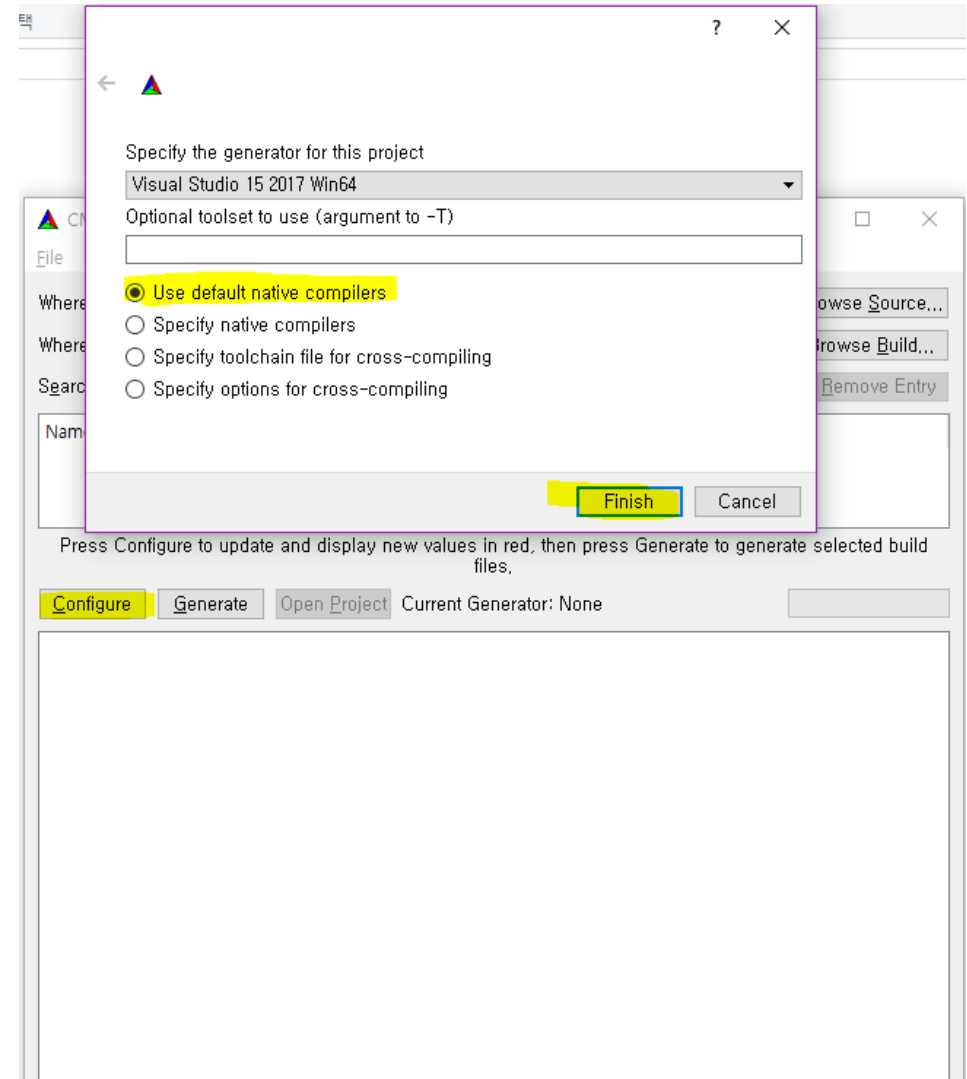
Run CMake

- Run Cmake gui program
- Set source directory (root folder of your cloned repository)
- Set build directory (Create build folder in project root, name should be build!)



