Comparison and Evaluation of Visualization Methods used for Source Code Analysis

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Abstract
Several development and debugging support tools exist that enable software developers to quickly analyze code and report on the results. Abundant research is available on the textual output of these tools, though research on the GUI (the visualization) of these tools is absent. This research focuses on finding the best practices of the current visualization that is done in these tools, and may suggest points to improve.

Research plan
Getting a good overview of the current situation regarding the visualization aspects of these tools. The outcome of this research will be used as input for future development of such tools.

Assignment
- Gathering all possible visual clues (e.g. using printscreens) from the output these tools generate when (selected) source code is ‘debugged’.
- Setting up a usability experiment where these visual clues are tested on various aspects like 1) the usefulness of warnings/groupings 2) ability to pinpoint what is the problem/readability 3) attractiveness of layout.

Research questions
How can IDEs best suggest bug locations, and suggest possible fixes for these bugs?

Candidate
Bachelor student in Computer science or Information science. Some experience with the Eclipse IDE in combination with these tools is an advantage.

Location
Internal at UU, with several visits to GX Nijmegen.