

RefactorErl research group



Topic

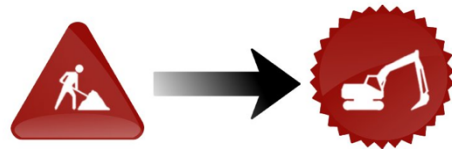
The importance of tools supporting software development has been growing rapidly in recent decades. The source codes are so large that it is almost impossible to fully comprehend them, but at least it is a difficult and time-consuming process. Thus, the tools that support code understanding, maintenance, debugging or even provide the opportunity to transform the source code according to various aspects are becoming more and more widespread. This support can be done dynamically, i.e., at runtime, or statically without running the program. In the former case, we can obtain information by monitoring the already running software, possibly by instrumenting the code and thereby helping the developers. In the latter case, it is not necessary to run the software, we only collect information based on the source code and use it for various purposes.

In our research, we deal with the static analysis of Erlang programs. Erlang is a highly concurrent programming language designed for analysing distributed software. Its importance is also shown by the fact that every year Cisco sells 2 million devices on the market that run Erlang codes. Therefore, 90% of Internet traffic passes through nodes controlled by Erlang.

Result

- Support for understanding source code
- Code transformations
- Checking code quality
- Detecting vulnerabilities
- Information extraction with query language support
- Discovery of relationships/dependencies of software components
- Analysis of concurrent/distributed software
- Automatic parallelization
- Software visualisation
- Support for green computing

Effective software maintenance



Why it is useful?

- Shorten learning terms of a newcomer
- Shorten bug report solution time
- Make the possibility of a better teamwork
- Support software delivery product line
- Increase code quality by reducing faults
- Shorten time-consuming daily jobs
- Helps to detect vulnerabilities and undesired software

in Erlang for Erlang



Knowledge sharing