

DESIGN DOCUMENT

Creating a pipeline application

Fontys – EI3T1 & EI3S1

Fabian van Amerongen

Maximilian Bogdanov

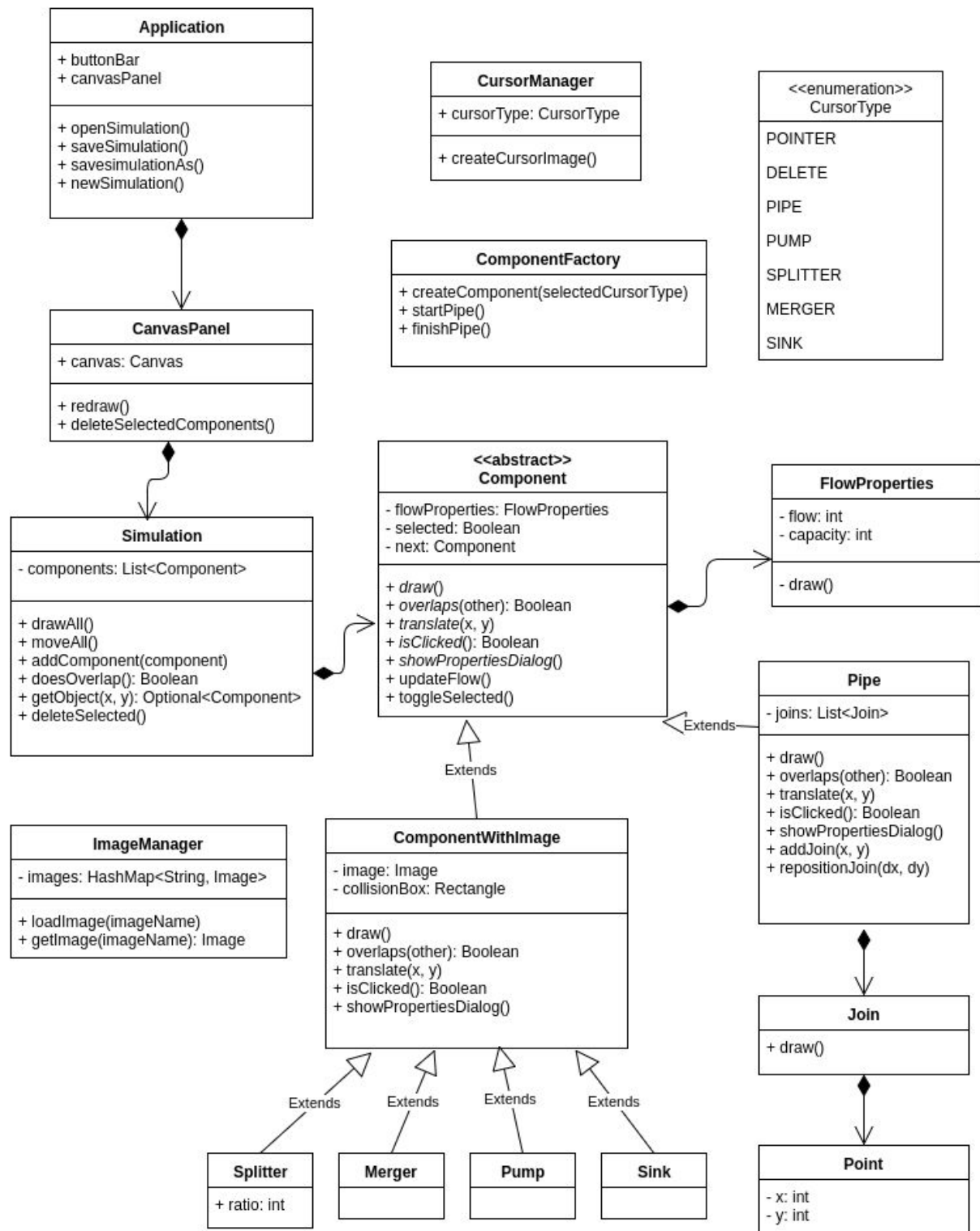
Veselin Slavchev

Nguyen Le

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Class Diagram



Description of classes

Application: The main class. It contains the menu bar and the canvas panel. It is responsible for setting up the UI and controlling the button events. Interaction with the canvas is handled in the CanvasPanel class.

CanvasPanel: Responsible for drawing and event handling for the canvas only. It contains the simulation.

