Report: Homework 5 reloaded - Advanced Programming

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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
```

If you have no proxy, initialize one:

```
$ grid−proxy−init
```

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. Unfortunatelly 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.