Run CMake

Configure the project



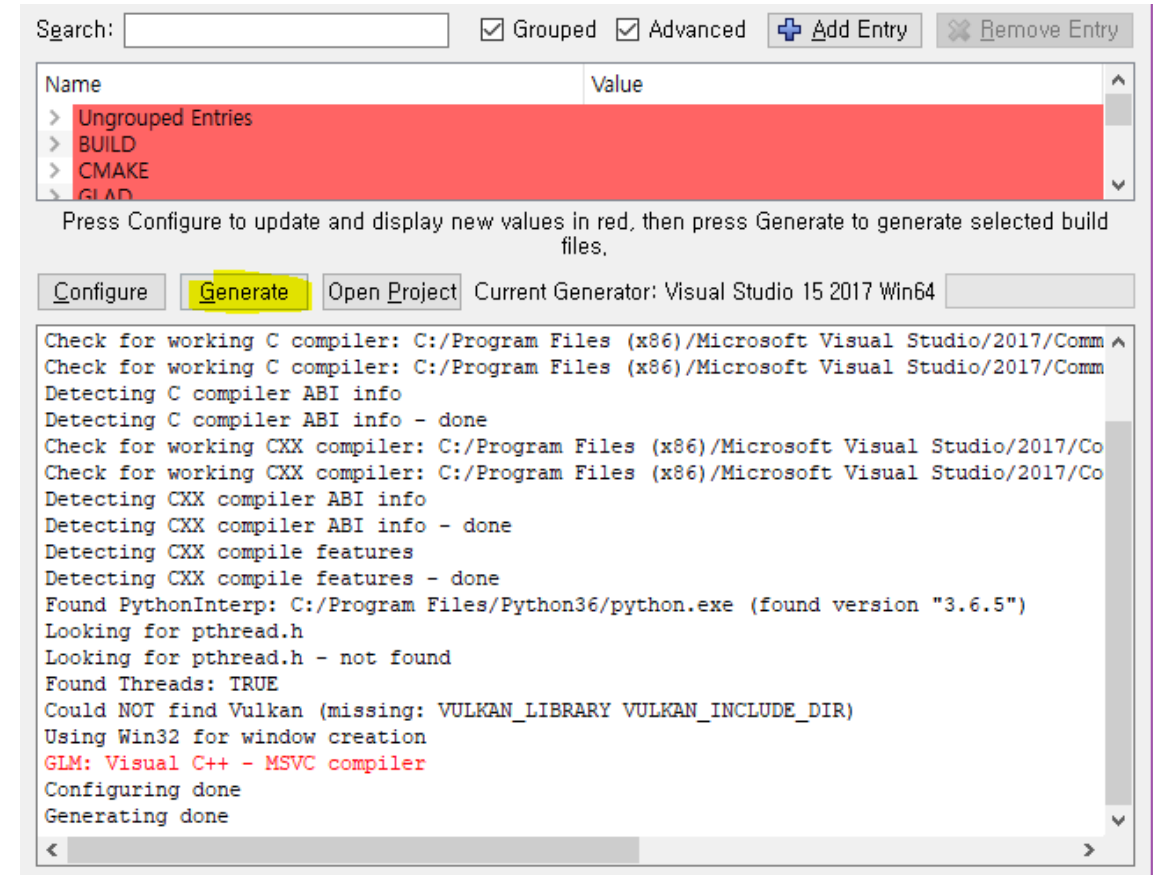
Run CMake

Generate the project.

Click "Open Project"

