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Interactive Computer Graphics (exercise sheet 0)

Welcome to InCG   The assignments are small stand-alone C++ programs, that build on Linux or Windows via CMake (MacOS probably works too, but we don't offer support). However, the programs don't run on every system because of hardware requirements (e.g. GPU with OpenGL 4.5). You can always use CIPs 3 and 4 (e.g. when your own hardware is not sufficient). But, please make sure not to disturb other courses.

You can setup and run an assignment as follows (replace ## with assignment numbers, e.g. 01):

Unpack the assignment `a##.zip` and the external libraries `external.zip` into the same folder.

```
$ unzip external.zip
$ unzip a##.zip
```

Linux   Install dependency (already installed at the CIPs).

```
$ sudo apt install libglu1-mesa-dev
```

Build and run the assignment.

```
$ cd a##
$ mkdir build
$ cd build
$ cmake ..
$ make
$ cd ..
$ ./a##
```

Windows   Install `Visual Studio 2022` with the C++-packages `MSVC` and `CMake-tools for Windows`. In Visual Studio, open the assignment folder `a##` (`File -> Open -> Folder`). CMake configure and generate should automatically run in the console. After successful configuration, select the build target `a##.exe` and click on the green arrow to build and run the program.

Framework   To do the actual first assignment, the lecture on anti-aliasing is required. Nevertheless, you can already start familiarizing yourself with the framework.

Interesting code regions and hints in the assignments are marked with `TODO`. The camera can be controlled with WASD-keys and mouse (left button: rotate; right button: shift; center button: move forward/backward; scroll-wheel: in-/decrease distance to rotation-center) Note that, shaders are automatically reloaded when the shader file is changed.

You also might want to take a deeper look into the `external/incg` directory, since it contains the code for the framework used for the assignments. Feel free to also modify that code for convenience (e.g. different camera control). However, your submission code should be compatible with the original framework.

Submission   We recommend to work in Groups of two/three. To submit your solution, one member of your group uploads a `.zip` file to the assignment in StudOn. The zip-file should contain - at least the modified - code and shader files in the given folder structure. Please also make sure that, no build folder, libraries, executables or other irrelevant data is submitted.

Presentation   After each submission, there will be presentation sessions. There, we will informally talk with your group about your implementation, ask some questions if needed and have a look at the results together. The presentation will take place during the usual exercise time-slot in the CIP.

Happy Hacking! :)