Universität des Saarlandes

Fakultät 6 – Fachrichtung 6.2 – Informatik

Prof. Dr. Jana Koehler

Architectural Thinking for Intelligent Systems, WS 2019

Assignment 1

Task Description for Lecture 2: Modeling for Architects I: UML

We practice the usage of UML with a number of exercises.

Description:

You work in the software development department of a manufacturer of a fancy coffee-machine on kickstarter. The company wants to develop a new coffee machine, which will be operated entirely via a touchscreen. The touchscreen contains all the necessary buttons and control elements, except the button to switch the coffee machine on or off. The user can fine tune the settings of each internal component of the machine using the screen. The coffee maker consist of the following internal parts: a water tank with a level indicator, a beans container, a water pump, a heating unit, a bean grinder, and a brewing unit.

1) Describe the different parts of the coffee maker in a **component diagram**. Try to assign the different parts into four different subsystems and connect all components with appropriate connectors and ports.

2) Design a **class diagram** which reflects the components and their individual properties, which can be adjusted on a fine grained basis by the user. Align the package structure with the component diagram from task 1.

3) Describe the **temporal evolution** of the coffee maker while making a coffee using a **state diagram**.

4) Consider a user orders a coffee and the machine reports an error due to an insufficient amount of water, which is displayed on the screen. Create a **sequence diagram** which models the interaction of the components involved.

Universität des Saarlandes

Fakultät 6 – Fachrichtung 6.2 – Informatik

Prof. Dr. Jana Koehler

Architectural Thinking for Intelligent Systems, WS 2019

As mentioned in the lecture, all upcoming assignments have to be based on YOUR project and should be prepared in teams. If you already found your team member, the next task can be solved cooperatively, otherwise the task can help you to find your team.

5) Describe your project idea in form of a **short abstract** which have to be **pitched** in the tutorial session in the scope of two minutes. NOTE: The pitch does not count as team presentation.

Submission

Instructions can be found in slide deck A1-BasicConcepts and on the course website.