

PA01 : Build and Run Piccolo Engine

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Objective

- Building Piccolo engine development environment for upcoming programming assignments
- Getting familiar with Smartchair (Assignment Submission Platform) submission flow

Description

Downloading Source Code

Course Team provided two methods to download the source code:

- Download from GitHub
 - <https://github.com/BoomingTech/Piccolo>
- Download from our course-site
 - [Piccolo.zip](#)

Install CMake

Piccolo Engine uses CMake to generate project files.

Please refer <https://cmake.org/download/> for downloading and installing CMake

Build and Run Piccolo

Windows

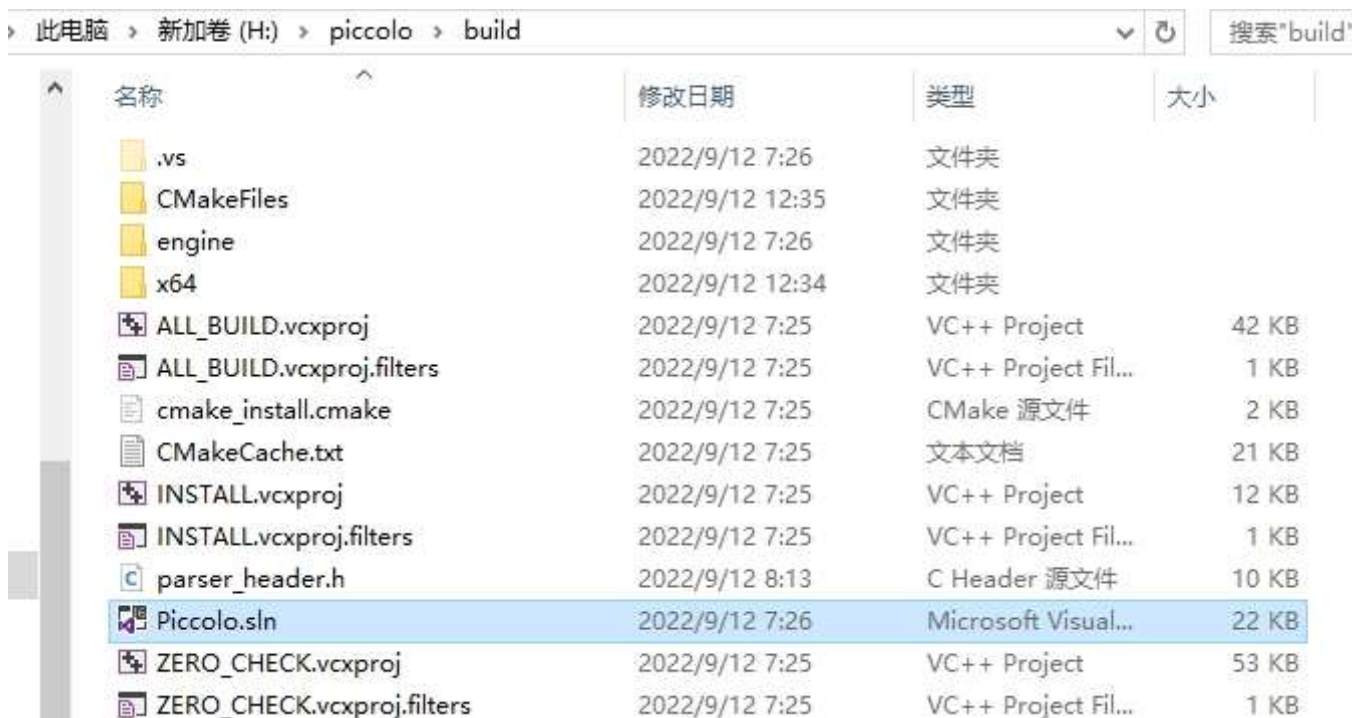
Visual Studio 2019 or later is the recommended IDE on Windows.

