

050132 Advanced Software Architecture (UE), Winter Semester 2015/16

Task 4

Task 4: Model representation and model to model transformation

Task-ID: M2M

General Remarks

- The **deadline** for this work is 13.12.2015, which can also be found in Moodle (<https://moodle.univie.ac.at/course/view.php?id=46197>). The deadline is firm! No deadline extensions are given.
- You will have to present your solution during the presentation in class: 12.01.2016 (Group 3), 13.01.2016 (Group 2), 07.01.2016 (Group 4), 08.01.2016 (Group 1), so be prepared and bring with you the requisite materials (laptop, your presentation, running example, ...)
- Your delivered solution will be graded with up to 10 points, which have to be defended during presentation.
- This is an **individual work**. Consequently, group work is **not** allowed in this assignment.
- If you have problems, do not hesitate to query the Moodle forum (<https://moodle.univie.ac.at/mod/forum/view.php?id=1120095>), contact the tutors (ase.tutor@swa.univie.ac.at), or us (ase@swa.univie.ac.at) via e-mail.

Submission Guidelines

- The guidelines proposed on https://swa.univie.ac.at/General_guidelines must **always** be satisfied.
- If guidelines are ignored,
 - an assessment of the tasks **cannot be guaranteed** because they are processed electronically.
 - In case of any unsatisfied guidelines, three (3) points will be deducted from the assessment of the task.
- Artifacts to upload into Moodle are (see guidelines for more information):
One (1) ZIP archive containing:
 - Project(s) containing your code
 - Document about your assumptions (PDF)

Task Definition:

Right at the Start

Please, read the guidelines at https://swa.univie.ac.at/General_guidelines, especially the part about naming conventions for your uploads! If you do not follow these guidelines, we will not be able to grade your work, because we will not be able to find your files any more (yes, it is that simple ...).

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Task 4 Assignment

In this assignment you will create a visual representation of the Wikipedia application based on the materials from our previous assignments (1-3). In addition you will implement a model to model transformation.

Model Representation:

Use Java Swing [1] to create graphical user interfaces (GUIs) for the model elements from Assignment 2. At least one instance of each model element should be created. For the content of the pages you must use the Wiki markup language developed in Assignment 3. Your application should at least provide a way to display and update the relevant model elements. For instance, to display the HTML representation of page content you should use the JEditorPane (please note that it supports only HTML 3.2). Make sure that changes in the GUI also update your model.

Model to Model Transformation:

Implement a model to model transformation algorithm that transforms the Wiki model to the JSON model provided by us [2]. Serialize the JSON model instance in the console. You might simply add a *Button* element in your GUI that would enable such a transformation. For instance, for the following model elements:

```
User u1 = UserFactory.eINSTANCE.createUser();
u1.setId("u1");
u1.setName("Alice");

User u2 = UserFactory.eINSTANCE.createUser();
u2.setId("u2");
u2.setName("Eric");

u1.getFriends().add(u2);
```

an appropriate JSON serialization would be:

```
[
  {
    "id": "u1",
    "name": "Alice",
    "friends": [ "u2" ]
  },
  {
    "id": "u2",
    "name": "Eric"
  }
]
```

Checklist

Before uploading your solution, ensure the following checkpoints can be marked positive:

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- I followed the guidelines and conventions from https://swa.univie.ac.at/General_guidelines
- I created a Java Swing based GUI to display the model elements and their content
- The changes in my GUI also update my model
- I implemented a model to model transformation from the Wiki model to the JSON model

Tips and references

[1] Java Swing: <http://docs.oracle.com/javase/tutorial/uiswing/>

[2] JSON model:

https://moodle.univie.ac.at/pluginfile.php/2035351/mod_resource/content/1/JSONFormat2.png

Document your thought and solution process. Feel free to make your own assumptions, but mention them in your document. If you use solutions found on the web, please record them as such, with the appropriate link.