

ABSTRACT

Explanatory note size – 131 pages, contains 28 illustrations, 22 tables, 2 applications, 34 references.

Topicality. Minimizing the costs of maintaining WEB servers is still relevant. To achieve this, there is currently an active transition to cloud services. The developed framework offers a reduction in maintenance costs due to expanding the range of possibilities for using cheap spot virtual machines.

Along the way, additional architectural constraints and improvements have been introduced into the framework. They are designed to further reduce startup time by simplifying the infrastructure and reducing support costs by forcing the developer to follow best practices.

The aim of the study. Reduce the cost of maintaining Java WEB servers.

The object of research: Java WEB frameworks

The subject of research: Methods to reduce web framework startup time and improve architecture to reduce support costs.

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

- analysis of ways to reduce maintenance costs.
- to develop a method of building a WEB framework with a minimum start-up time.
- develop a framework according to the method.
- reduce the consequences of compromise decisions.
- compare the degree of decrease in start-up time with the market leaders.

The scientific novelty of the results of the master's dissertation is that a method of developing WEB frameworks is proposed to reduce maintenance costs by reducing startup time and minimizing errors in user code. An architectural solution is proposed to prevent users from making mistakes when developing WEB applications based on the REST architecture. An architectural solution is proposed to support working with WEB forms in the REST architectural style.

The practical value of the obtained results is that the implemented framework allows expanding the scope of application of spot virtual machines. Which is much cheaper than virtual machines offered under other tariffs with the same configuration.

Eliminating with the help of the developed solution the possibility of making some typical mistakes will allow more efficient use of low-skilled developers.

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 approved at the 5th international scientific and practical conference of young scientists and students "SOFTWARE ENGINEERING AND ADVANCED INFORMATION TECHNOLOGIES" (SoftTech-2023).

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

- Vendelovskyi I.S., Khalus O.A. Framework for reducing maintenance costs of java WEB servers // Materials of the 5th international scientific and practical conference of young scientists and students "SOFTWARE ENGINEERING AND ADVANCED INFORMATION TECHNOLOGIES" (SoftTech-2023).

Keywords: JAVA WEB SERVER, INVERSION OF CONTROL CONTAINER, SPOT VIRTUAL MACHINES, REDUCING THE COST OF SUPPORT.