

## ABSTRACT

Explanatory note size – 89 pages, contains 6 figures, 28 tables, 12 sources, 6 appendices.

**Topicality.** Today there are hundreds of software metrics, but only a small number of them are used in the creation and maintenance of software. Most of the metrics are not only unused, but also unknown to software engineers. Therefore, a prudent task is to create tools that inform the engineer about the availability of relevant metrics and make it possible to apply metrics. The master's thesis is devoted to solving this task by creating a catalog of metrics.

**The aim of the study.** The purpose of the study is to create a software system for an electronic catalog of software life cycle metrics, based on a self-developed catalog format for software life cycle metrics.

**Object of research:** The main components of the phases of the software development life cycle (processes, products, resources), their metrics.

**Subject of research:** Methods, models, means of software metrics application.

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

- review of scientific articles related to the research topic;
- search and analysis of existing approaches to cataloging life cycle metrics;
- development of the metric catalog format;
- selection and development of the catalog software application architecture;
- creation of a software product;
- evaluation of the effectiveness of the developed product.

**Scientific novelty.** The existing format for presenting software metrics for building an information-search system (catalog) has been improved by expanding it with software metrics, which has led to an increase in the number of search criteria.

**Practical value.** The catalog of meters is aimed at ensuring the effective creation and maintenance of software by:

– application in the software development life cycle to create products that not only meet the requirements, but also have transparent evidence of this.

– use in training software engineers to increase their level of awareness.

**Relationship with working with scientific programs, plans, topics.** Work was performed at the Department of Informatics and Software Engineering National Technical University of Ukraine "Kyiv Ihor Sikorskyi Polytechnic Institute".

**Approbation.** The scientific provisions of the dissertation were approved at the 5th International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2023) - Kyiv.

**Publications.** The presentation of the scientific results of the master's thesis was implemented through their public presentation within the framework of international scientific and practical conferences, namely:

1) Laska I.O. Towards a generalized catalog format for software quality metrics. / Laska I.O. // Software engineering and advanced information technologies (SoftTech-2023): materials of the 5th International Science and Practice conference of young scientists and students, December 19-21, 2023 (Kyiv, Ukraine).

2) Laska I.O. Improvement of planned activities of IT enterprises based on software life cycle metrics. / Laska I.O. // Development of entrepreneurship as a factor in the growth of the national economy: materials of the 22nd International Science and Practice conference, November 22, 2023 (Kyiv, Ukraine).

**Keywords:** SOFTWARE DEVELOPMENT LIFE CYCLE, SOFTWARE METRICS, METRIC CATALOG, METRIC CATALOG FORMAT.