LMS-Truffle: combining staging with self-optimizing AST interpretation

Abstract syntax tree (AST) interpretation is an integral part of a wide variety of different tasks in computing, for example, programming languages interpretation, SQL interpretation, etc. A lot of significant research has been conducted to improve performance and decrease overhead of AST interpretation in comparison to executing compiled code. One of the recent interesting developments in that area is Truffle framework/Graal VM introduced by Oracle Labs, which has an ambitious goal to is to improve the performance of Java virtual machine-based languages to match native languages performance. This project presents and attempt to combine Truffle Framework/Graal VM with another interesting optimization concept - program staging. As a particular example, Lightweight Modular Staging is used to stage program code. The main goal of this project is to proved that needed machinery for using Truffle Nodes being a target for some typical uses cases of Lightweight Modular Staging and evaluate the performance.