Processeditor - How to model PCM

Abstract:

The Processeditor gives the opportunity to create different diagrams. Those diagrams can be a graphical representation of process models. They may be executed inside a Process Engine. In the following we will describe how you can model and configure Production Case Management models, which can be used for the execution inside the JEngine. Before, we will introduce you to the basic deployment and usage of the Processeditor.

Realization:

1. Deployment

The Processeditor consists of two components, the server which allows you to create and alter models inside your process as well as saving them to a centralized repository and the Workbench, a Rich Client which allows you to create, alter and save models locally and to publish them on a running Processeditor server. If you want to integrate the Processeditor and the JEngine you need both components. You can deploy them using *https://ant.apache.org.*

1.1 Cloning the Repository

The code of the Processeditor is hosted on Github. We recommend to use git to clone the repository. To clone the repository type the following command:

git clone --recursive https://github.com/BP2014W1/processeditor

1.2 Workbench

The Workbench is a Rich Client for the Processeditor. If you would like to deploy it using Ant, run the following commands from the command line. Assert that you are inside the Projects root directory with the build.xml file.

ant init-ivy deps clean-build-workbench

Inside the build/jar folder will be a processeditor.jar file. If you execute this using java, a window with a Java application - the Workbench - will be opened.

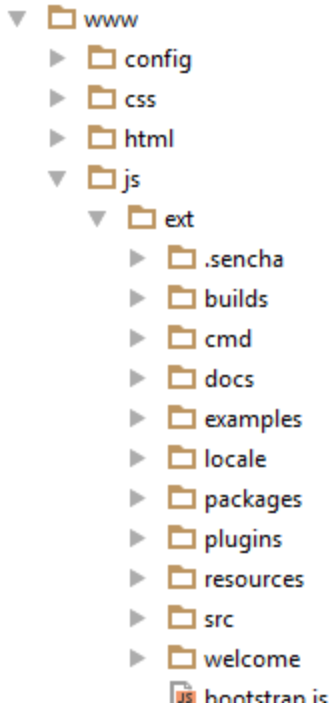
java -jar build/jar/processeditor.jar

1.3 Server

The server is another component of the Processeditor. It can be used as an online modeling tool and as a model repository. If you want to deploy the server, you first need to add the necessary dependencies. All Java dependencies can be added running Ivy.

ant init-ivy deps

In addition, you need ExtJS 4. This is necessary to display the components of the webmodeler. Please copy the files into www/js/ext:



If you have successfully completed the previous steps you can deploy the server using the command:

ant clean-build-server

Please note:
If you need both, the Processeditor server and the Workbench, make sure to copy the jar file created during the first steps, because deploying the other component will automatically overwrite the jar.

If you want to start the Processeditor server you can do so from the command line

java -jar processeditor.jar -Xmx 1024m

2. Modeling

In the following we describe how you can create PCM-Models using the Workbench and how you can publish them to the server.

2.1 Creating a new Model

We assume that you have started the Workbench and the server. There are two ways to create a new model. You can either use the File >> New menu or the New Icon. Nevertheless, you always have to choose the type of the model to be created.

2.2 Publish a Model

If you create your diagrams in the Workbench and if you have a Processeditor Server running you can publish a model to the centralized repository (the server). Therefore, you have to do

either, click on the Publish icon or use the menu item inside the file Menu. Then you have to select a server and a name for the model. In addition, you can choose if you want to save the model as a new version of an existing one or as a new model.

2.3 Fetch a Model

If you work inside your Workbench you have to fetch Models from the server, in order to alter or view them. To do so click on the Fetch icon or use the menu item inside the File menu. You can now connect to a server. After that you will see a tree with all diagrams and folders on the server model repository. Choose the one you want to open.

2.4 Modeling PCM-Fragments

You can model a PCM Fragment by choosing the PCM Fragment type from the context menu. Now you can add nodes by clicking right on the canvas. You can choose from Start Events, Activities, Gateways, End Events and Data Objects. If you want to use the created model for the execution in the engine you have to be aware of the following constraints:

- Every fragment must contain exactly one start and end event
- All Events must be blank
- The activities must be either blank, Sending Mail Task or Service Task
- The Gateways must be exclusive or parallel ones

Referring an Activity From Another Fragment

If you want to refer an activity from another Fragment, you have to do the following steps.

- The task in the other fragment has to be marked as global (right click on activity, properties, global).
- This fragment has to be published on a server.
- Make a right click choose Copy and Refer Task. Select the Fragment and the Task to be copied.

The task will be added to the current model. You can add edges either by dragging a new node from the context menu of the previous node or by pressing and holding the right button.

2.5 Modeling a Data Model

If you want to create a Data Model for the Data Objects in your PCM Process you have to create a new Domain Model. Again, if you want to use this model from within the JEngine you have to publish it and you should at most create one Root Class. Right click "Edit Attributes" Allows you to add and remove attributes for each class. You can create relations between data classes using an Aggregation by pressing and holding the right mouse button.

2.6 Modeling a PCM Scenario

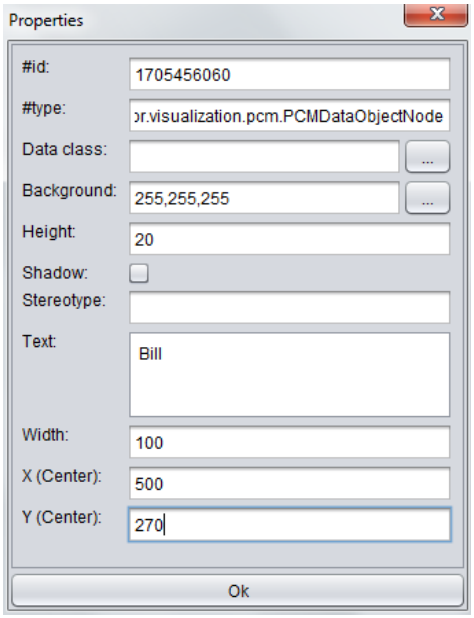
A PCM Scenario holds the whole Process, therefore it needs information about all fragments, the data objects and their relation to data classes. Hence, a couple of steps are necessary.

- **Adding Fragments:** First of all you have to add new Fragments. You can do this by using the plugin "Add Fragments" from within the process's contexts menu. Now you can connect to a server and select a number of Fragments from the right side, which should be added to the scenario.

- **Define a Domain-Model:** Every Scenario needs a Domain Model, therefore go to the properties of the model and paste the URL of the domain model into the domainModelURL Property. The server address must be the same as specified in the configuration class of the JEngine. This means the default URL would be

  http://localhost:1205/models/<domainModelId>.pm

- **Map Data Objects to Data Classes:** Every Data Object needs one Data Class. Hence, you must assign one. You can do this by editing the properties. If you want to execute the scenario you have to make sure, that the selected data class is in the model assigned to the PCM Scenario.



- **Define a Termination Condition:** A Scenario needs a clear termination condition, which can be defined in the corresponding menu. Therefore right-click on any node in the Scenario and choose the option "*Edit termination condition*". The termination condition consists of multiple subsets of all data nodes within a specific state. A new subset can be inserted by typing a comma separated list of data objects with their respective states. Each state is enclosed by []. This subset is confirmed by clicking the "*Add*"-button. A subset can be removed by clicking "*Delete*".

Make sure to publish the scenario, the domain model and all fragments to the process repository.