Himmeli installation instructions

Himmeli is a command line software and as such not well suited for users who are accustomed to graphical user interfaces. There is, however, a web based interface on the Himmeli home page that makes the drawing of graphs easier, but for practical reasons this option might not offer the same features as a proper installation.

For each computer program, there is usually one file that is accessed by the operating system: this so called executable file contains the software algorithms and internal data in a format that can be directly passed to the processor of the computer. However, Himmeli is distributed as open source, which means that this executable file has to be created from the human readable code (written in the C++ language) before the program is ready for use. A special compiler program is needed to transform the raw software into the machine readable executable.

One might ask why not compile the machine readable file beforehand to make the installation easier? The rationale is very simple: creating executables for every platform currently on the market is beyond the resources of academic research. Also, the open source distribution makes it possible for more advanced users to create their own versions by manipulating the human readable form, again providing added flexibility at no cost to the original developers.

Windows

This document is not intended to be a comprehensive guide to compiling programs on Windows since there is a wealth of related resources available on the Internet. Some of the popular compiler tools include Microsoft's own Visual C++, Borland's C++ compilers, and the GNU C/C++ compiler. Furthermore, the user is encouraged to visit the Cygwin/X website (**http://x.cygwin.com/**) for information on creating a UNIX type environment in Windows. The compilation and installation on Cygwin/X follow the same path as for any "true" UNIX or Linux system. Just ensure that you include a C/C++ compiler from the list when installing Cygwin/X.

Microsoft Windows remains the predominant operating system for everyday use, hence a generic executable that should work on most PCs is provided in the installation package. Note, however, that this shortcut may not work in new Windows environments. Here are some instructions:

1. Unpack the installation package using WinZip or equivalent (usually it is enough to just double-click the icon). It is highly recommended that the unpacked executable file *himmeli.exe* and the

exemplary data files are are at this point copied to a folder such as `c:\himmeli\` so that they are easy to access from the command prompt. You can get these files from the `windows` subdirectory within the installation package.

2. Open the command prompt. In Windows XP it is usually located in `Start menu -> Accessories`.

3. Proceed to the directory where you unpacked the executable (type `cd c:\himmeli\` in the prompt and press the return key).

4. Run Himmeli by typing `.\himmeli config.txt` and by pressing return.

5. You should now see the runtime report on the screen and several new files in the directory.

The above instructions represent a very basic use of the command line. More advanced features can be learned from the Internet, just search with the keywords "command prompt", "environment variables" and "setting executable path" in relation to the Windows operating systems.

Linux/UNIX

Himmeli is a completely stand-alone application; thus the executable can be compiled without any configuration or additional installations of third-party libraries. The software is written in C/C++, so the target platform must have a reasonably recent compiler available (in particular, the compiler must support the C++ standard template library). Here is a typical case (GNU C++ compiler):

1. Unpack the installation package (`unzip` or other archive managent software).

2. Proceed to the `source` directory within the package, and type the command
`g++ -O5 -o himmeli main.cc *.cpp -lm`
in the the terminal shell (command prompt). The `-lm` in the end links the basic mathematical functions.

3. You should now see a new executable file `himmeli` in the directory. Verify that it works by typing `./himmeli` in the terminal.

4. If you have root priviledges (administrator user), you can move the executable to a common location such as `/usr/local/bin/` so that all users can access the software. You can also put the file into a dedicated subdirectory under your home directory (e.g. `~/bin/`) and then add this to your executable path. For instance, if using the Bourne shell add the line `PATH=$HOME/bin:$PATH` into `~/.bashrc` and restart the terminal.

Apple Macintosh

Apologies for all Mac users! Unfortunately, we did not have a suitable system on which to test Himmeli. If you have experience of installing on platforms not mentioned in this document, please contact us and we will add the instructions to the installation package.