or

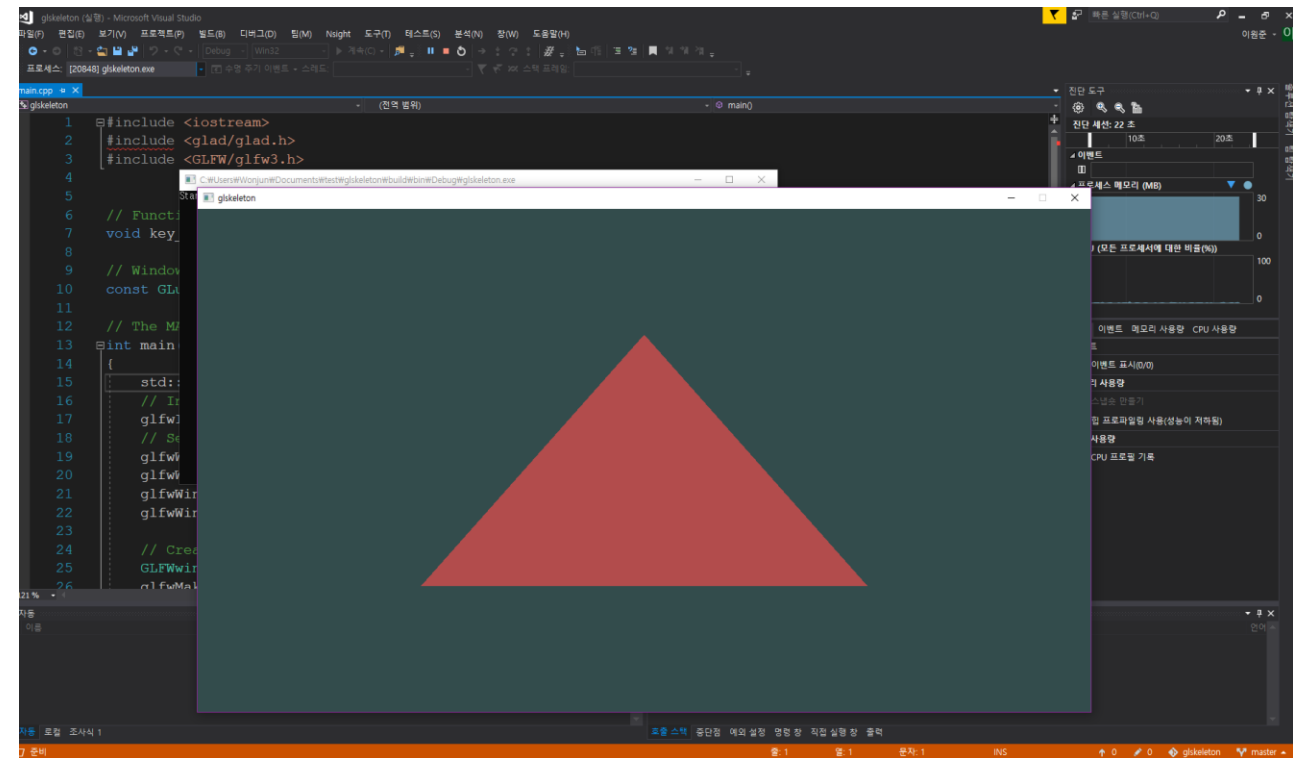
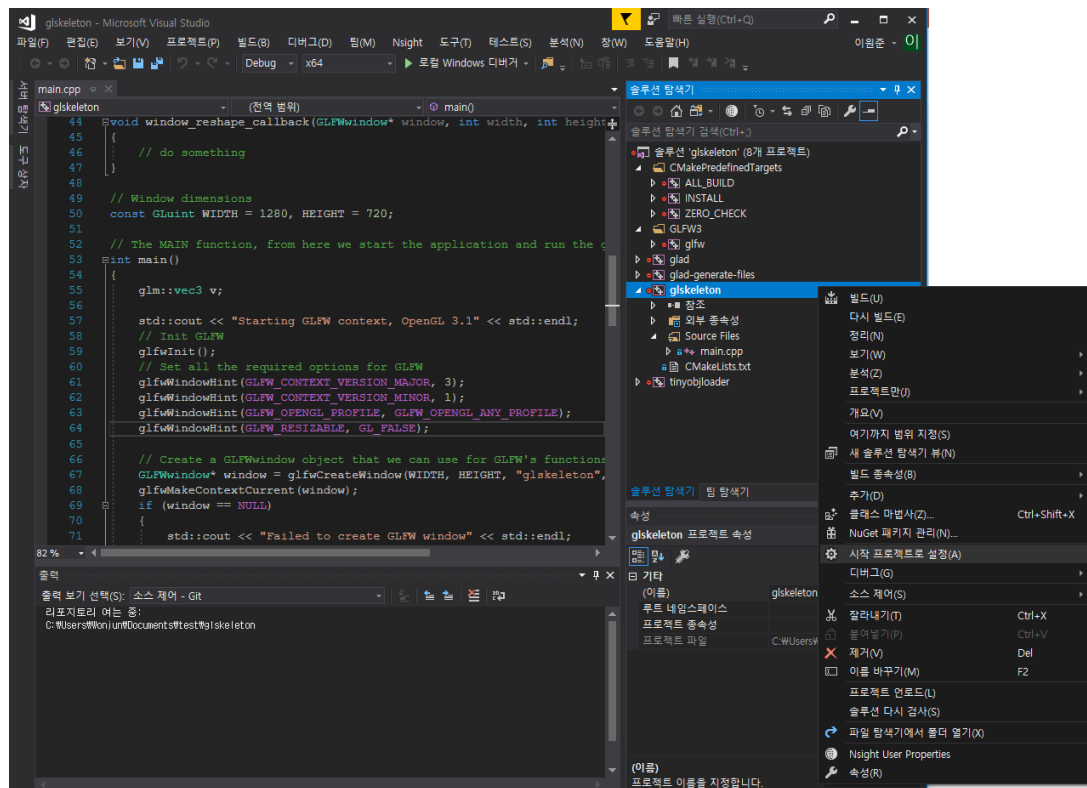
open *glSkeleton.sln* in build directory



Set Startup Project

Set glskeleton as startup project

After that, hit *F5* then you will see the triangle!



