

PROBLEMS OF SOFTWARE TESTING ON ISO 25010 CRITERIA

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Electronic devices have occupied all the niches of modern life, ranging from ordinary communication via smartphones to electronic equipment in such important and complex fields of activity as medicine, astronautics, etc. Algorithms and software structures become more complex with each passing year, and a small error in the software code can cause great harm.

The complexity and importance of modern software makes the software testing an important step in the development of software systems of any type and scope. Firstly, it prevents and corrects system errors. Secondly, even testing small commercial products can detect errors that can save a large amount of money to the customer.

The ISO 25010 standard is used to evaluate the quality of the software. The quality of a system is the degree to which the system satisfies the stated and implied needs of its various stakeholders, and thus provides value. Each requirement is a description of the required or desired property of the software. The following quality criteria are distinguished [1]:

- Functional Suitability;
- Performance efficiency;
- Compatibility;
- Usability;
- Reliability;
- Security;
- Maintainability;
- Portability.

The quality model determines which quality characteristics will be taken into account when evaluating the properties of a software product. The software is divided into different categories (Web, desktop, embedded, etc.), each with its own characteristics, and the quality criteria may have the various weight coefficients for different categories. Software testing is generally the one of the software product quality control techniques.

For enhancing (and simplifying) the process of software testing quality evaluation with using testing data the Fuzzy logic approach is suggested. Fuzzy logic allows to choose the most important criteria for each software type. In the final count usage of Fuzzy logic allows to increase the efficiency of software testing evaluation.

References:

1. ISO/IEC 25010 / Access mode: <http://iso25000.com/index.php/en/iso-25000-standards/iso-25010>