DEVELOPMENT OF THE FRAMEWORK FOR THE ELECTRONIC MULTIMEDIA PUBLICATION

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During the development of an electronic multimedia publication on the Android platform, the issue of simplifying the creation of a software product, as well as facilitating the process of its porting to other platforms, arises. To simplify the creation of software applications, libraries (java library) and frameworks (java framework) are widely used.

The Java framework – is a software platform that defines the architecture of building an application and facilitates the development and integration of various components of a large software project. The use of the framework in application creating is a skeleton approach to the program architecture, where any program configuration consists of two parts: a permanent part (the application skeleton) that does not vary from configuration to configuration, and a variable part – is the plug-in modules that determine the business logic and application interface [1].

The framework defines the basic rules for building an application architecture, setting the default behavior at the initial design stage. Also, the framework introduces new concepts allowing to abstract from the programming features at a lower level, which should accelerate the development process. Frameworks and libraries can interact with each other, which allows to combine together different classes and design patterns.

This paper is devoted to the creation of a framework for creating electronic multimedia publications. A multimedia edition created with the help of this framework can be ported to several platforms without the need to change the program code. The framework is based on the MVC (Model-View-Controller) architectural template. This template allows to divide the architecture into separate layers, responsible for a particular functionality. This approach makes the application code more human-friendly and simplifies code support.

The model in the MVC – is the application layer responsible for storing and processing information. This layer shouldn't make any assumptions regarding the presentation of information or user interaction with the application. Potentially this makes the model classes suitable for reuse, including on platforms other than the one on which they were designed.

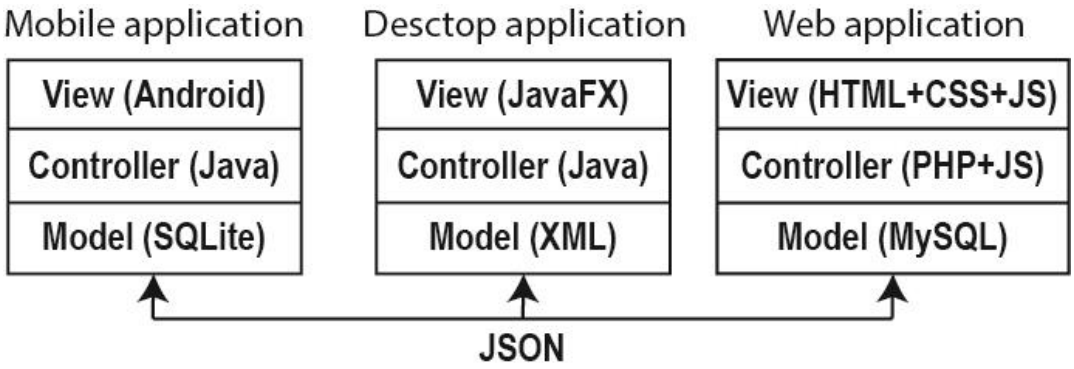
The view in the MVC – is a display level. It is responsible for displaying the model data. Classes belonging to this level, generally, are platform widgets or inherited from them. A view can access the model to retrieve data, but the model doesn't have to be directly dependent on the species.

The controller in the MVC – is the level responsible for the business logic of the application and for its interaction with the user and other software products. This level includes the user event handlers and the code that connects all the components

of the system into a single whole. Depending on the specific MVC implementation, the levels of view and controller can be separate classes or combined [2].

The framework has a static class that includes methods for generating a special XML-file to describe the structure of the interface and application functionality. Also, this class contains methods for processing the XML-file, and generating program code for the target platform based on the data received during processing. This approach allows to create a common file, on the basis of which code is generated in different programming languages and for different platforms.

Applications developed with this framework have the ability to interact with each other by protocol HTTP, by transferring files to each other in JSON format regardless of the platform on which they operate. The interaction scheme is shown in picture 1.



Picture 1 – Scheme of application interaction between each other

The framework significantly increases the speed of developing electronic multimedia publications for several platforms simultaneously.

References

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