Generate the project files with CMake

- Run the following command from **Piccolo root directory**:

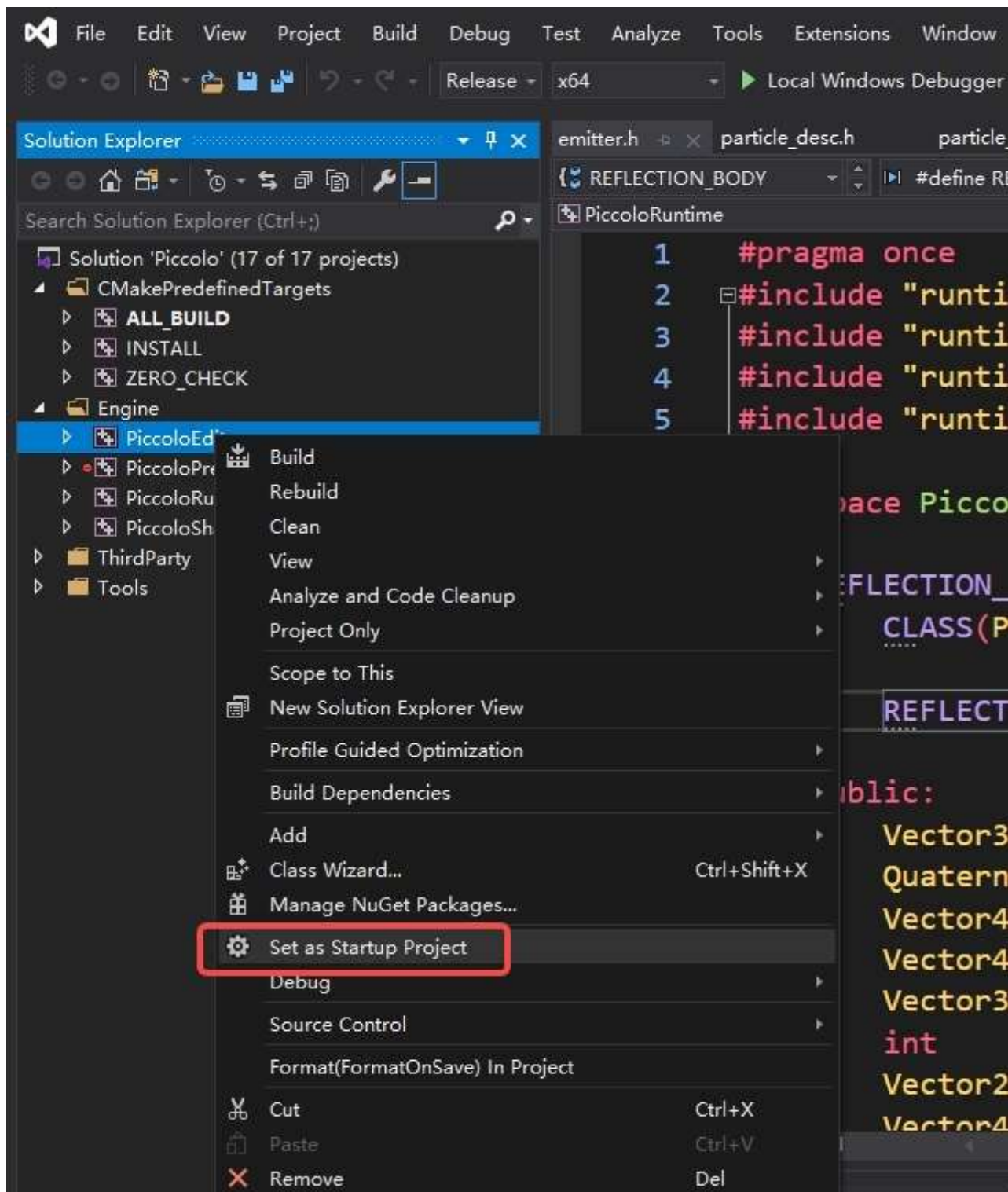
```
$ cmake -S . -B build
```

Open Piccolo.sln with Visual Studio

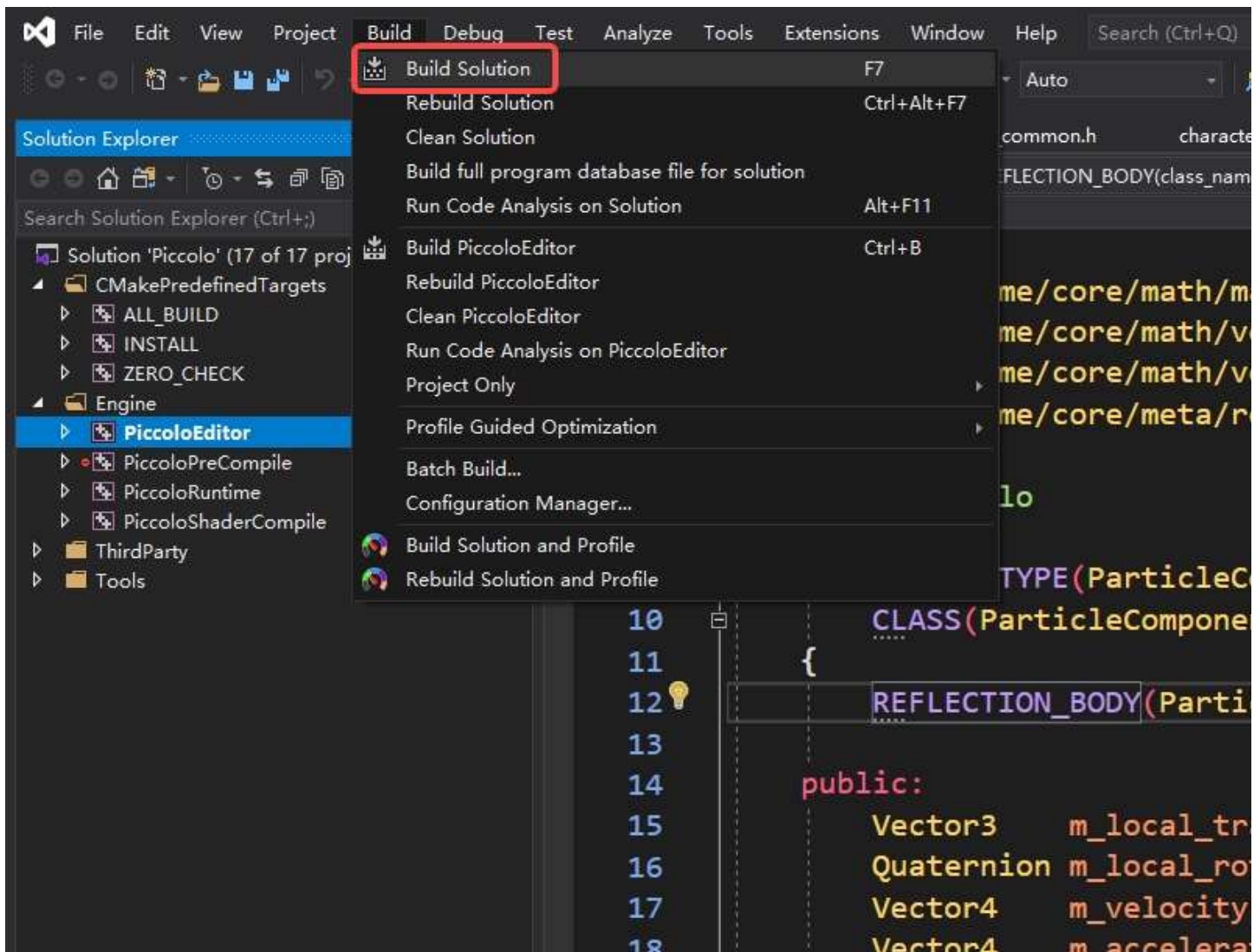


此电脑 > 新加卷 (H:) > piccolo > build					搜索"build"
名称	修改日期	类型	大小		
.vs	2022/9/12 7:26	文件夹			
CMakeFiles	2022/9/12 12:35	文件夹			
engine	2022/9/12 7:26	文件夹			
x64	2022/9/12 12:34	文件夹			
ALL_BUILD.vcxproj	2022/9/12 7:25	VC++ Project	42 KB		
ALL_BUILD.vcxproj.filters	2022/9/12 7:25	VC++ Project Fil...	1 KB		
cmake_install.cmake	2022/9/12 7:25	CMake 源文件	2 KB		
CMakeCache.txt	2022/9/12 7:25	文本文档	21 KB		
INSTALL.vcxproj	2022/9/12 7:25	VC++ Project	12 KB		
INSTALL.vcxproj.filters	2022/9/12 7:25	VC++ Project Fil...	1 KB		
parser_header.h	2022/9/12 8:13	C Header 源文件	10 KB		
Piccolo.sln	2022/9/12 7:26	Microsoft Visual...	22 KB		
ZERO_CHECK.vcxproj	2022/9/12 7:25	VC++ Project	53 KB		
ZERO_CHECK.vcxproj.filters	2022/9/12 7:25	VC++ Project Fil...	1 KB		

