

Report: Homework 5 reloaded - Advanced Programming

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May 21, 2015

Instructor:	Dipl.-Ing. Dr. Simon Ostermann
Parts solved of the sheet:	Grid task
Programming language:	Java
Library used:	JGlobus (https://github.com/jglobus/JGlobus)
Total points:	15

1 Requirements

- Java 1.7
- Ant 1.9.2

2 How to run the programme

First of all extract the archive file `homework_5_2.tar.gz`:

```
$ tar -xzf homework_5_2.tar.gz
$ cd homework_5_2
```

Afterwards move/copy the povray files `povray`, `gm` and `scherk.pov` to the `povray/` directory:

```
$ cp <gm-file-path> <povray-file-path> <scherk.pov-file-path> povray/
```

Now use ant to compile the sources and build the runnable jar:

```
$ ant compile jar
```

At last run the created jar with ant, where `<frames>` is the number of frames which should be rendered:

```
$ ant run -Darg0=<frames>
```

3 Programme explanation

The files of the the programme are structured as follows:

- The `src` directory contains the source file
- The `povray` directory contains the povray files `povray`, `gm` and `scherk.pov` and the shell script `povray_render.sh`, which simply runs povray with specific parameters
- The `lib` directory contains the library files of JGlobus
- The `build.xml` file contains build information for Ant

The source file `src/gridRenderer/GridRenderer.java` basically uses the JGlobus library files to copy the `povray` files to the remote nodes and render the frames on them. For parallel rendering the programme uses the standard `Thread` class of Java. The locale machine collects the rendered pictures and runs the `gm` script to produce the gif file.

4 Remark

I wanted to use `Maven` in combination with the newest version of JGlobus (<http://mvnrepository.com/artifact/org.jglobus>), so that I do not have to upload the `jar`-library files. Unfortunately there seems to be a problem with the `checkCRLDateValidity()` (<https://github.com/jglobus/JGlobus/blob/master/ssl-proxies/src/main/java/org/globus/gsi/trustmanager/CRLChecker.java>) mentioned by Matthias Lechner in the Grid forum. That's why I just used `Ant` and a modified version of the `CRLChecker`, where I commented an exception for wrongly invalid certificates.