The Directory Structure

```
.
├── build
│   ├── CMakeFiles
│   ├── bin                # you can find your executable here
│   ├── extern
│   ├── lib                # you can find your static libraries
│   ├── src
│   └── glskeleton.sln     # your project file
├── extern                 # external projects
│   ├── CMakeLists.txt    # DO NOT TOUCH THIS
│   ├── glad
│   ├── glm
│   └── tinyobjloader
├── doc                   # your report/report template
├── src                   # your source code
│   └── CMakeLists.txt
└── CMakeLists.txt        # in this file
12 directories
```



Github Classroom

Accepting the Assignment

1. Log in to your GitHub account. (You must log in with your github account)
2. Open the link starting with <https://classroom.github.com/a/...> that I send it to you.
3. Accept permission required by GitHub Classroom, then click the accept button
4. Now you have base code in your private repo. Use it for PA.

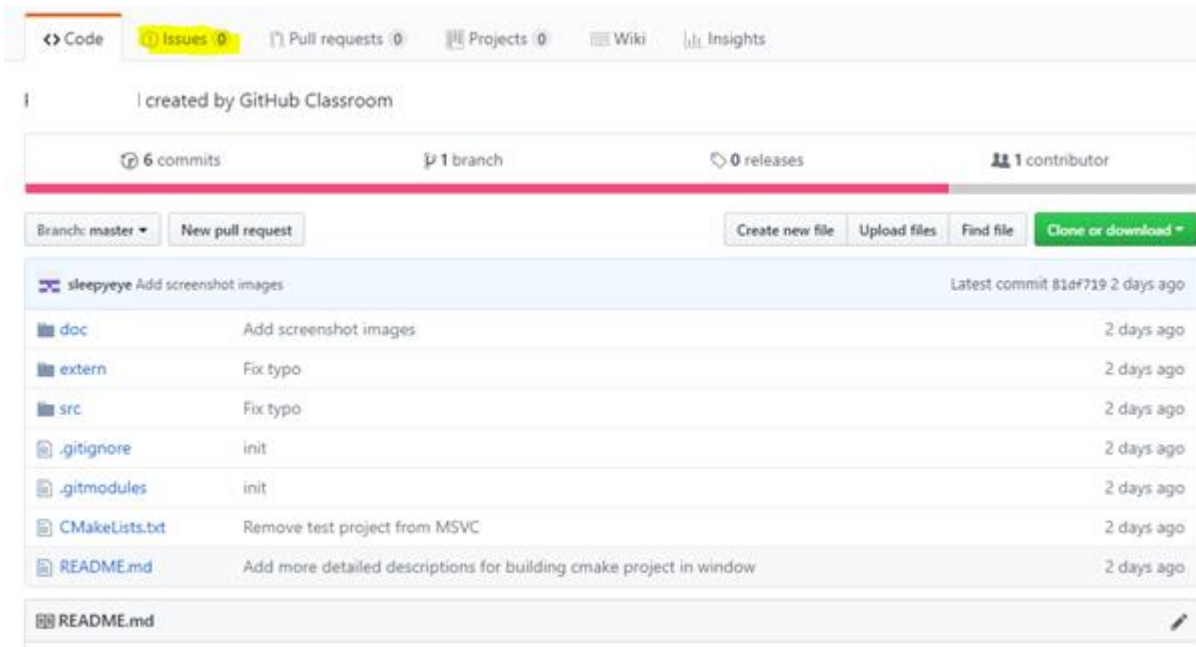
Github Classroom

- Email submission will not be accepted.
- The submission deadline will be controlled by github classroom. System **CANNOT** accept your PA after the deadline.
- You should not commit/push binaries or other build related files.
- Every PA you should write small report in markdown.
 - Only your name, student id, result image.
- Do not make your repository public.

