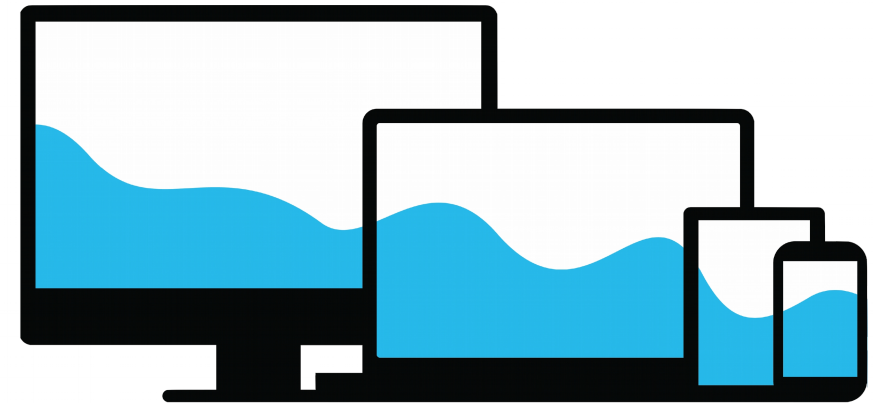


Motivation

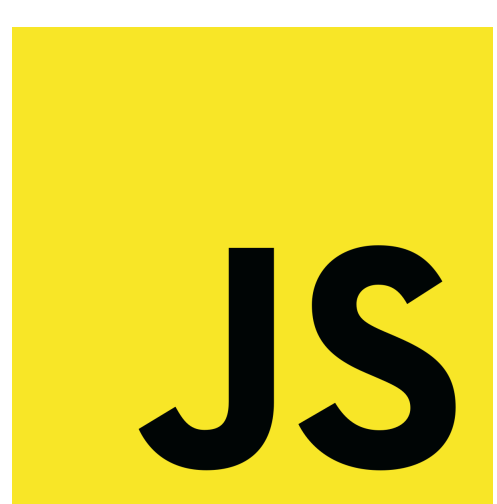
The goal of the project is the creation of a complementary view tool for Liquid.js which dynamically visualize the state of the user interface of liquid applications as an oriented graph. Moreover it implements an additional interface that allows to apply rule-based complementary view behaviours to liquid components.

Liquid.js basics

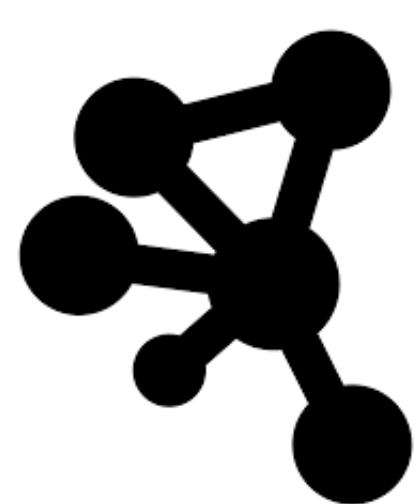


- Divides the web application into components and allows to distribute them among multiple devices
- Creates p2p communication channels between every pair of connected devices
- The components can be moved from one device to another
- The components contains properties (variables) which can be synchronized with properties of any other existing component

