Installation guide for irrLicht on Mac

For use in 02393 Programming in C++

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Download Base Example In the course, we are giving out several versions of a game framework that you can play with and that you later integrate your implementation into; the first version of this framework is called `base-example-1.0.zip` and can be downloaded from campusnet, please move it to a place that is convenient for you and unpack.

The Makefile The framework contains a `Makefile` that specifies the necessary compiler commands, so you do not have to figure them out yourself or remember them; it is designed so that one can easily work with it both on Windows, Linux and Mac. If you open the `Makefile` in a text editor, you can see a line that says which system:

```
SYSTEM_NAME = mac
```

Please change this line if it says something other than `mac`.

Use the terminal program and change navigate to the directory (with command `cd` *directory*) – note you do not have to type the directory, you can drag the title line of the respective Finder window into the terminal window. Normally you will be able now to compile by just typing the command `make` in this director. Right now, this will however result in an error if you did not yet install irrLicht.

There are two things from irrLicht that our `Makefile` relies on and that we install in the following:

- Header files of the irrLicht library
- The (compiled) irrLicht library itself

Downloading IrrLicht Please download the irrLicht library from `http://irrlicht.sourceforge.net/downloads/`, version 1.8.1 is the latest at the state of this writing. Please place it in the same directory where you have the base file and upzip it.

Please check that in the `Makefile` we have a line

```
IrrlichtHome := ../irrlicht-1.8.1
```

(The prefix "`../`" means "parent directory"; mind that the Makefile has the version number you have downloaded.)

This should already take care that the compiler finds the header files.

The Compiled Library Compiling the library yourself can be a bit tricky on the Mac. We have therefore put a compiled version onto campusnet, but the experience is that even minor changes in the setup of your Mac may prevent it from running. So what we describe in this paragraph may not work on your machine and in this case, please check the next paragraph on compiling the library.

Please check you have an up-to-date MacOS: Apple-Menu, "About this Mac", should say "OS X Version 10.9.4" (I guess anything 10.9 is fine.) If you have an older version you can probably find a free update in Apple's App-Store. Also it may be a good idea to get the latest stable version of Apple's XCode (version 5.11 at the state of this writing) that you can also get from the AppStore for free.

The compiled library file for mac is called `libIrrlicht.a` and found on Campusnet; please put it in the folder `irrLicht-1.8.1/lib/MacOSX/` and check the following in the `Makefile`:

- There is a line that identifies the position of the library

  ```
  LibIrr := $(IrrlichtHome)/lib/MacOSX/Libirrlicht.a
  ```

- and the architecture is the latest one:

  ```
  Arch := x86_64
  ```

Hopefully, now the command `make` should work (i.e., give no error messages). You can then start the application by double-clicking it in the finder. If it does not work (despite apparently have the right version of everything), please contact us. As a last resort, if the compiled library is not accepted, you can compile it yourself:

Compiling the Library itself This assumes you have XCode 5 (as described above). Go in the Finder to the subdirectory

`irrlicht-1.8.1/source/Irrlicht/MacOSX` .

Double-click MacOS.xcodeProj, which should open in XCode 5. XCode may suggest to make adaptions to the project file, which should be denied. Also you may see that XCode is building an indexing of the files — in this case wait until it is done.

New: By default, XCode will store a library (which is usually not the end-product) into a temporary directory. To avoid that, we select in XCode in menu `XCode` item `Preferences`. In the preferences dialog, select in tab `Locations` for item `DerivedData` the option `Relative` and it should by default offer the string

`DerivedData` as a directory name. We also select `Advanced...` here and ensure that the build location is set to `Custom/Relative to Derived Data`. After a successful build, the library should thus be in

`source/Irrlicht/MacOSX/DerivedData/Build/Products/Debug/libIrrlicht.a`

in the irrLicht folder, and the Makefile contains an according line where it looks for the libIrrlicht.

Basically everything should compile if you select in menu `Product` the item `Build`. The compile process also takes a while and it generates several warnings that we of course ignore. If there is any trouble getting to a successful build, you can check the project settings—correct architecture (should be `x86_64` on most modern macs) and operating system version, and that libirrlicht.a is a target.

Hopefully it works now!