



19. DECEMBER 2018

INTRODUCTION TO COMPUTER GRAPHICS RENDERING COMPETITION

Submission deadline for the Rendering Competition: 03. February 2019, 23:59 CET

Throughout the semester you have been working hard on your ray tracer. The Rendering Competition is the final step. Its goal is to show off how good your ray tracing engine is, and how you can use it to create stunning images. Your task is to:

- a) Create an original scene.
- b) Use your ray tracer to create an image.
- c) Create a web page to describe the image and highlight the engine features.

You can either submit an entry per team (akin to the assignments), or one entry per person.

1 The Scene

Your scene should be original. You can get *inspiration* from past rendering competitions at other institutions, or from the various ray-traced images available on the web, but the final scene should be the product of your own imagination.

You are allowed to use third-party assets, such as models or textures (e.g. from Google 3D Warehouse¹, Blend Swap², etc.). Those assets must be publicly available for free. You can use those assets to build your original scene, but it is not allowed for the whole, or major part of the scene to be straight reused from somewhere. Alternatively, you can model everything yourself, e.g. using Blender (free for all) or 3DS Max (free for students at UdS).

All assets used in the scene must be included with the submission.

2 The Rendering

You must submit two PNG images: a low quality at around 480x270 and high quality with resolution 1920x1080 or higher. You may use different aspect ratio if it fits better your scene.

The image must be rendered by your own ray tracer. Any post-process operation you may want to apply should be implemented within your framework and not performed via some third-party image-editing software or library.

You may implement additional features in your ray tracer if your scene needs it, but it is not required. The grading will be based on the artistic merit of the image, and not the amount of additional code you have put into the ray tracer. On the other hand, of course, those additional features — if used right — can make your image more interesting.

The image does not have to be *realistic*. You can use features that do not follow the real life physics if your artistic concept demands it.

The final image must render roughly in less than 12 hours on a modern computer.

¹<https://3dwarehouse.sketchup.com/>

²<https://www.blendswap.com/>

3 The Website

On the website you should advertise your image (why should it win the competition?) and describe your work:

- Summarize your concept. How you arrived to it.
- Shortly describe how you were building up your scene.
- Highlight your image. Which are more interesting parts or features? You may include additional images on your page.
- List all additional features you have implemented.
 - Say where the feature can be visible on your image
 - Who implemented it (if in group)
 - Where in the source code it can be found
- Give references to all third-party material.
- Any other comments you would like to include.

In addition you must include:

- Names of all participants
- Title of your scene

4 Submission

- Submit your entry for the rendering competition via e-mail to lemme@cg.uni-saarland.de.
- The subject of the message should be of the form
 - For single person: `RC1819 MatrNum LastName`
 - For a team: `RC1819 MatrNum1 MatrNum2 groupID`
- Avoid special characters like ä ü ó ß.
- Submit two files:
 - The source code of your ray tracer together with all the assets needed for rendering: `LastName_rt.zip` or `groupID_rt.zip`
 - The web page: `LastName_web.zip` or `groupID_web.zip`
- The ray tracer code should follow a similar structure as the framework that we provided. It must build out-of-the-box using CMake without any third-party dependencies (except libpng). You may add an `assignment-rc.cmake` with a similar structure as the others in order to add further sources.
- The main program, when invoked without parameters, should render the high-quality image. No additional configuration, or downloading extra files should be required.
- Do not include executables or object files in your submission — we will compile your code.
- The web page should contain at least three files: `final.png`, `thumbnail.png`, and `index.html`.

If the files are too big to send via mail, you may put them at some external location and send us a link. Alternatively, you can hand it in on some physical medium (CDs, USB drives) — in which case compression is not necessary, but the file structure should be the same.