

HTML5 CANVAS WORKFLOW DIAGRAM EDITOR

Sponsor: INNOVA

Alias: iFlowEdit

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Description: According to market requirements, every day we need more and more applications which can be accessible from Internet and any operating system even on mobile devices. Most of the modern operating systems natively supports HTTP (HyperText Transfer Protocol) and have web browsers that partially supports brand new HTML5 standard such as Microsoft Windows, GNU/Linux, Google Android and Apple's iOS. One of the significant feature of the HTML5 standard is <canvas> tag. This tag enables drawing on a web based surface via Javascript without any third party plugins such as Adobe Flash.

On the other hand, XAML is an open XML document format which is designed by Microsoft to save the Workflow information of Microsoft's WF.NET or Workflow Foundation library (part of Microsoft .NET Framework 3.5 and 4).

As part of an Innova project, which aims to develop a Workflow Management product based on Microsoft's WF.NET, in this project, a web based component will be developed that can perform the tasks below:

- At the server-side, two sided conversion between the XAML format and JSON (Javascript Object Notation) format to transfer workflow definition to and from the client-side.
- Parse the JSON document and draw on a web surface as activities and their connections.
- Calculate automatically the best path of a connection from source activity to destination activity and draw it as calculated.
- A toolbox (stencil set) to show and select all available activities.
- Load the toolbox content from a config file which defines the available activities, connections, connection rules and their available attributes.
- Support User interactions:
 - Add new Activities from toolbox to the surface (Drag and Drop)
 - Move selected Activity to Activities on the surface
 - Delete selected Activity on the surface
 - Add oriented connections from an activity to another activity
 - Delete selected connection
 - Change the connection point of a connection on an activity
 - Change the attributes of a selected object (Activity or Connection) via a property editor.
 - Common editor features, such as Cut, Copy, Paste, Zoom-In, Zoom-Out, Scroll Bars.
- Send the changed JSON content to the server via AJAX request and save it as XAML

document.

Expected Outcomes:

- A visual component to edit workflows from supported web based environments.
- An example that shows the features
- Tests on different Operating Systems (Windows, GNU/Linux) and Browsers (Chrome, Firefox, Internet Explorer 9)
- A platform to enable development of different diagram editors such as UML editors.

Restrictions:

HTML5, Javascript

An opens source javascript graphics library to draw on canvas. (e.g. ProcessingJS)

Sencha Ext-JS (GPL Licenced GUI, Ajax library)