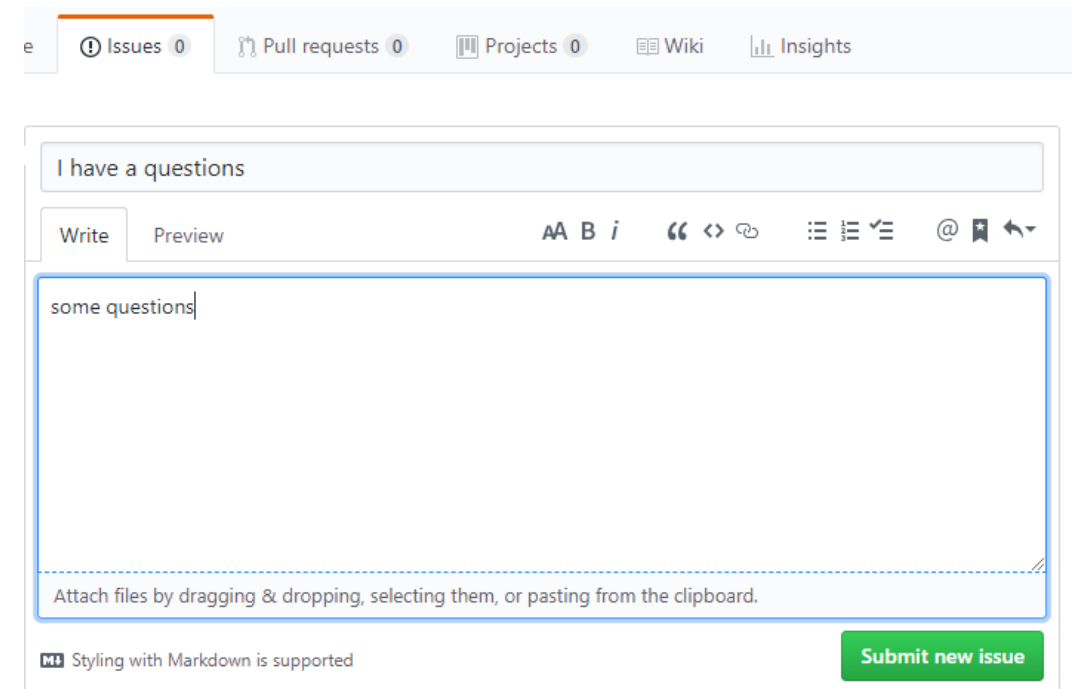
Github Classroom

Do you have a question?

- Do not send email related to PA. Use issue tab instead.



The screenshot shows the GitHub repository interface. At the top, there are navigation tabs: Code, Issues (0), Pull requests (0), Projects (0), Wiki, and Insights. Below the tabs, it says "I created by GitHub Classroom". The repository statistics show 6 commits, 1 branch, 0 releases, and 1 contributor. There are buttons for "Branch: master", "New pull request", "Create new file", "Upload files", "Find file", and "Clone or download". A list of files is shown, including "doc", "extern", "src", ".gitignore", ".gitmodules", "CMakeLists.txt", and "README.md".



The screenshot shows the GitHub issue creation form. At the top, there are navigation tabs: Issues (0), Pull requests (0), Projects (0), Wiki, and Insights. The issue title is "I have a questions". The form has two tabs: "Write" and "Preview". The "Write" tab is active, and the text "some questions" is entered in the text area. Below the text area, there is a message: "Attach files by dragging & dropping, selecting them, or pasting from the clipboard." At the bottom right, there is a green button labeled "Submit new issue".



DEMO



Useful Material

Git/Markdown

- GitKraken tutorials and tips
 - <https://www.youtube.com/playlist?list=PLe6EXFvnTV78WqGmGSq8JPnafR3IAa55n>
 - https://www.youtube.com/playlist?list=PLe6EXFvnTV7_8z5gjobbe9sMjEHNw8_GE
 - https://www.youtube.com/playlist?list=PLe6EXFvnTV7-_41SpakZoTIYCgX4aMTdU
- Git/github cheat sheet
 - <https://education.github.com/git-cheat-sheet-education.pdf>
 - <https://services.github.com/on-demand/downloads/github-git-cheat-sheet.pdf>
- Github flavored Markdown cheat sheet
 - <https://enterprise.github.com/downloads/en/markdown-cheatsheet.pdf>

OpenGL and Graphics

- The Graphics Codex
 - <https://graphicscodex.com/>
- Scratch pixel
 - <https://www.scratchapixel.com/>
- GLM (Math library manual)
 - <https://github.com/g-truc/glm/blob/master/manual.md>
- GLFW API docs
 - https://www.glfw.org/docs/latest/intro_guide.html
- OpenGL reference page
 - <https://www.khronos.org/registry/OpenGL-Refpages/gl4/>
- Some nice OpenGL tutorials (but most of them are targeting modern opengl, we are going to stick with legacy api)
 - <http://www.songho.ca/opengl/>
 - <https://learnopengl.com/>