

ABSTRACT

Explanatory note size – 88 pages, contains 29 illustrations, 25 tables, 4 applications.

Topicality. Today, almost every person has a smartphone. Because of this, it is profitable for businesses to develop mobile applications for the distribution of their goods and services to reach a wider audience. At the same time, development has become more expensive.

However, sometimes a business needs several similar products. Developing a new application from scratch and simultaneously supporting the entire set of applications is not an efficient solution. Not only because it will require a lot of money and time, but also because the risk of errors increases. There may be a situation in which the new functionality was implemented only in one of the applications of the whole set due to the occurrence of human errors.

That is why there is a need for approaches to solve the problem of building the same type of applications on the same code base with the ability to introduce unique differences to each of the final products. Using this approach will allow you to make changes to the entire set of applications faster, and use human resources and funds more efficiently.

Therefore, the study of methods of developing multiple applications on the same code base is quite relevant.

The aim of the study. Simplifying the development of travel applications and their future support.

Object of research: software for development and service of iOS applications.

Subject of research: methods of iOS apps development and service with the Swift language.

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

- analysis of existing approaches for the development of similar iOS applications on the same code base;
- eliminating the shortcomings of these approaches or developing one's own;

- designing an architecture that would allow easy maintenance and scaling of projects with several final products;
- formation of requirements for applications;
- create the environment for iOS travel apps development and service;
- evaluation of the effectiveness of the proposed solutions.

The scientific novelty of the dissertation research consists in the following results:

- the approach of using Xcode-goals has been improved by using a utility for generating a project file based on given project configurations and a utility for updating project configurations, which provides an opportunity to automate the creation and configuration of the same type of mobile applications with specific logic and, unlike the existing approach, reduces development time and supporting the mobile application by reducing the routine actions of the developer and reducing the number of errors;
- the first developed architectural solution for the automatic generation of the project file and updating of project configurations, which ensures the minimization of code duplication and the resolution of potential conflicts related to the implementation of specific logic for each newly created mobile application.

The practical value of the obtained results is that a new method of environment organization has been implemented, in which several applications are created on the same codebase. This method automates routine developer activities, allowing businesses to spend time and money more efficiently. The proposed architectural solutions can be useful in the development of other projects with the task of optimal code reuse. The developed environment can be used to create iOS travel applications.

Relationship with working with scientific programs, plans, topics. The topic of the dissertation corresponds to the scientific direction "Technologies and tools for the development of software products and systems" from the List of priority thematic directions of scientific research and scientific and technical developments for the period until 2022, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 782 of 12.07.2022.

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