Setup Guide

Jun Kitazono
c-kitazono@g.ecc.u-tokyo.ac.jp

Overview

- To use our toolbox, you first need to install a library LEMON, which is used for min-cut search.
  - You can find an official installation guide here.
  - Installation procedure is also summarized in the pages that follow.
- After installing LEMON, please compile two files by “mex”.
- Then, you are ready to use our toolbox! Maybe a good place to start is to try the codes in “demos” folder.
- In the following pages, setup procedure is summarized.
  - Windows (pp. 3-10)
  - Linux (pp. 11-15)

Setup Guide for Windows

1. Setup Lemon
   - Install Cmake
   - Install Visual Studio
   - Install Lemon
2. Compile cpp files by “mex” command

Setup Lemon

Prerequisite

- You must download and install CMake.
- You must also have a C++ compiler. We assume Visual Studio 2019 in this guide (but the older versions will be probably fine).

Install CMake

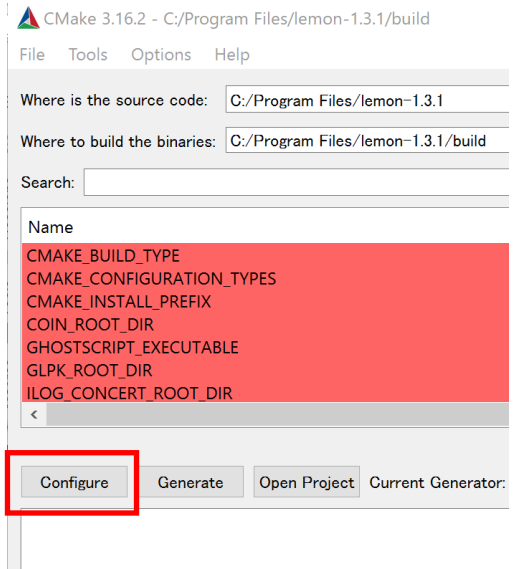
- First visit CMake website
- Download “Windows x64 Installer” and install CMake.

Install Visual Studio

- Install Visual Studio (the free version and free trial version will be fine).

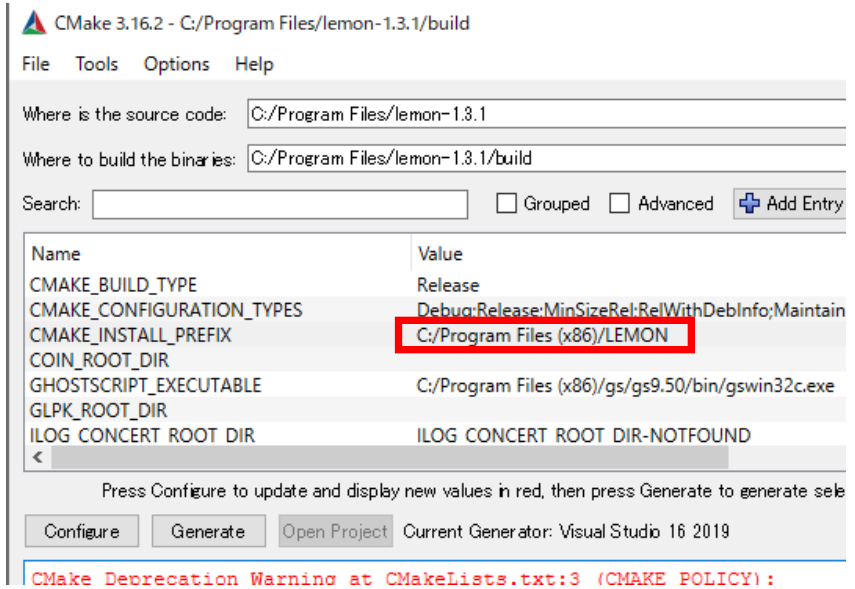
Install LEMON 1/3

- Download source code (lemon-x.x.x.zip) and unzip it.
- Make a subfolder called “build” in the root of the source code repository (lemon-x.x.x¥build).
- Start Visual Studio Command Prompt (CP) for VS 2019 from the Start menu. Then, in the CP, step into the build folder.
- Run the command “cmake-gui ..”,
  then CMake will be started.
- Now click on the “Configure” button.



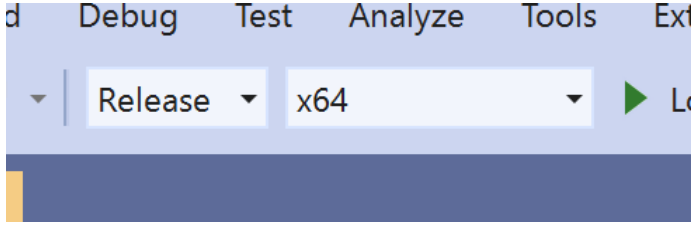
Install LEMON 2/3

- If a dialog box open, select the compiler “Visual Studio xx 2019 Win64” from the pull-down menu and click on the “Finish” button.
- Select the installation destination. The default setting is probably “C:/Program Files (x86)/LEMON” (select anywhere you want).
- Click on the “Configure” button again.
- After configuration is done, click on the “Generate” button.
- After generation is done, click on the “Open Project” button.
- Then the solution file (LEMON.sln) will be opened by Visual Studio.

