Visualization of Object Sets in Pharo

Presentation BA Thesis
Software Composition Group

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Motivation

Currently

- No overview is conveyed
- Relationships between objects are not shown clearly
Motivation

Goal

- Ease code inspection and debugging
- Inspection of multiple objects at the same time
Our approach

Visualize object sets and their relationships as a graph.
Our approach

Convey overview of multiple objects concurrently, while also conveying detailed information about individual objects.
Our approach

Enable subgraph persistency throughout renderings

Insert Color green and ValueLink Color green to graph
Our approach

Interactive visualisation
Our approach

Easy node customization

Without node customisation

With node customisation

```plaintext
a LinkedList(Color blue Color red Color green Color yellow)
firstLink: ValueLink(Color blue)
lastLink: ValueLink(Color yellow)
```

```plaintext
a LinkedList(Color blue Color red Color green Color yellow)
firstLink: ValueLink(Color blue)
lastLink: ValueLink(Color yellow)
Click to add/remove all elements of the linked list
Click to add/remove all value links of the linked list
```
Demonstration
Future Work

• Add custom nodes for core classes
• Improved layouts, class specific custom layouts
• Debugger integration
Conclusion

- Provide a tool in Pharo to visualise object sets in a graph
- Highlight relationships between objects
- Persisting subgraphs
- Direct interaction within graph
- Provide sample node customizations
- Tool makes object set inspection more efficient