Simulation: Manages all the components in the simulations. The state of this class represents the current simulation. It contains all the components and has methods to move/draw/delete all or only the select ones.

ComponentFactory: A singleton class that has mainly static methods. It creates components in a controlled manner; both pipes and components with images. The product is dependent on the type of cursor.

CursorManager: Controls the state of the cursor and the actual image of the cursor.

Component: The abstract base of a component. Can be drawn, moved about, checked if clicked, selected, modified and can update other components.

FlowProperties: A part to be used in components which have flow and capacity. Also responsible for showing an input dialog and validating input.

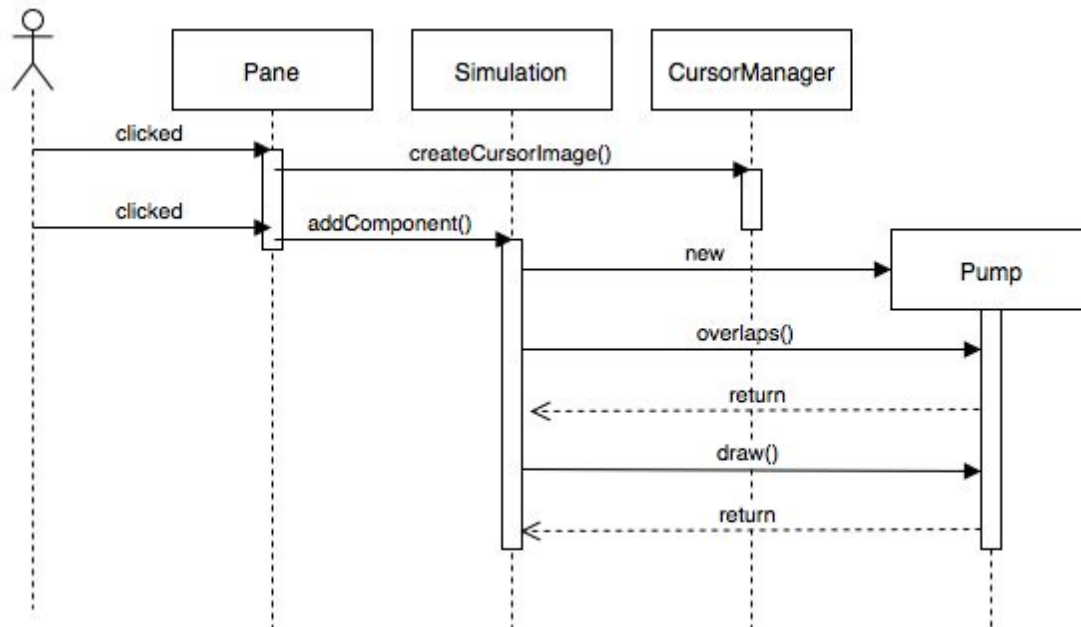
Pipe: A list of joins that form lines; can be drawn and clicked.

Join: A visual representation of a point, used to connect the lines of a pipe.

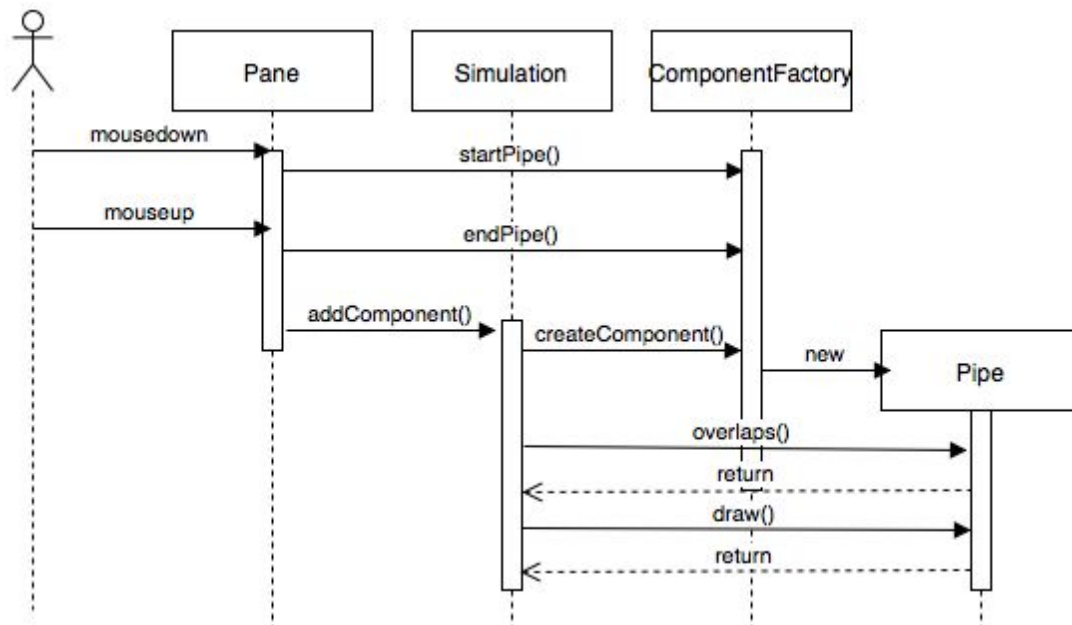
ImageManager: A singleton class that is responsible for loading, storing and retrieving images. They are contained in a HashMap and the keys are strings of the image names.