Technologies



JavaScript



Cytoscape.js



Yjs

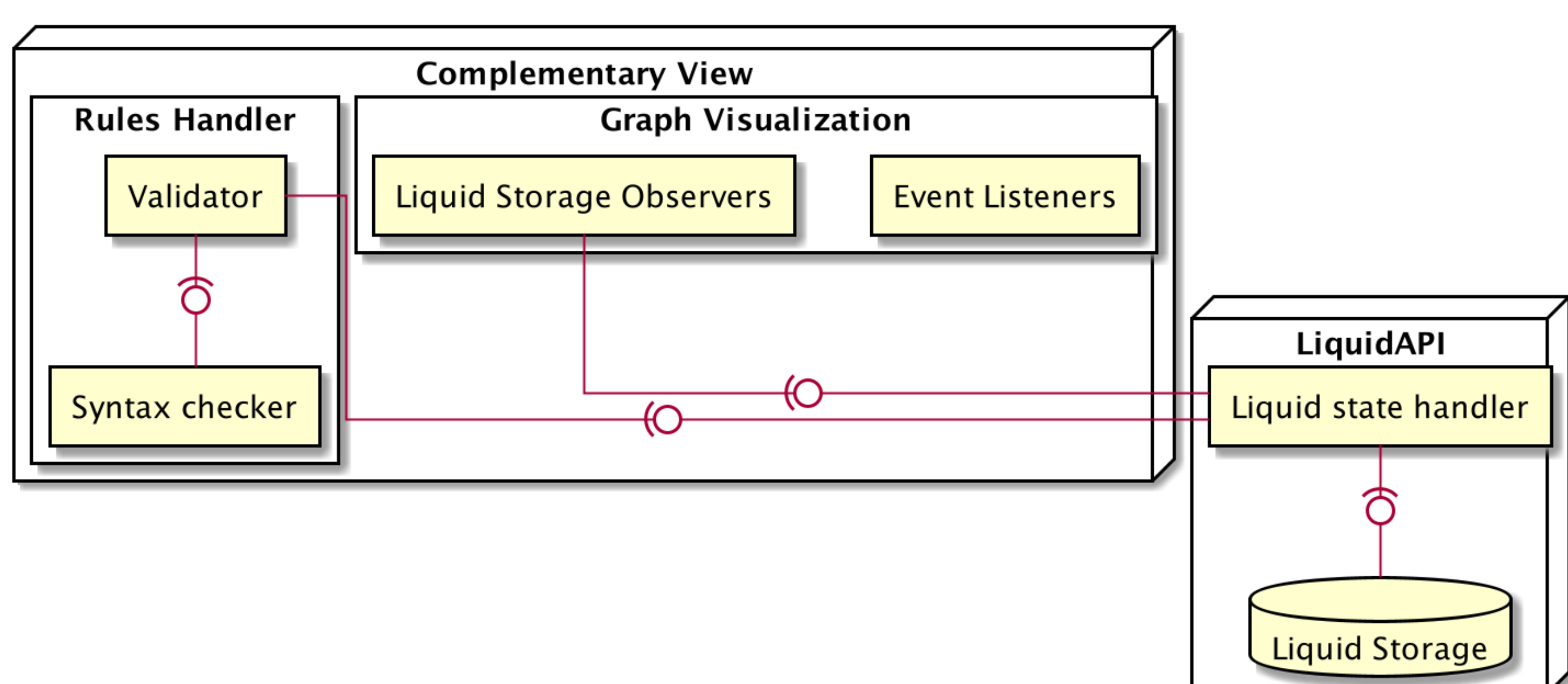


Polymer



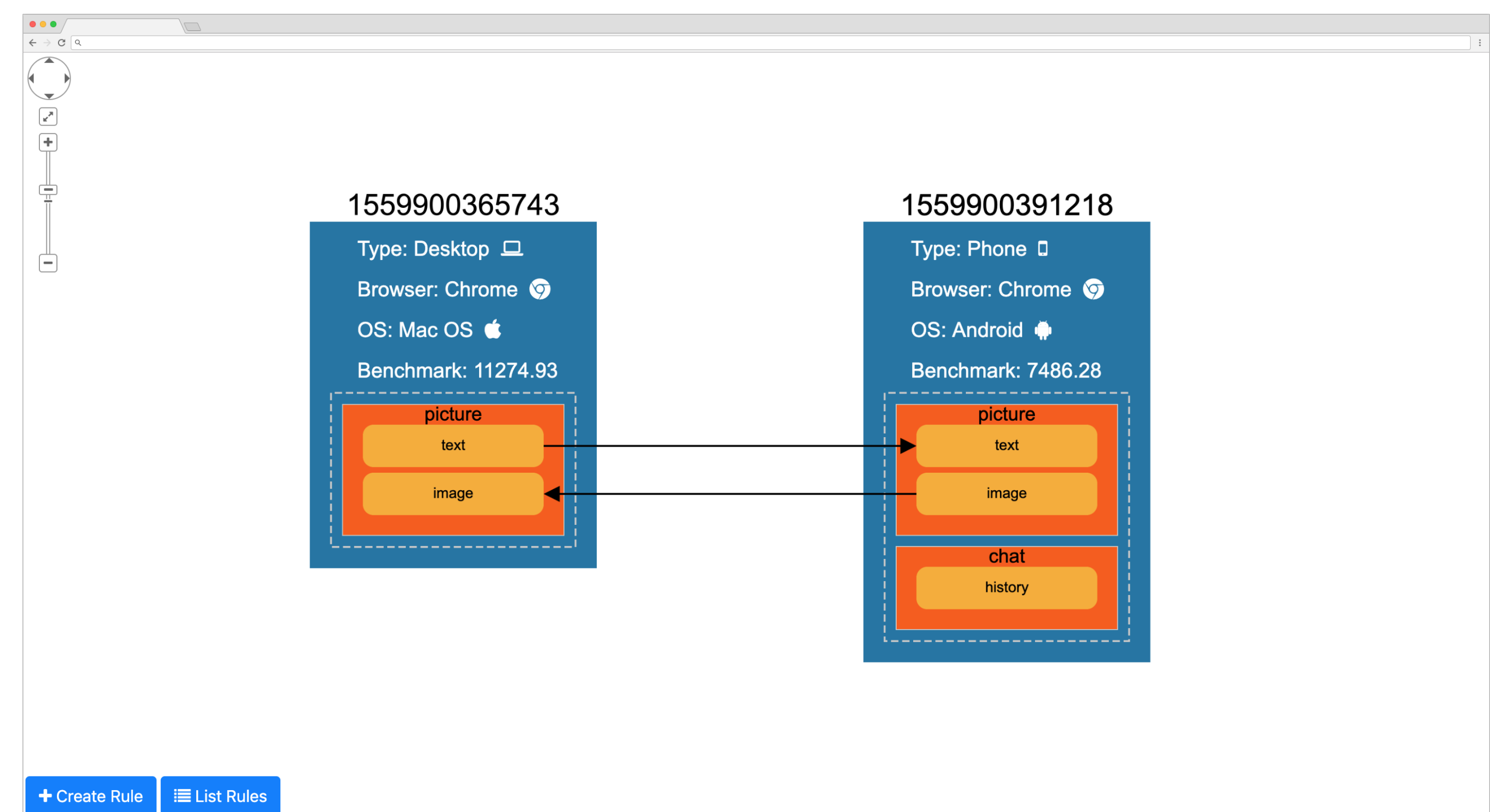
Bootstrap

Design



- Divided into two cooperating modules: Graph visualization and Rules Handler
- Component data shared among devices via global Liquid Storage implemented as Yjs Map