Set PiccoloEditor project as Startup Project



Build Solution



Run PiccoloEditor

- You can use keyboard shortcut F5 (Start debugging) or Ctrl + F5 (Start Without debugging).

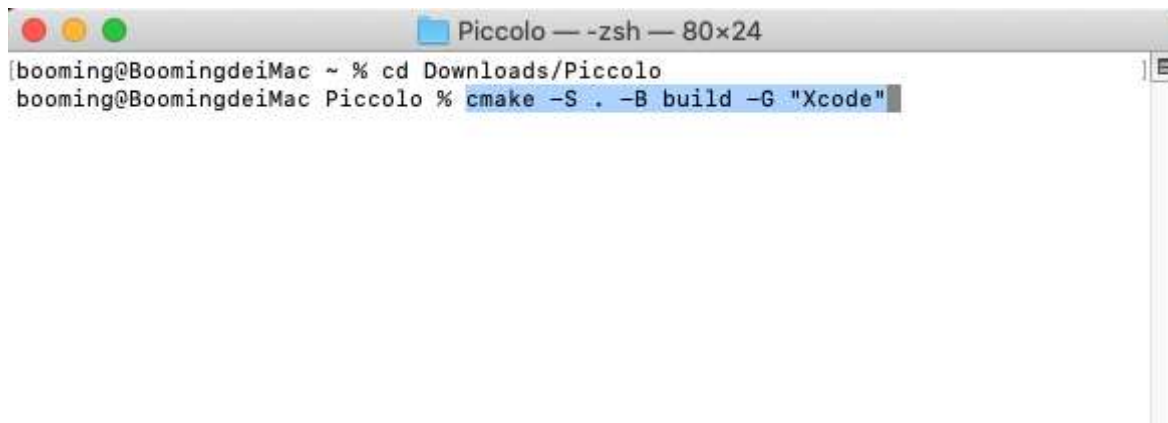
MacOS

Xcode is the recommended IDE on MacOS

Generate the project files with CMake

- Run the following command from **Piccolo root directory**:

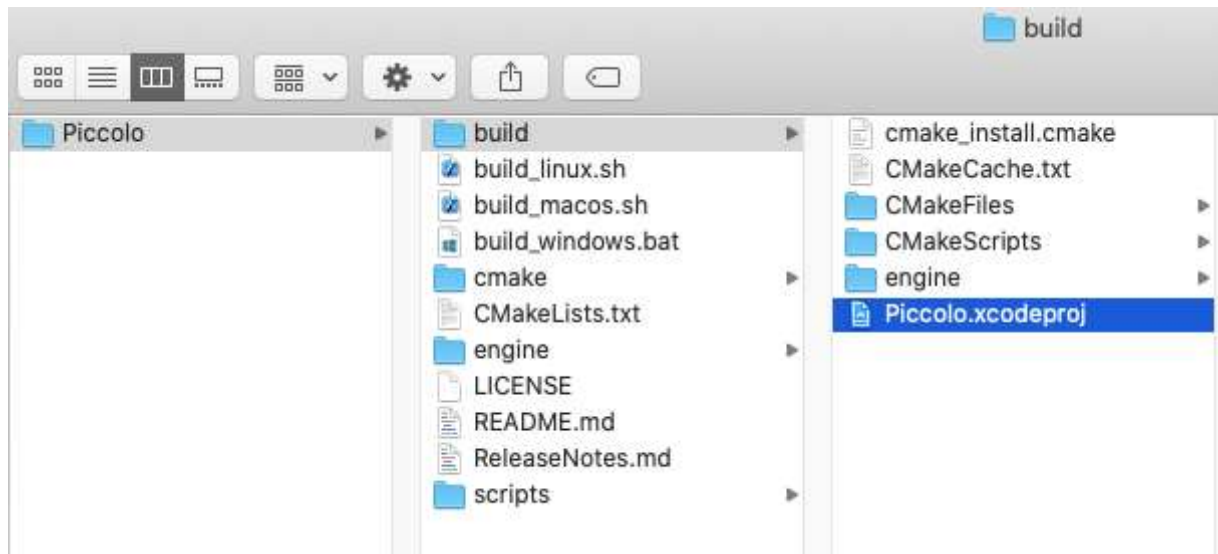
```
$ cmake -S . -B build -G "Xcode"
```



