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Jakub: MxSlimCurve

Installing mxSlimCurve

`mxSlimCurve` is a MEX wrapper for the engine **http://loci.wisc.edu/software/slim-curve SlimCurve**. In order to run it in Matlab, the `mxSlimCurve` MEX/C code must be compiled first. Each time `demoSlimCurve` runs it checks if a compiled version of `mxSlimCurve` is available. Otherwise, it tries to compile it by running the `compileSlimCurve` script. Chances are that this process will fail unless you first set Matlab MEX correctly.

Step-by-step installation instructions

Time required 1-10 minutes.
1. Ensure that you have `matlab` and `c` folders with all their contents placed in the same directory for the compilation.
2. Once compiled, you will only require the `mxSlimCurve.m` file for help and the `mxSlimCurve.extension` file that will be created during the compilation to run `mxSlimCurve`. You may need to recompile it if you move your code to a computer with different operating system or architecture. The exact name of the `mxSlimCurve.extension` file will differ according to the system you use:

OS	File name
Windows 64-bit	mxSlimCurve.mexw64
Windows 32-bit	mxSlimCurve.mexw32
Linux 64-bit	mxSlimCurve.mexa64
Linux 32-bit	mxSlimCurve.mexglx
MAC OS X	mxSlimCurve.mexmaci64

1. If you know you have GCC or Windows SDK 7.1 installed and one of them is selected as the active Matlab MEX compiler, just run `demoSlimCurve`. It compiles `mxSlimCurve` and creates a window with example graphs. Type `help demoSlimCurve` to see its help file. Run `compileSlimCurve` for compilation without a functional demonstration.

Compiling mxSlimCurve on Windows.

Time required 2 minutes. mxSlimCurve can be compiled on Windows using `Microsoft Windows SDK 7.1` or `gcc`.
1. Run `mex -setup` on Matlab command line. It will give you several questions that you must answer in order to choose the correct mex compiler:
    1. "`Would you like mex to locate installed compilers [y]/n?`" Hit ENTER.
    2. Type the number in the options that you are given that points to "Windows SDK 7.1" or "`gcc`" and hit ENTER. In my case the two sensible options included numbers 2 or 3: "`[2] Microsoft Software Development Kit (SDK) 7.1 in C:\Program Files\Microsoft Visual Studio 10.0`" and "`[3] gcc in C:\PROGRA~1\CODEBL~1\MinGW\bin`".

3. **If neither is available, you must install it and restart Matlab before proceeding.** See paragraph below on the installation instructions.
4. You are then asked to verify your choice of compiler. If it says "Compiler: Microsoft Software Development Kit (SDK) 7.1" or "Compiler: gcc" you made the correct choice and therefore hit ENTER.

2. Change into the directory that contains mxSlimCurve.
3. Run demoSlimCurve. It compiles mxSlimCurve and uses it to create a window with example graphs. Type help demoSlimCurve to see the help file for demoSlimCurve. Run compileSlimCurve for compilation without a functional demonstration.

Installing mex compilers on Microsoft Windows.

Time required 10 minutes. You have a choice of installing either Microsoft Windows SDK 7.1 of gcc in order to be able to run mxSlimCurve.

For Microsoft Windows SDK 7.1, follow the instructions on **Microsoft Windows SDK for Windows 7 and .NET Framework 4** on the Microsoft Download Center.

