

Translation-based automatic exam evaluation for mass education

Boldizsár Németh, Máté Tejfel

Eötvös Loránd University, Dept. of Programming Languages and Compilers

{nboldi,matej}@elte.hu

Mass education is an efficient way to train large number of students, and is applied on many universities across the world. The teaching process consists of many stages from lectures to evaluation. Automatic evaluation of exam results for courses on programming languages can be difficult, because the evaluation has to assign scores for incomplete solutions.

This paper presents a method designed to let the educator to easily write robust tests for evaluating student assignments. The evaluation code is transformed by a source-to-source transformation to use reflection when accessing classes written by the student. This enables to gracefully handle student errors, provide meaningful messages and estimate the scores for imperfect solutions. The transformation is implemented as an Eclipse [?] plugin, and enables to automatically generate the automatic tester as the test code is modified. The plugin also generates a handout test, that can be used by students to test their solution on their own machines.

The plugin is used since 2014 for automatic evaluation of assignments on a beginner java course attended by approximately 250 students.

References

- [1] The Eclipse IDE, <http://www.eclipse.org/>