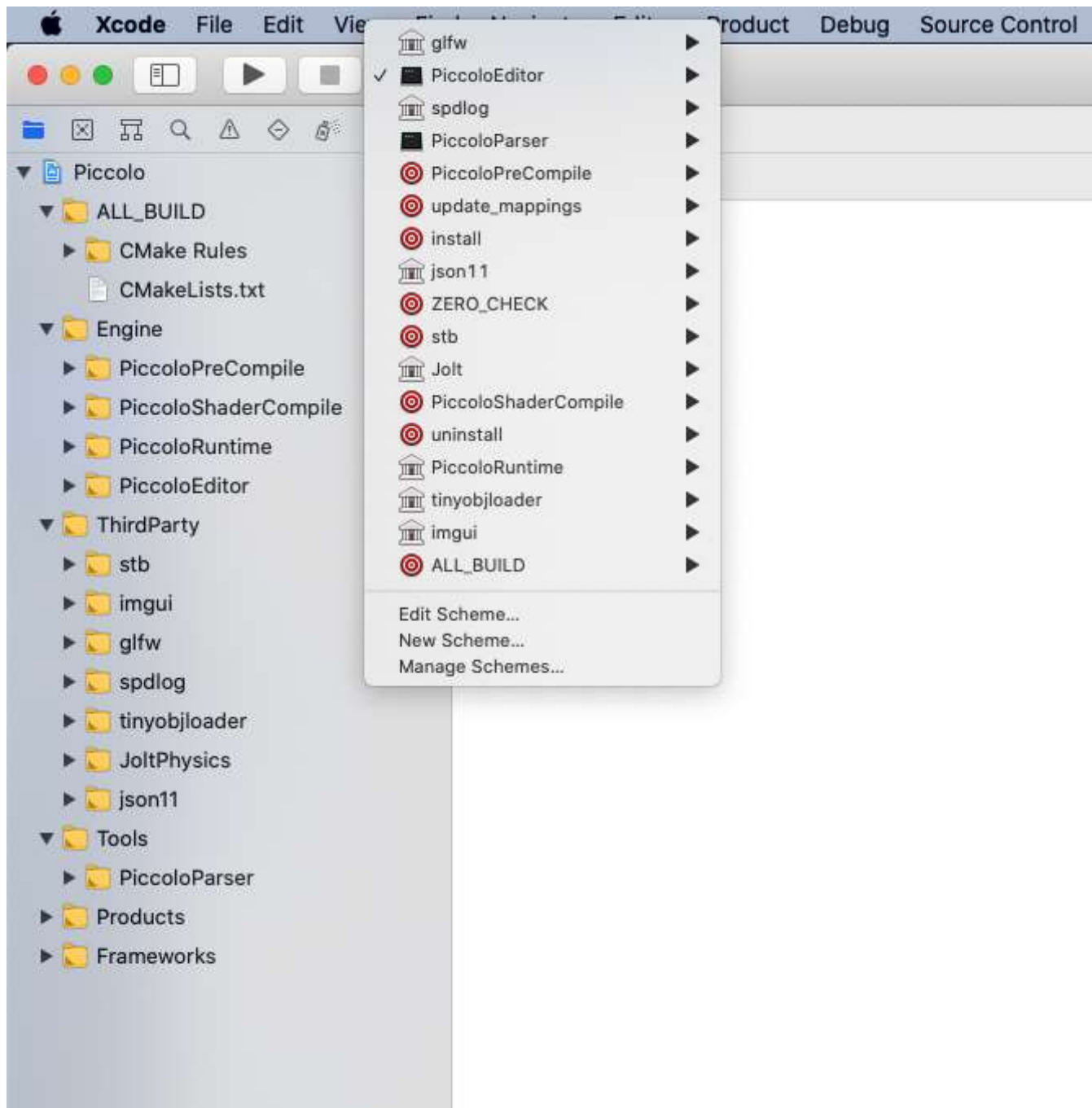
A terminal window titled "Piccolo — -zsh — 80x24" showing the following commands and output:

```
booming@BoomingdeiMac ~ % cd Downloads/Piccolo
booming@BoomingdeiMac Piccolo % cmake -S . -B build -G "Xcode"
```

