GraFlight

A compiler debug graph viewer

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Libraries

Graphstreamer LGPL

JGraph BSD

JGraphT LGPL

JSON-java JSON License

Mockito MIT

Hamcrest BSD

JUnit EPL

Description

GraFlight™ is program that visualizes the output JSON files from a new type of compiler that performs constraint-based instruction selection on high level functions to low level ASM instructions using mapping of instruction patterns on a mathematical graph model.

Graph Key

Base

Arrows   - Program flow
Bold outlines   - Program control flow
Large squares   - Labels
Diamond   - Branch/control instructions
Rounded square   - Data
Small circles   - Copy operations
Large circles   - Other operations

Matches

Red outlines   - Node has no matches
Purple outlines   - Node only has 1 match

Usage

Execution

make

make run

or

java -jar App.jar [json function file]

Menubar

[File]
Open new file – Dialog to open a new JSON file
[ctrl] + [O]

Screenshot – Saves a timestamped PNG in the working directory
[ctrl] + [S]

Reset Positions– Resets the layout of the graph
[ctrl] + [R]

Refresh – Reloads the selected JSON file from disk
[ctrl] + [shift] + [R]

Close – Closes the window
[ctrl] + [Q]

[View]
Match Selection – Opens the toolbar window
[ctrl] + [T]

Statistics – Toggle the visibility of graph information
[ctrl] + [I]

Node Click – Toggle the ability to cycle through the matches of a node by clicking
[ctrl] + [N]

[Layout]
Hierarchical – A layout that optimizes visuals around edges

```
[ctrl] + [1]
```

Tree – A layout that optimizes visuals around nodes
```
[ctrl] + [2]
```

Force-based – The layout minimizes the edge lengths
```
[ctrl] + [3]
```

[Help]
User Manual – The GraFlight documentation (this manual)

Navigation

Zoom
    In – `[ctrl] + [+]` and [mouse scroll forward]
    Out – `[ctrl] + [-]` and [mouse scroll backward]

Move
    Up - [↑]
    Down - [↓]
    Right - [→]
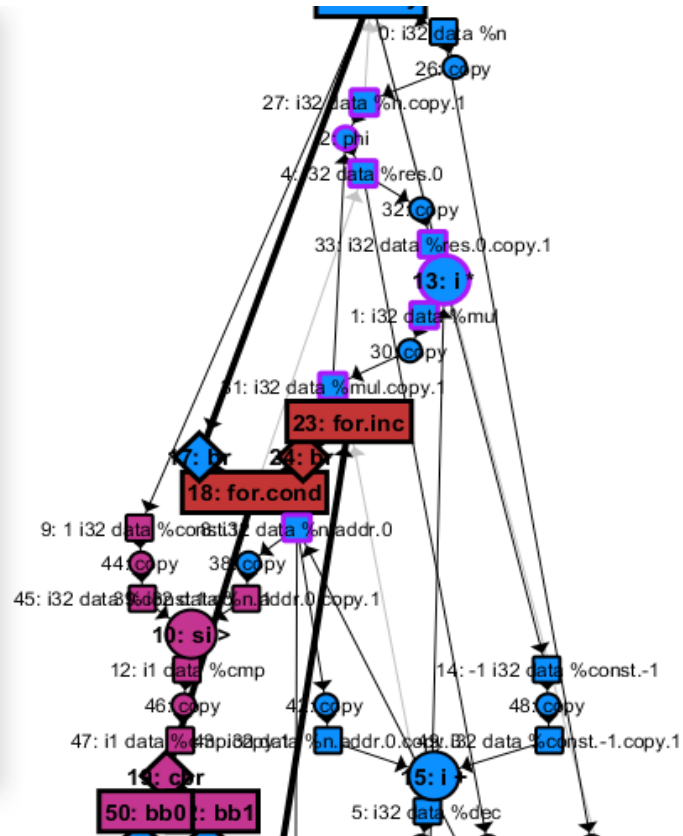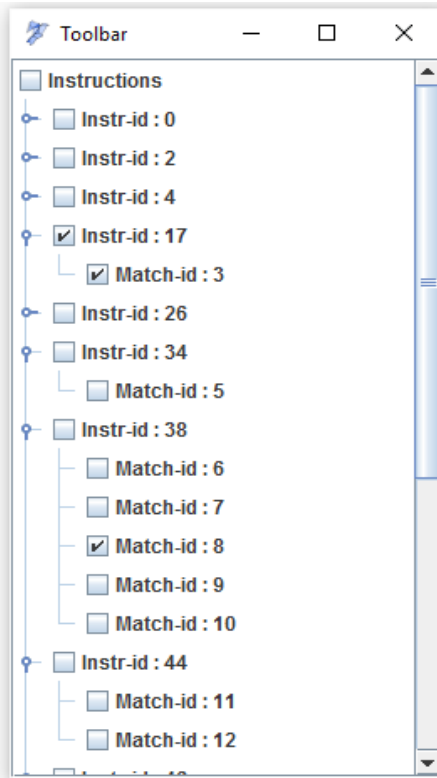   Left - [←]
    All directions - [mouse click] + drag

Editing

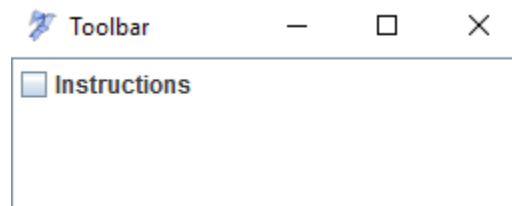Move node - Mouse: [mouse click] + drag
Undo move - Keys: `[ctrl] + [Z]`

Toolbar

To open the toolbar, you choose "Match Selection" under the "View" tab.

Then a window opens up where you can click on all or a couple of instructions and/or matches, and they will be highlighted in the graph according to their instruction-color.

A disclaimer about the toolbar is that if you double-click "Instructions" you will toggle the checkbox tree on and off:

Another disclaimer is if you press two matches who share a node, that node will be highlighted according to the last match you clicked.