

MOBILE APPLICATION FOR LEARNING THE BASIS OF SAFETY**ROMAN KARTSEVICH, OKSANA GOLUBEVA**

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This article describes the problem of lack of knowledge of safety precautions among young people and the solution to this problem using a mobile application.

Description of the subject area

The role of a mobile phone in the life of modern man is quite difficult to overestimate. Thanks to this compact device, you can contact your friends, relatives, colleagues at any time to get the information you need. In addition to contacts, many people store memorable dates, ideas, thoughts and other various files on their mobile devices.

The mobile device today acts as a flash drive and a notebook. A variety of useful special programs, options, functions, which modern models of mobile phones are equipped with, make this small device multifunctional and practical.

Thanks to such a large number of advantages, mobile phones have become very popular with young people, especially thanks to the mobile applications of the game format. Teenagers can spend a lot of time following such applications in various places, such as:

- house;
- school;
- public transport;
- cafe;
- different waiting areas;

Taking into consideration this trend, it makes sense to develop a mobile application that would help address a number of issues of relevance among children related to safety and health hazards.

So one of the fundamental concepts of child safety is the danger. Its signs are: a threat to life or the possibility of damage to health. Children can encounter dangers in various places: at home, in the city, in the nature, when communicating with strangers.

Children's safety mainly depends on the training. One of the standard methods is regular explanatory work, which allows conveying information effectively to children. And the best way to carry it out is to make use of games. In our time, children are especially attracted to mobile gaming applications. A study by the Institute of Modern Media (MOMRI) found out that many professional psychologists consider mobile interactive games and applications useful for the child to acquire new competencies. A good result can be achieved by the right selection of content, playing time, the necessary and sufficient participation of an adult.

To create a mobile game, the training basics of safety engineering can identify the following requirements:

- several levels of complexity with modeling situations that contain hazards of different kinds;
- theoretical tips for implementing an option for an optimally safe exit;
- consequences when performing actions that deviate from safety procedures;
- keeping statistics of the passage of the game.

Implementation and design of the application

On the basis of the above characteristics, the functional structure of the mobile application for training the basics of emergency behavior was developed, which consists of the following subsystems:

- subsystem for working with menus, which is responsible for monitoring user actions in the application menu and processing relevant requests for its operation;
- game level selection subsystem, responsible for selecting the appropriate level of the game according to the user's request;
- subsystem for evaluating the passing of the level by the user. Responsible for assessing the levels at the end of their passage, depending on the selected actions of the player at the time of passing the level;
- a subsystem of choice of theoretical information. Responsible for providing the necessary theoretical information to the user in one of the menu sections;

– a subsystem responsible for verifying the correct behavior of the user. It is responsible for preventing errors from the user's side in order to ensure the correct operation of the application.

The functional structure of the program is shown in fig. 1.

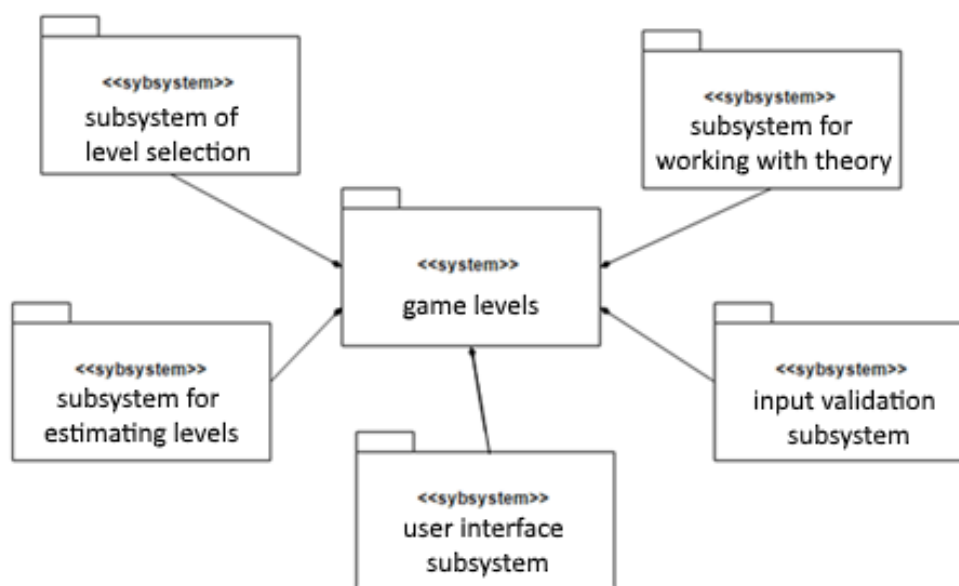


Fig. 1. Functional structure of the application

To develop the application, it was decided to use the cross-platform framework LibGDX, based on the Java programming language with some components written in C and C ++ to improve the performance of certain code. Currently supports Windows, Linux, Mac OS X, Android, iOS and HTML5 as target platforms.

LibGDX allows you to deploy the application on multiple platforms without modification. You can use all the tools of the Java programming language to increase productivity as much as possible.

LibGDX allows you to go to a lower level, giving direct access to the file system, input devices, audio devices and OpenGL through a single OpenGL ES 2.0 and 3.0 interface.

During the design of the architecture, the main classes of the application were identified, which describe the following objects:

- main menu of the game
- game levels
- level selection menu
- menu with theoretical information

For example, we describe the implementation of the main menu of the game: when developing the main menu of the mobile application, the MainMenuScreen class was created. This class is responsible for the screen containing the start menu items that are provided to the user immediately after the application is launched. To create menu items, the ButtonTexture class contained in the libGDX framework inherited from the Actor class was used. After creating objects like ButtonTexture, you need to use them on the stage as actors, as a result of which you can observe their presence on the screen. Finally, we need to create an event handler that will track the user's actions on the main menu screen and handle events.

As a result, this mobile gaming application provides an opportunity to apply the acquired knowledge of safety techniques for the successful passage of dangerous situations.

The game format of the application allows children in an easy and accessible form to acquire the information received during the game, which can be useful to them in real life.

As a result, we get a very convenient and practical solution to the problem associated with safety technology among adolescents in the modern world.

REFERENCES

1. Грекул, В.И. Проектирование информационных систем / В.И. Грекул, Г.Н. Денищенко, Н.Л. Коровкина. — М. : Интернет-университет информационных технологий – ИНТУИТ.ру. – 2005.

ITC, Electronics, Programming

2. Тьюторитал по библиотеке. – Режим доступа: <https://habrahabr.ru/post/143405/>.
3. Хабибуллин, И.Ш. Самоучитель XML / И.Ш. Хабибуллин. – Спб. : БХВ-Петербург, 2003.
4. Официальный сайт ОС Андроид [англ.] [Электронный ресурс] / Android – Режим доступа: <https://www.android.com/>.
5. Google Play – Магазин приложений для платформы Android [Электронный ресурс]. – Режим доступа: https://play.google.com/store_
6. Википедия — свободная энциклопедия – статья «Игра» [Электронный ресурс]. – Режим доступа: <https://ru.wikipedia.org/wiki/Игра>.