

QUALITY ASSESSMENT OF SOFTWARE TESTING USING INTELLIGENT INFORMATION SYSTEM

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For today few people doubt the advisability of testing the developed software products. The goal of any testing project is to ensure the quality of the product being developed. With the development of an IT project the number of product tests also grows, and one of the most important problems in the design and development of software is its verification and validation.

The testing process refers primarily to checking the correctness of the software implementation of the system, the compliance of the implementation with the requirements, i.e. testing is the controlled execution of a program in order to detect inconsistencies in its behavior and requirements.

The aim of the work presented in this report was to improve the efficiency of the testing process. To assess the test coverage in the "classic version" 2 main metrics are used - requirements coverage assessment and code coverage assessment. However, the assessment by these metrics is not always informative for the complex assessment of tests. In this paper, it was proposed to consider the test as a multi-feature object and to use the approach proposed by A. B. Petrovsky when evaluating it. in the "PAKS" method [1].

In the process of analyzing the requirements functional and non-functional requirements for the software were identified. The main use case for the system is to evaluate the quality indicator for test coverage, but the user has the ability to evaluate using classical metrics and also see the results of the assessment.

Taking into account the restrictions put forward the ASP.NET Core 2 platform was chosen as the development technology, which works on the basis of the .NET Framework 4.6.2 software platform. The PS architecture is a client-server architecture with a thin client, which has good scalability and maintenance costs. In the course of the work 9 different software tools used in the testing process were considered - such as Zephyr, TestCraft, Selenium, TestArchitect and others. Despite the fact that some of them belong to the test management tool, it is not possible to use them to obtain a comprehensive quality assessment.

The result of performing the work tasks is the created system of criteria for evaluating tests and test coverage, project documentation for software development and software solutions for assessing the quality of test coverage.

References:

1. Петровский А.Б., Ройзензон Г.В. Многокритериальный выбор с уменьшением размерности пространства признаков: многоэтапная технология ПАКС // Искусственный интеллект и принятие решений, 2012, №4.