



Parameter Mining

Master thesis for Andreas Bespaletz

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The goal of this thesis is develop a tool that helps at identifying the effects of parameter values on the execution of a computer program. The user can instruct the tool to automatically search through the space of possible parameter values to identify a combination that either causes the program to crash or provides the minimum or maximum value for the program's execution time. It is also possible to specify a custom result that can be retrieved from the program's output.

Specific sub-goals are:

- Making the tool highly extensible: Supporting regular expressions and JavaScript code snippets such that the tool can be easily customized.
- Providing a command line and a web interface front-end.
- Showing the applicability of the tool in the context of parameter mining for the Java HotSpot virtual machine (e.g., heap size or compilation policy parameters).
- Providing a convenient way to export the data generated from the various program runs into data analysis tools (e.g., Microsoft Excel).

Explicit non-goals are:

- The development of domain specific languages for the customization.
- Providing data analysis features that are available in common third party data analysis tools.

The work's progress should be discussed with the supervisor at least every 2 weeks. Please note the guidelines of the Institute for System Software when preparing the written thesis.

Supervisor: Dipl.-Ing. Thomas Würthinger