Bachelor project: Single and Multi-user Web-based Modeling Tool Based on HTML5 and Javascript

Semester: Sommersemester 2017

Language: Deutsch/English

Motivation

More and more often there is a need to design a light-weight, web-based version of modeling tools, also in the context of collaborative modeling. Currently, HTML5 and JavaScript applied together allow for relative easy development of web-based modeling tools. More and more often however, we are not only interested in single-user online modeling tools, but in a web-based tool supporting collaborative design of models. This comes with additional challenges, not only connected with the applied technology, but also connected with the real time updates, dealing with simultaneous (also contradictory) changes, making the changes made by each user visible etc.

Description

The aim of this bachelor project is to develop with the help of HTML5 and JavaScript a Web-Based Modeling Tool allowing, among others, for designing diagrams using selected modeling languages (e.g., DFD, State diagrams). Therefore, the modeling tool should provide a modeling palette, modeling canvas as well as additional functionalities (e.g., saving the created model, loading an already created model). In addition, the possibilities and limitations of developing and using Multi-User Web-Based Modeling Tool should be investigated and an exemplary implementation of such a collaborative modeling tool should follow. Therefore, the project encompasses:

1. Analysis of the existing/available Web-based Modeling Tools, capabilities offered by HTML5 and Java Script, available literature regarding the collaborative design of models.
2. Implementation of the Single and Multi-user Web-Based Modeling Tools.
3. Preparing a project report and documentation.

Size of the group: 2-3

Expected outcomes: Code/developed Single and Multiple-User Web-based Modeling Tools for the agreed upon modeling languages; Documentation, Project report describing the results of the work – including the possibilities and limitations of the collaborative version of the web-based modeling tool.

Application procedure: Please apply via email to the supervisor. Please attach a short letter of motivation (app. ½ A4 page) and a recent performance record ('Leistungsnachweis'). You can apply individually or in a group of 2-3

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participants (in this case each person should still send a separate e-mail, however point to the other members of the group). In case you are applying also for other projects, please mention it in the email.

Application deadline: 05.05.2017