UNIVERSITÄT BERN

Introduction to Computer Graphics
Assignment 0 – Raytracing "Hello World"

Handout date: 20.09.2019

Submission deadline: 27.09.2019, 12:00

Late submissions are not accepted

This assignment is primarily intended to ensure the provided raytracing framework code properly builds and runs on your computer. Instructions for building the code can be found in `README.md` of the zip archive. You are also encouraged to browse through and familiarize yourself with the code; future assignments will ask you to add various functionalities to it.

Collaboration tools

We recommend to create a **private** *git* repository for collaboration with your fellow group members. Multiple providers offer free hosting of private git[1] repositories, e.g. https://gitlab.com or https://github.com.

For those new to git, a basic tutorial can be found at http://try.github.io (independent of the hosting provider, this does not just apply to github). But feel free to use any other way to synchronize code in your team.

Development Environments

While it's totally fine to edit your files in notepad.exe, vi or ed[2] and compile on the command line, when working with a complex code base, an IDE can be very useful.

The code templates we provide are tested with these C++ IDEs:

- *Qt Creator* – Free and Open Source Software, available on Linux, Mac, Windows and BSD. https://qt.io[3]
- *CLion* – Proprietary, available on Linux, Mac and Windows. Free academic licenses available. https://www.jetbrains.com/clion/

[1] N.B.: Do not confuse *git*, the version control system, with *github* or *gitlab*, which are services that host *git* repositories.

[2] http://cs.wellesley.edu/~cs249/Resources/ed_is_the_standard_text_editor.html

[3] On Windows, either enable the MinGW compiler during installation or have MSVC installed.

- *Microsoft Visual Studio (MSVC)* – Proprietary, Windows only[4]. Student or free community licenses available. https://visualstudio.microsoft.com/.

Feel free to use any programming environment you like, however exotic choices can limit the support we can provide to you in case of problems.

Assignment

The required part of this assignment is to compile the provided raytracer framework, edit the file `scenes/solid_color/solid_color.sce` to produce the color of your choice and render it to the output file "`solid_color.tga`". The color is specified in RGB space, each component bounded between zero and one.

What to hand in

A single .zip compressed file, with contents as follows:

- Hand in **only** the files you changed (in this case, `solid_color.sce`) and the requested program output (in this case one output image). It is up to you to make sure that all files that you have changed are in the zip.
- A `readme.txt` file containing a **brief** description on how you solved each exercise and the encountered problems.
- Other files that are required by your `readme.txt` file. For example, if you mention some screenshot images in `readme.txt`, these images need to be submitted too.
- For theory exercises, a `TheoryExercise.pdf` document with your answers.[5]

Submit solutions to ILIAS before the deadline. Late submissions receive 0 points!

[4] Not to be confused with *Visual Studio Code* or *Visual Studio for Mac* - these are different products

[5] Not required for assignment 0.