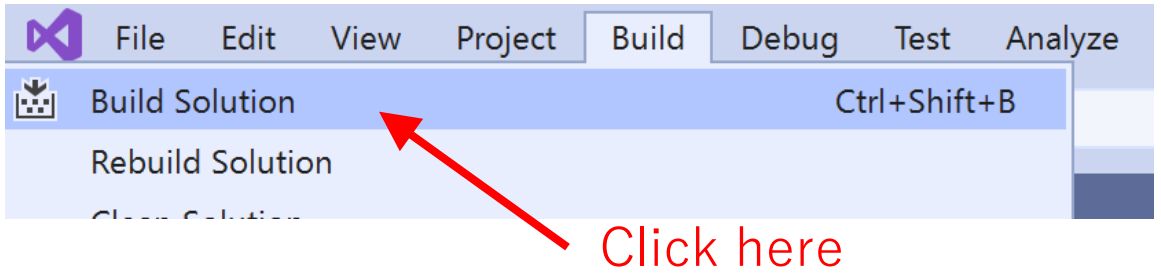


Install LEMON 3/3

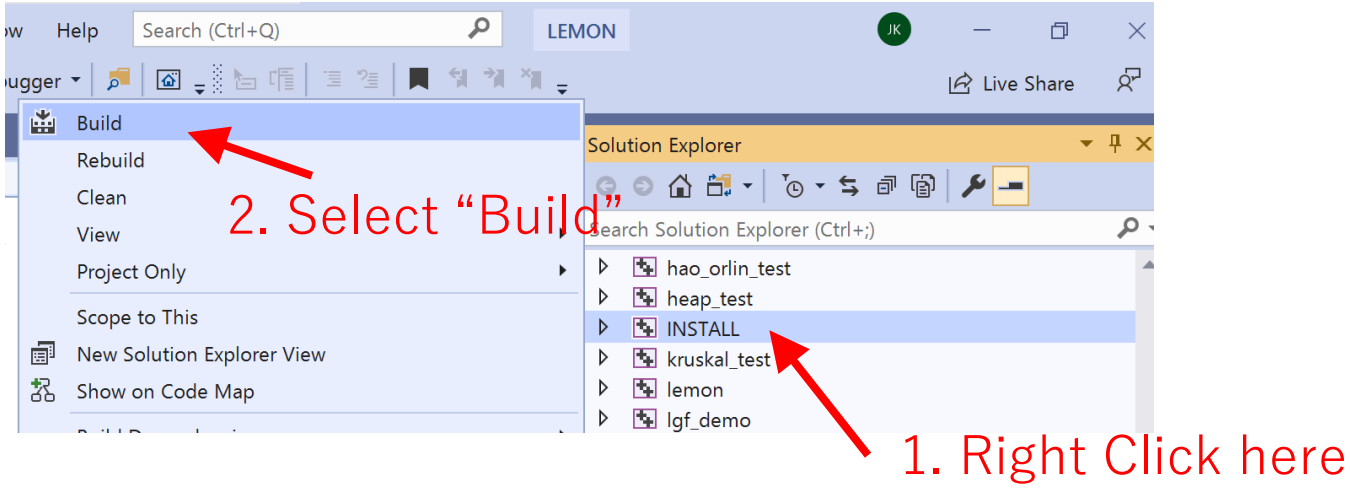
- Select “Release” from the pull-down menu.



- Build the solution.



- Install.



Compile by “mex” command

- Start Matlab.
- Step into the “tools¥lemon” subfolder of our toolbox.
- Type the command “mex –setup cpp” and click the link “Microsoft visual C++ 2019”.
- Copy & paste and run the following commands.

These parts depend on the place you installed LEMON.

```
ipath = ['-I', 'C:¥Program Files (x86)¥LEMON¥include'];
lpath = ['-L', 'C:¥Program Files (x86)¥LEMON¥lib'];
mex('hao_orlin_mincut_c.cpp', ipath, lpath, '-llemon')
mex('nagamochi_ibaraki_c.cpp', ipath, lpath, '-llemon')
```

- Now you’re ready to use our toolbox! Please try the codes in “demos” folder.

Setup Guide for Linux

1. Setup LEMON
2. Compile cpp files by “mex” command

Setup LEMON 1/2

0. Download source code (lemon-x.y.z.zip or lemon-x.y.z.tar.gz) and decompress it.
1. Step into the root of the source directory.
   # cd lemon-x.y.z
2. Make a subdirectory “build” in the root of the source code repository (lemon-x.x.x/build) and step into it.
   # mkdir build
   # cd build
3. Perform system checks and create the makefiles.
   # cmake -DBUILD_SHARED_LIBS=TRUE ..
4. Build LEMON.
   # make
5. Install LEMON
   # make install

* A trouble shooting for Step 3 is in the next page.

Trouble shootings for Step 3

- When you receive the following error message,

```
CMake Error at CMakeLists.txt:3 (CMAKE_POLICY):
  Policy "CMP0048" is not known to this version of CMake.
```

  replace the 3rd line of CMakeLists.txt in lemon-x.y.x directory from

```
CMAKE_POLICY(SET CMP0048 OLD)
```

  to

```
IF(POLICY CMP0048)
  CMAKE_POLICY(SET CMP0048 OLD)
ENDIF(POLICY CMP0048)
```

- You may see the messages like

```
Could NOT find {GLPK, ILOG, COIN, SOPLEX}
```

  but you can just ignore them.

Setup LEMON 2/2

- Set path
  1. Create a new file in /etc/ld.so.conf.d/ like /etc/ld.so.conf.d/usrlocal.conf and put in it a line “/usr/local/lib”.

     ```
     # echo /usr/local/lib >> /etc/ld.so.conf.d/usrlocal.conf
     ```

  2. Update cache file

     ```
     # ldconfig
     ```

Compile by “mex” command

- Start Matlab.
- Step into the “tools/lemon” sub-directory of our toolbox.
- Copy & paste and run the following commands.

```
mex hao_orlin_mincut_c.cpp -I/usr/local/include/ -L/usr/local/lib/ -lemon
mex nagamochi_ibaraki_c.cpp -I/usr/local/include/ -L/usr/local/lib/ -lemon
```

- Now you’re ready to use our toolbox! Please try the codes in “demos” directory.