СЕКЦІЯ 1. ІНФОРМАЦІЙНІ ТА УПРАВЛЯЮЧІ СИСТЕМИ

ASSESSMENT IT PROJECT SOFTWARE RELIABILITY BASED ON STATIC MODELS OF CORCORAN AND NELSON

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In the process of IT project management, a special place is occupied by its quality management since it largely determines the success of an IT project as a whole. Quality management is a complex and laborious process, which also includes a large number of different characteristics [1-3]. Reliability is one of the most important indicators of the quality of an IT project software; therefore, the use of mathematical models and information technologies for its assessment will allow quality management to be carried out more efficiently. This allows us to conclude that the topic under consideration is relevant.

In the course of the study, the analysis of the state of the IT project quality management problems and, in particular, of the IT project software reliability assessment was carried out. The existing software solutions to support the assessment processes were analyzed. As a result, a task of assessing the IT project software reliability based on Corcoran and Nelson statistic models was formulated.

Various groups of software quality management techniques were analysed. This included dynamic, static, people-intensive and analytical techniques. Their advantages and disadvantages were described. Next, the reliability indicators, models and methods of ensuring IT projects software reliability were analyzed. Software reliability models are divided into analytical and empirical, and if the former allows us to calculate quantitative indicators of reliability, the latter are based on an analysis of the structural features of the IT project software. In this work, Corcoran and Nelson statistic models were used to assess the software reliability since they take into account only the dependence of the number of errors on the number of test runs or the dependence of the number of errors on the characteristics of the input data.

To check the performance of the models, a test case was developed based on two IT projects. The obtained evaluation results are analyzed and recommendations are made on their use in quality management of an IT project.

The research materials can be used by project managers and company management when assessing the reliability of software for IT projects.

References:

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