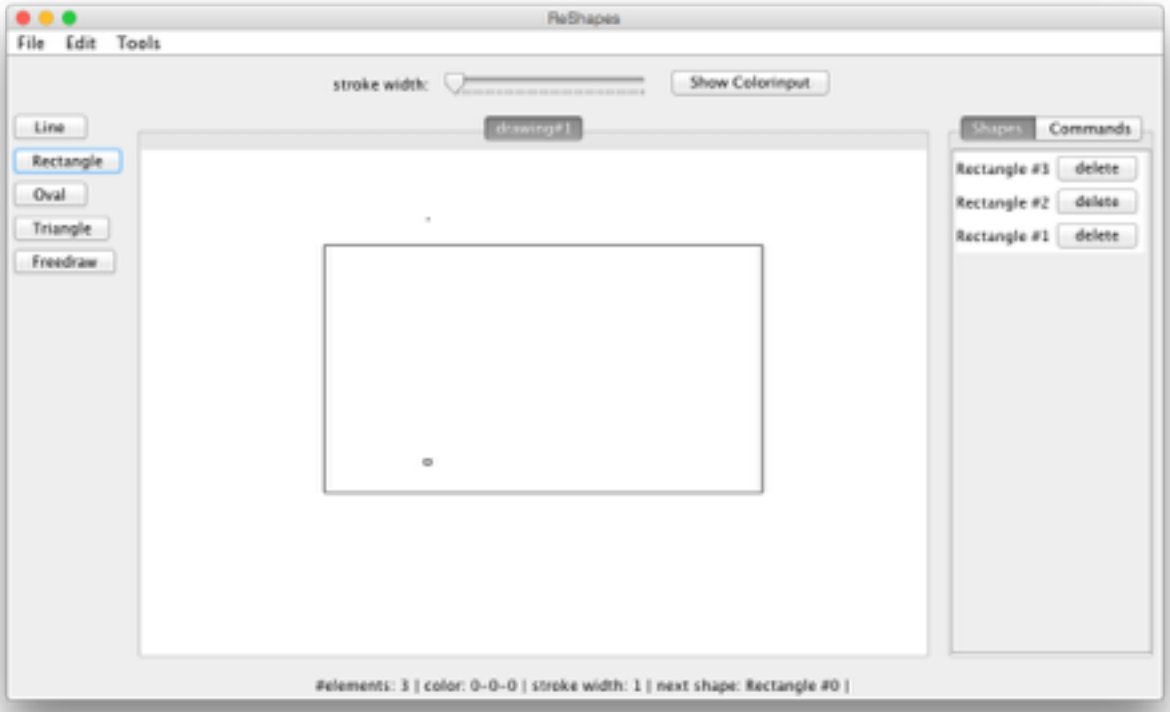
ReShapes Case Study



General Observations

- Plugin seems to slow down debugging process. Running the debugger without the tree view and statistics page is faster.

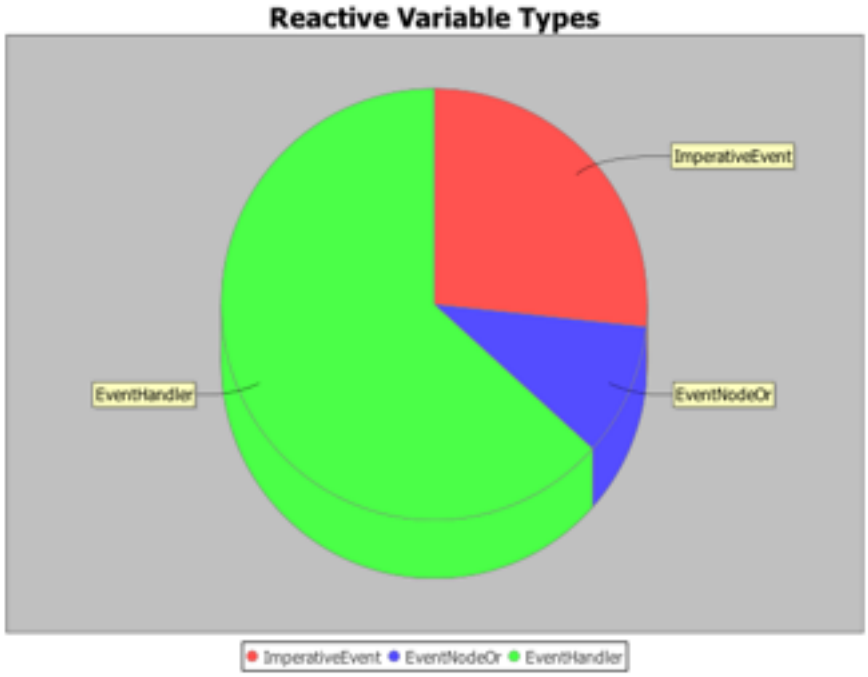
GENERAL IMPROVEMENTS

- The slow speed of the plugin might be caused by the fact that it uses a full-fledged database to store the reactive variables. Furthermore, the database handler is written in a way that requires multiple connection establishments. Either the database is replaced with an in-memory solution, or a no-SQL database is used to speed up the retrievel of information. (This has a high priority, since the performance of the plugin highly influences how it is used in debugging.)

Reactive Tree View

- The graph shows the relationship between different events.
- In event-based applications, the unnamed event handlers pollute the graph, since they give no information as to what their purpose is.
- The Highlight function works very well in this scenario, since many events are connected hierarchically.
- The relationship between events and actual GUI elements, e.g. buttons, lists, and panels, remains unclear. However, since the events are named expressively, the developer still can connect events and functionality.

Statistics Page



- Statistics update “live”, i.e. when the debugger jumps to the next breakpoint, the developer can see the changes in the distribution as they happen.
- Concerning event-based applications, the distribution of types nicely shows when events fire (as the number of handlers increases with it).
- Since events are not parameterized over typs, the statistics view is not overstuffed and clearly shows the distribution of different reactive variables. However, in other applications in which many parameterized signals or reactive variables are used, the statistics view sometimes does not allow a direct overview on the distribution of types.

IMPROVEMENTS

- The developer should be able to switch between regular type distribution (as it is now) or “combined” view, in which parameterized reactive variables are grouped, e.g. “Var[Integer]” and “Var[String]” are grouped to “Var”.
- The developer should be able to browse through the history, as it is the case in the reactive tree view.
- The distribution should contain numbers (as in “how many EventHandlers are there?”).