For gcc, you may want to install **Cygwin** or follow the attached step-by-step guide on installing MinGW:
1. Compilation on Windows requires the GNU Compiler Collection **http://gcc.gnu.org/ GCC** to be installed on your computer first. There are various ways to achieve this, but the most straightforward is to install Minimalist GNU for Windows **MinGW**.
2. Proper way: Obtain the **MinGW Installer** and follow its instructions.
3. Fast, user friendly way: Install full package of **http://www.codeblocks.org /downloads/26 CodeBlocks** including MinGW. Use only the full package (~100 MB) that includes MinGW.
4. Once MinGW is installed, set up your Matlab to work with GCC:
   1. Obtain **http://sourceforge.net/projects/gnumex/files/latest/download Gnumex**, which creates a mexopts.bat file with all the compilation instructions for Matlab MEX.
   2. Start Matlab.
   3. Change into the gnumex directory.
   4. Run gnumex script. It opens a window.
   5. Fill in the first line only "MinGW root directory (may be blank):" and leave the rest as it is. In my case the MinGW root directory was "C:\Program Files\CodeBlocks \MinGW". If you installed MinGW into "C:\mingw", include that instead.
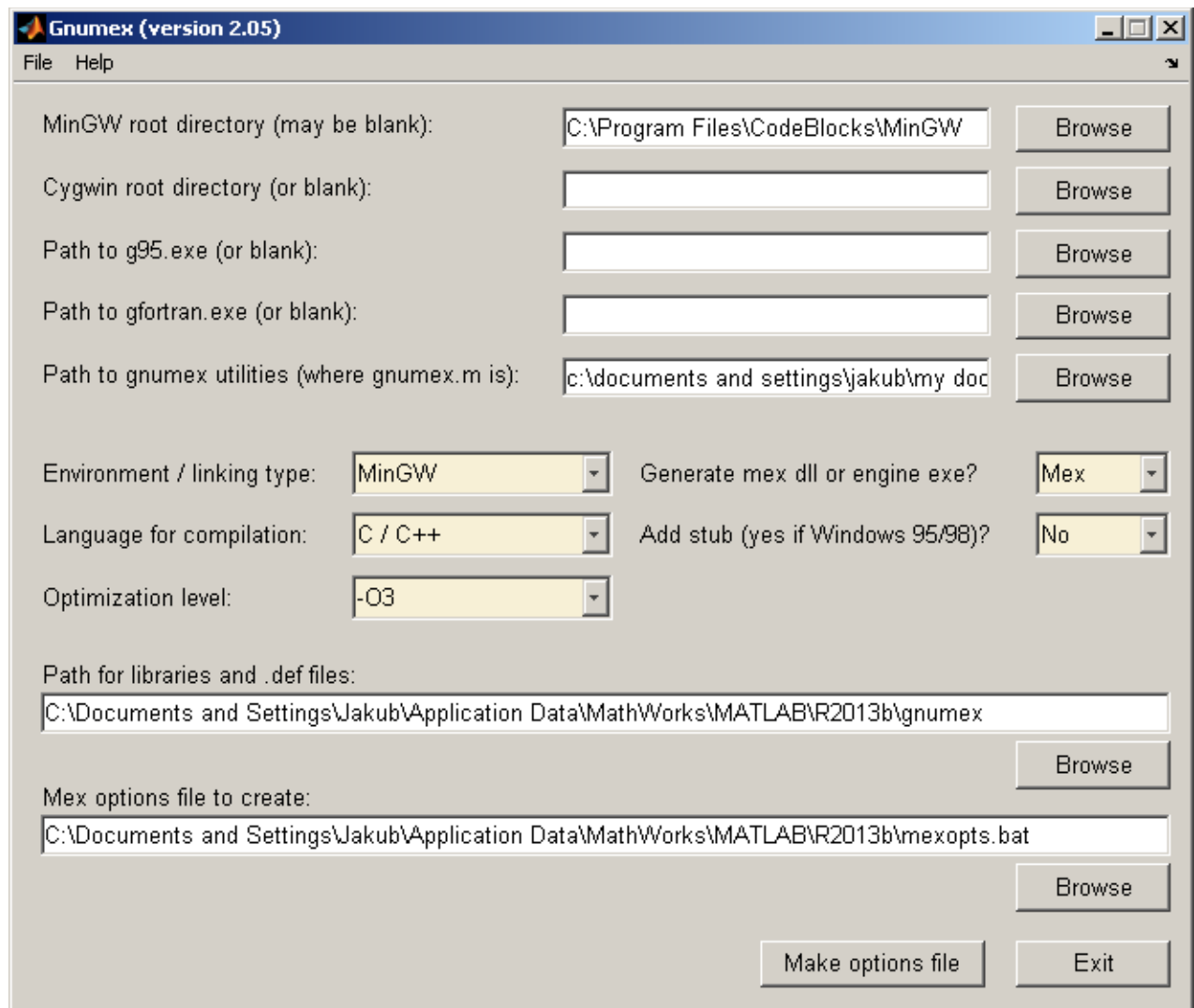
6.
7. Hit "`Make options file`" button.
8. Hit "`Confirm`" button in the window that pops up.
9. It will create a `mexopts.bat` file that provides the compilation options for MEX.
10. Type `mex -setup` on the Matlab command line. It will ask you several questions that lead MEX to use the GCC coming with MinGW.
    1. "`Would you like mex to locate installed compilers [y]/n?`" Hit ENTER.
    2. Type the number in the options that you are given that points to "`gcc`" and hit ENTER. In my case it was number 3 "`[3] gcc in C:\PROGRA~1\CODEBL~1\MinGW \bin`".
    3. You are then asked to verify your choice of compiler. If it says "`Compiler: gcc`" you made the correct choice and therefore hit ENTER.

Compiling mxSlimCurve on Linux

Time required 1 minute.
1. Run `demoSlimCurve`. It compiles `mxSlimCurve` and use it to create a window with example graphs. Type `help demoSlimCurve` to see the help file for `demoSlimCurve`. Run `compileSlimCurve` for compilation without a functional demonstration.