ABSTRACT

Explanatory note size – 103 pages, contains 33 illustrations, 35 tables, 4 applications, 27 references.

Topicality. In the work the problem of ensuring the accessibility of web content is considered. By analysing existing solutions, the main advantages and disadvantages of existing automated accessibility testing solutions are defined. The necessity of developing software aimed at providing flexible accessibility testing throughout the web product development life cycle is revealed. The proposed solution provides validation of the defined accessibility rules by integrating into the existing test automation system.

The aim of the study. The main target is to improve the user experience of web products through accessibility testing. To achieve this goal, proposed software that provides functionality for automated accessibility validation by integrating into an existing test automation system.

The object of research: automated accessibility testing of web content.

The subject of research: approaches and methods used in software designed for automated accessibility testing.

To achieve this goal, the **following tasks** were formulated:

– analysis of existing solutions and approaches to interaction with content;

– analysis of functional and non-functional requirements and building models based on these requirements;

– developing methods of interaction with web content for accessibility testing;

– applying methods in the accessibility testing automation module;

– evaluation of the effectiveness of the developed solution.

The scientific novelty of the results of the master's dissertation is that an improved solution based on a hybrid approach for flexible and parameterised accessibility testing is proposed, which, unlike others, makes it possible to include web content accessibility checks in existing end-to-end tests. This approach and software

solution allow you to quickly start testing and detect and prevent the re-emergence of accessibility problems for end users of web applications. The result was achieved by developing an improved solution for automated accessibility testing.

The practical value of the obtained results is that accessibility testing becomes possible at the earliest stages and throughout the entire development lifecycle, by allowing the use of the accessibility testing module functionality in existing test automation systems. The implemented methods allows interacting not only with entire pages, but also with separate components, which helps to focus attention and provides flexibility in testing. This solution can be used in existing web product testing automation systems.

Relationship with working with scientific programs, plans, topics. Work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine «Kyiv Polytechnic Institute. Igor Sikorsky».

Approbation. The scientific provisions of the dissertation were tested at the Fifth International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies (SoftTech-2023)" dedicated to the 125th anniversary of Igor Sikorsky Kyiv Polytechnic Institute.

Publications. The scientific provisions of the dissertation were published in:

1) Syniepolskyi S.V., Module for automated testing of web application accessibility using the framework for end-to-end testing / S.V. Syniepolskyi, I.O. Zeniv // Proceedings of the Fifth International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies (SoftTech-2023)". - Kyiv: NTUU “KPI them. Igor Sikorsky”, December 19-21, 2023.

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