THE PROBLEM STATEMENT OF THE STUDY OF THE FORMATION OF SOFTWARE DEVELOPMENT TEAMS

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Software development is associated with problems of quality, cost and reliability. One of the approaches to reducing the number of errors is the use of the diversification principle, which consists in the development and integration of several versions of the software product, or its parts. N-versioning, a special case of implementing the diversification approach, consists in ensuring the diversity of performers, languages and notations, and development tools.

The aim of the work is to improve and accelerate the software development process by using team diversification. The object of the study is the process of developing multi-version software. The subject of the work is methods for assessing diversification. This work considers the issue of forming software development teams in the context of N-version software development. This development model is sensitive to the composition and method of team formation due to the fact that it is the development teams that lay a certain level of diversification in the software project, and the diversification obtained in this way is called team diversification. It has been established that the level of team diversification is influenced by numerous factors of subject diversification, such as age, gender, education, understanding of project goals, etc. Guided by these and similar attributes, responsible persons distribute developers into teams, counting on the fact that diversity according to these factors will ensure software diversification.

During the work, various types of diversification were considered. Multi-version diversification was considered in more detail, the use of which significantly increases the failure resistance of the software being developed.

The hypothesis of the study is the assumption that there is a connection between a set of certain personal qualities of the developer (profile) and the method of software development. Thus, to test the research hypothesis, it is necessary to:

– select metrics for assessing the developer profile;

– select metrics for assessing the developer's software development method (diversification indicators);

– collect statistical data: developer profiles and code samples;

– assess the presence of a correlation between generalized assessments of the developer type and the development method.

If the research hypothesis is correct, the following method for forming development teams can be proposed:

– formation of development teams: recruitment of performers, assessment of the developer's profile;

– sorting developers by profile: the most similar profiles should be placed in one team).

– development of N-version software according to the usual life cycle model;

– assessment of the obtained level of software diversification and comparison with the previously predicted one.