

Integration of a Student Project Into the Course 'Software Testing'

Abstract

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The course “Software Testing (PBL)” is newly introduced in the summer term 2017 as part of the young 6 ECTS master-level module “Software Testing”, which is offered in the second year. It serves as a replacement for both the exercise sessions and the final exam of the previous course iteration. As a student project, it is designed to enable the application of theoretical knowledge, which is obtained in the lecture section of the module. Students exercise on real-world projects, with the final goal of practical experience and a deeper understanding of the fundamental software testing concepts.

In groups of up to five members, the students self-reliantly pick an open-source software project of their interest, which is subject to the application of different testing concepts. The students are led through the area of software testing in five phases throughout the course, each covering one fundamental testing approach. Each phase follows the four steps of our TEPI structure: Firstly, the lecture provides the theoretical background (T) of each concept, which is repeated in the first task of each phase. Secondly, the knowledge is further deepened with a directed step-by-step example (E) in the second step. Thirdly, the students put the introduced concepts into practice (P) for their selected projects. And fourthly, remaining problems are addressed, and the state of knowledge is checked and graded during an interview (I) which follows each phase. Both the submitted solutions and the interviews make up the final grade of the course.

Based on the project results, our own assessment of the student effort and progress, and the student feedback for the course, we can conclude that the initial goal of providing practical experience and solid knowledge was met. Most students were motivated throughout all phases, and they would consider enrolling in courses with similar concepts in the future. Open questions such as the scalability of the TEPI concept - considering the annually growing number of potential attendants - need to be subject to further evaluation.