Sequence Diagram

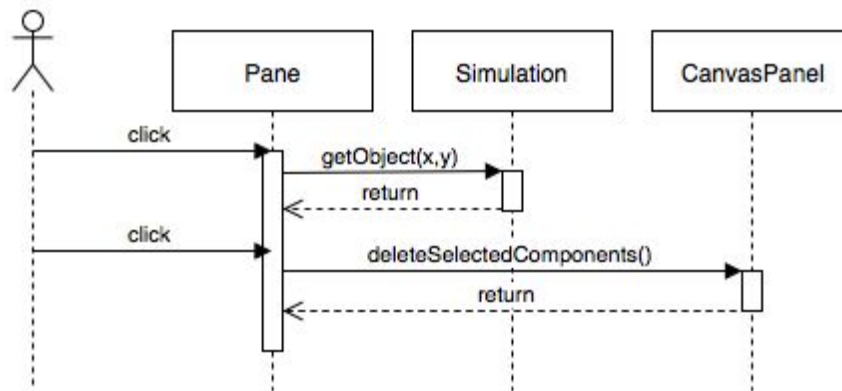
Adding a component (pump in this case) onto the simulation pane



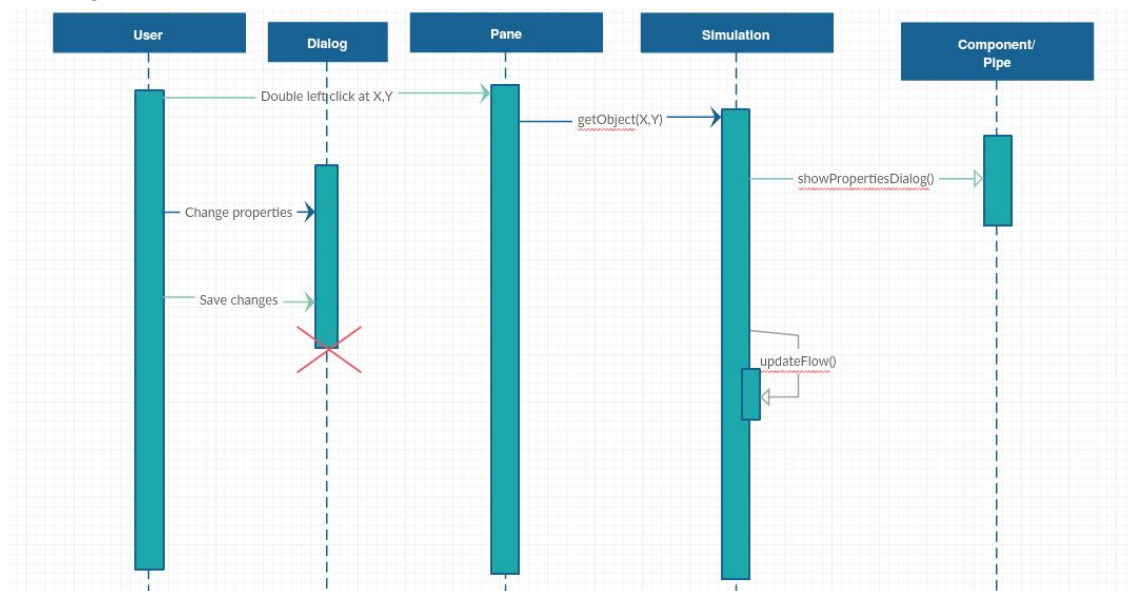
Adding a pipeline connecting two other components on the simulation pane



Deleting a component from the simulation pane



Editing a component/pipe 's properties



Changing position of a component

