Intelligente Softwaresysteme
Prof. Dr.-Ing. Norbert Siegmund | Philipp Seltmann

Bauhaus-Universität Weimar

Deadline: 27.10.2016 um 23:59 Uhr

Exercises for the Lecture
Software Engineering – WS 16/17

Assignment 01

1. **Software Life Cycle** (5 x 1 Points)
   Name the phases of the software life cycle and describe in short the main activities and output of each phase.

2. **Program Example: University Management Software** (10 Points)
   For the software, we consider only the components *Professors* and *Students*.

   - Both groups of persons have a given and family name. Professors further have a person ID and students a student ID (Matrikelnummer).

   - Implement the corresponding classes in Java and focus on extensibility. Each class should have at least *getter* and *setter* methods and one *constructor*.

3. **Requirements Description: Volere - Snow Card** (2 x 3 Punkte)
   Given is the following scenario:

   The new graphics software intellijPhoto is an interactive tool to view and edit images. Each image is represented by a 2D array of bytes, where each byte value represents a color value of the pixel. The user should be able to query the image dimensions. The software can represent two different types of images: "RasterImage" and "ShapedImage", where the latter one is a special form of "RasterImage". A "ShapedImage" has a non-rectangular shape (polygon); the bytes in the array specify whether the respective pixel is transparent or opaque. Furthermore, the software should be able to allow simple image manipulations. This will allow the user to rotate, magnify and reduce images, set new color values in the image, and combine two images into a new image within 0.2 seconds.

   Conduct a Requirements Description according to Volere for a functional and a non-functional requirement. You can find a detailed description of *Volere Snow card* here:
   http://www.volere.co.uk/pdf%20files/06%20Atomic%20Requirements.pdf

Information for Submissions

- To submit your solution, create a **PDF-File**, in which your answers as text and figures are stored.

- If you are required to submit a programming task, please send only the source code as plain text file. Source code in a PDF file won't be considered!

- To allow tracing from PDF to the source code file, please reference the source code files in the PDF file.

- For your PDF document, please write your **name** and **student ID (Matrikelnummer)** of each team member.

- Please compress all files into a single zip-file with the following file name (team submission require the data of only a single person):
  `<Family name>-<student ID (MatrikelNr)>-se-blatt<Nb Excercise>.zip`

- Send this file to Philipp Seltmann (**philipp.seltmann@uni-weimar.de**)