Group number: 5

Group name: Church

Names: Morten Egelund Rasmussen, Ole Ertmann Nielsen, Sten Anderson Rasmus Lohals Larsen

Emails: [stea@itu.dk](mailto:stea@itu.dk), [rlla@itu.dk](mailto:rlla@itu.dk)

1 Example textual model 3

2 Meta-model 4

3 Static semantics 5

4 Xtext grammar 6

5 Backends 7

5.1 HTML 5 client 7

5.2 Windows Phone client 7

6 Test methods and artefacts 8

# Example textual model

# Meta-model

# Static semantics

# Xtext grammar

# Backends

## HTML 5 mobile web client

The HTML client is build using HTML5, javascript and CSS. The code generated is purely html and javascript, so no compilation is taking place as these scripts are interpreted by a browser. We have used two popular javacript frameworks Jquery Mobile (JQM) and Knockout to build a single page web application (SPA), with a clearly defined user interface architecture. Jquery mobile enables mobile oriented user experiences using a simple declarative markup. Depending on the markup the framework applies javascript and CSS to give the application a native mobile look and feel. Knockout is a two data binding javascript framework that uses the Model-View-ViewModel (MVVM) user interface architectual pattern to facilitate a clear separation of concerns between user interface logic and data model manipulation. This separation made it fairly straight forward to generate code from an instance of our Meta Model. Using the Knockout validation plugin, converting our validation expressions into javascript code was also straight forward, as this plugin enable custom validation rules, which is automatically applied by the framework.

|  |
| --- |
| Overview of html client architecture |
|  |

|  |
| --- |
| Jquery mobile page sample |
| <**div id="main" data-role="page" data-add-back-btn="true"**>  <**div data-role="header"**>  <**h1**>  car  </**h1**>  <**button class="ui-btn-right ui-icon-check ui-btn-icon-right ui-btn" onclick="***submitconfiguration*();**"**>submit</**button**>  </**div**>   <**div role="main"**>  <**section class="description"**>  A configurator for a car  </**section**>  <**section class="validationSection" data-bind="css:{showValidationSummary: !isModelValid()}"**>  <**div class="validationSummary"**>  <**h4**>Validation summary</**h4**>  <**ul data-bind="foreach: currentErrors"**>  <**li**><**span data-bind="text: $data"**> </**span**> </**li**>  </**ul**>  </**div**>  </**section**>  <**ul data-role="listview"**>  <**li**>  <**label for="engine-param"**>engine:</**label**>   <**select id="engine-param" data-bind="options: engine.choices, selectedOptions: engine.value,optionsCaption:'Choose...'"**>      </**select**>  <**p class="validationMessage" data-bind="validationMessage: engine.value"**></**p**>  <**li data-bind="visible: group\_seats().isVisible"**>  <**a href="#seats"**>seats  <**p class="validationMessage" data-bind="validationMessage: group\_seats"**></**p**></**a**>  </**li**>  </**ul**>  </**div**> </**div**> |

|  |
| --- |
| Knockout ViewModel object sample |
| **engine**: {  **choices**: [**'TFSI 1.2'**, **'TFSI 1.4'**, **'TFSI 2.02'**],  **value**: **ko**.observable()  .**extend**({  **validation**: {  validator: **function** (val, param) {  **if**(***App***.**ViewModel**==**null**)*//not initialized* **return true**;  *//Expression here:* **var** result =  (  **$**.inArray(**"TFSI 1.2"**, ***App***.**ViewModel**().**engine**.**value**()) > -1 ||  **$**.inArray(**"TFSI 1.4"**, ***App***.**ViewModel**().**engine**.**value**()) > -1  ) ||  **$**.inArray(**"sport"**, ***App***.**ViewModel**().**variant**.**value**()) > -1  **return** result;   },  **message**: **"Big engines only available for sports model"** }}) } |

## Windows Phone client

# Test methods and artefacts