Open Piccolo.xcodeproj with Xcode



Set PiccoloEditor project as Startup Project



Build Solution

- You can use keyboard shortcut ⌘B (Cmd + B)

Run PiccoloEditor

- You can use keyboard shortcut ⌘R (Cmd + R)

Linux

Following procedures were tested on Ubuntu 20.04 LTS.

Generate the project and build with script

- Run the following command from **Piccolo root directory**:

```
boomingtech@bm-hz-stb-rainbow-bd0: ~/Downloads/Piccolo
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads$ cd Piccolo/
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads/Piccolo$ git status
On branch main
Your branch is up-to-date with 'origin/main'.

nothing to commit, working tree clean
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads/Piccolo$ ./build_linux.sh
The build-tool "" is not supported!
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads/Piccolo$ ./build_linux.sh debug
```

For other usage of the script, please refer the comments in the script.

Run PiccoloEditor

- Run the following command from **Piccolo binary directory** (bin)

```
boomingtech@bm-hz-stb-rainbow-bd0: ~/Downloads/Piccolo...
[ 98%] Building CXX object engine/source/editor/CMakeFiles/PiccoloEditor.dir/source/editor_global_context.cpp.o
[ 98%] Building CXX object engine/source/editor/CMakeFiles/PiccoloEditor.dir/source/editor_input_manager.cpp.o
[ 98%] Building CXX object engine/source/editor/CMakeFiles/PiccoloEditor.dir/source/editor_scene_manager.cpp.o
[ 98%] Building CXX object engine/source/editor/CMakeFiles/PiccoloEditor.dir/source/editor_ui.cpp.o
[100%] Building CXX object engine/source/editor/CMakeFiles/PiccoloEditor.dir/source/main.cpp.o
[100%] Linking CXX executable PiccoloEditor
[100%] Built target PiccoloEditor
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads/Piccolo$ cd bin
boomingtech@bm-hz-stb-rainbow-bd0:~/Downloads/Piccolo/bin$ ./PiccoloEditor
[info] [setupDescriptorSetLayout] setup particle compute Descriptor done
[info] [setupPipelines] compute pipe layout done
[info] [startEngine] engine start
[info] [loadWorld] loading world: asset/world/hello.world.json
[info] [load] loading level: asset/level/1-1.level.json
[info] [createRigidBody] Add Body: 16777216
[info] [createRigidBody] Add Body: 16777217
[info] [createRigidBody] Add Body: 16777218
[info] [createRigidBody] Add Body: 16777219
[info] [createRigidBody] Add Body: 16777220
```

Play around in PiccoloEditor

Editor Mode

- Translate, rotate, and scale game objects
- Add and delete game objects
- Reload and save current level

Game Mode

- Controlling the robot (ASWD to run and press shift for sprint)

Submission

- After running PiccoloEditor successfully, choose your favorite view and take a screenshot.
- Submit the screenshot image on Smartchair.

For SmartChair operating instructions, please refer:

- [GAMES104_SmartChair_Submission_Guide.pdf](#)

Deadline

- Deadline for submission: **GMT+8 20::00::00 Apr 18, 2022**

Grading and Q&A

- The objectives for this assignment are building development environment and getting familiar with Smartchair submission flow. So this assignment will not be graded.
- If you have any question during building Piccolo development environment, you can ask in our Wechat Course Group or post on our course forum. Course Team and Course Supporters will answer.
 - [Course Forum](#)
 - Wechat Course Group: Please add **gameswebinar** as Friend and send **"104"** to enter the course group

Attention

- Each assignments must be accomplished independently.
- Please submit your assignment before the deadline.