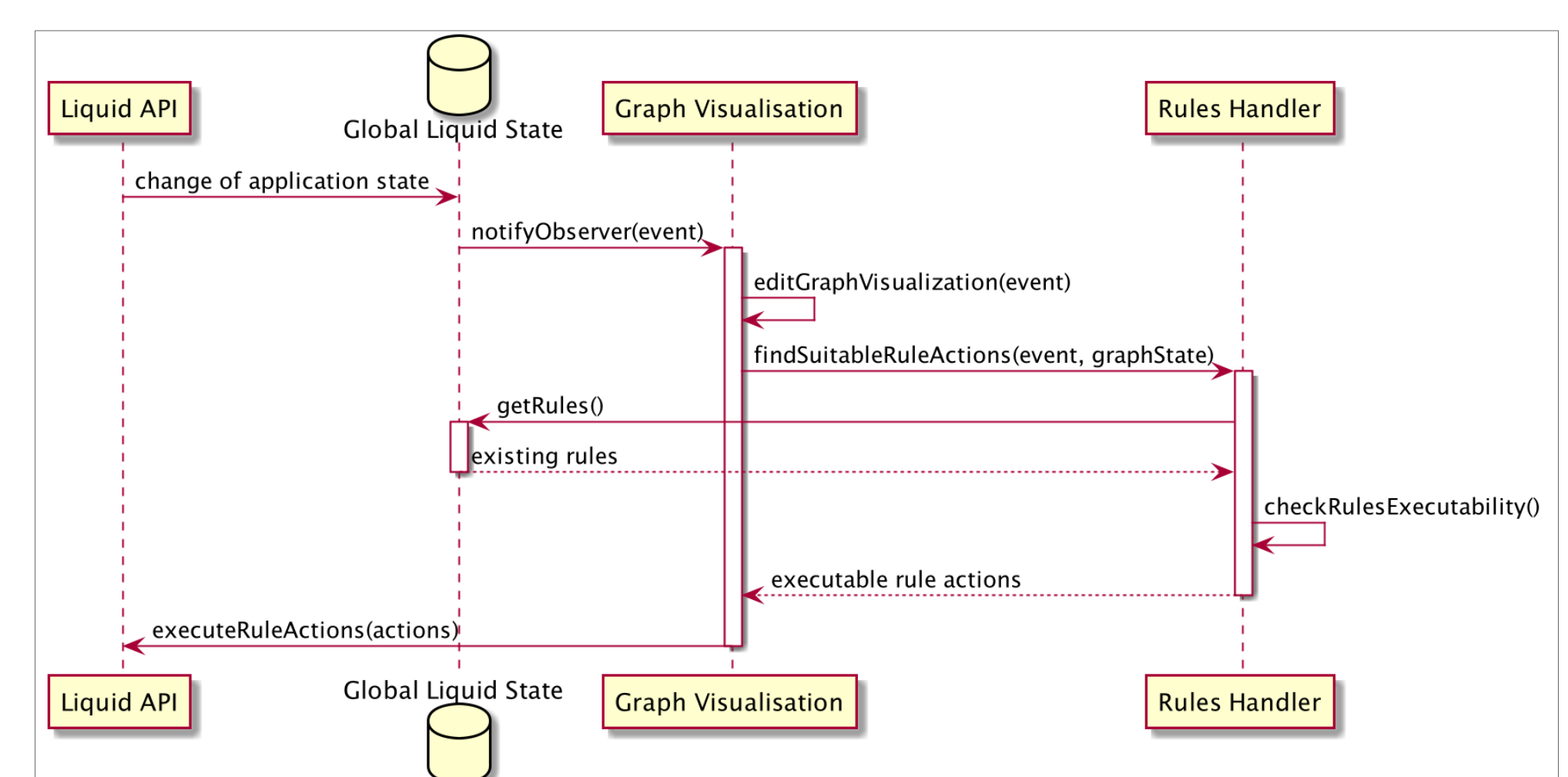
Graph visualization



- Displays the basic information about devices and current deployment state of the liquid application as oriented graph
- Allows user modify the state through the GUI
- Implemented with use of Cytoscape.js

Rule-based behaviour

- User can predefined reactions to specific state of the liquid application
- The user defined rules are composed of action and condition. The rule action is triggered when defined condition is met
- Possible actions are migrate, fork, clone component and pair, unpair property
- Condition describes the desired state of application which triggers the rule action, example: "if at least one tablet device is connected"



Future work

possibility to save the existing rules

- Currently lost if all devices disconnects
- Serialize the current state and save in the file
- Implement functionality to overwrite current state by the file content

screen-shots of components in the visualization

- Extends the displayed information about component
- Allows user to see all the components in one view