UDC 004.514

MATERIAL DESIGN CONCEPT

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The article examines the innovations of design of Android apps. The guidelines have been recently released by Google, and they should be followed by the developers of the applications for this platform.

The Android platform had no rigid guidelines how the applications should look like and work. From the beginning Google has made it clear that they have no plans to start dictating what is acceptable and what is not. There was a set of UI recommendations mainly focused on the minor things like icons, widgets and menus [3].

With the launch of the platform there were hundreds of different ideas of interfaces, and the appearance of the applications were very diverse. Now, when the platform has reached maturity and the number of applications has increased dramatically, the Android user interface is being formed. Some interface functions have become common, and some of them have even found its way into the libraries of Android SDK.

The release of Android Lollipop (5.0) has brought the largest variety of custom enhancements to the platform than ever. These changes naturally affect how Android apps will look like in the future. Some improvements can be ported back to earlier versions, but not all of them.

The main change that came with the new version of the system Material design is a new UI component that is based on simplicity, brightness, clarity and functionality.

Material design is software and application design in Android operating system by Google. It was first presented at Google I/O conference on 25 June 2014. The idea is to design applications that open and fold like a card, using the effects of shadows. Apps should not have sharp corners, the card needs to be switched smoothly and almost imperceptibly [1].

Material design is used in operating systems such as Android 5.0, Android 5.1, Android M and in some applications of the Android 4.1, 4.2, 4.3 and 4.4.

The mobile applications Gmail, YouTube, Google+, Hangouts, Google Play, Telegram, Wikipedia, Ask.fm. can be given as examples of applications in the new design.

Material Design is based on four main principles:

1. Tactile surface.

In Material Design interface consists of the tangible layers of the so-called "digital paper". These layers are located at different heights and cast shadows on each other, which helps users to better understand the anatomy of the interface and the principle of interaction with it.

2. Print design.

If you consider the layers as pieces of "digital paper", in regard to "digital ink" (all that is portrayed on "digital paper"), the approach of traditional graphic design is used: for example, magazine and poster.

3. Meaningful animation.

In the real world, objects do not arise from nowhere and disappear into nowhere — it happens only in the movies. Therefore, Material Design always thinks about how to give users some hints about the interface operation with the help of animation layers, and in "digital ink".

4. Adaptive design.

Let us see how to apply the previous three concepts on different devices with different resolutions and screen sizes [2].

As for the first principle there are a number of guidelines: the depth should make sense; you should take care of logistics; taking into account the fact that the button should only be used for key steps in the application; if any object has many forms and it contains a lot of different content, the card fits, and if not, then it is better to use plain text or text list. The dialog boxes are only need to ask a question to the user; it makes sense to use disclosed lists.

The conclusion can be made that in print design color has become something additional, it plays a more prominent role; the content on the page should be placed freely, the baseline grid at 8dp and left inset in 72dp is almost a rule; the photographs and illustrations should be used as means of expressiveness.

In Material Design meaningful animation is used to show what just happened. You should not leave the animation at the end — it can be a key factor in user experience, and it should be considered beforehand. Too much animation is bad as well; the animation should always be meaningful.

Google often uses the slide-out navigation in their apps; it can be seen in various examples. But Google has a lot of problems that can be solved with its help. If the application has a similar problem (post help, settings, login/logout, user information, etc.), it makes sense to use the sliding navigation, but if you create a simple tool, it is not needed. You should remember that it is possible to change the size of the toolbar dynamically, to make it double and triple in size. Floating button can be anywhere: at the top, at the bottom, on the right, on the left. The button can be moved from place to place depending on the task. And, be aware that the app must function in the same way and be displayed on the entire line of Android-devices in horizontal and vertical orientations.

Fig. 1. Tactile surface and Print design

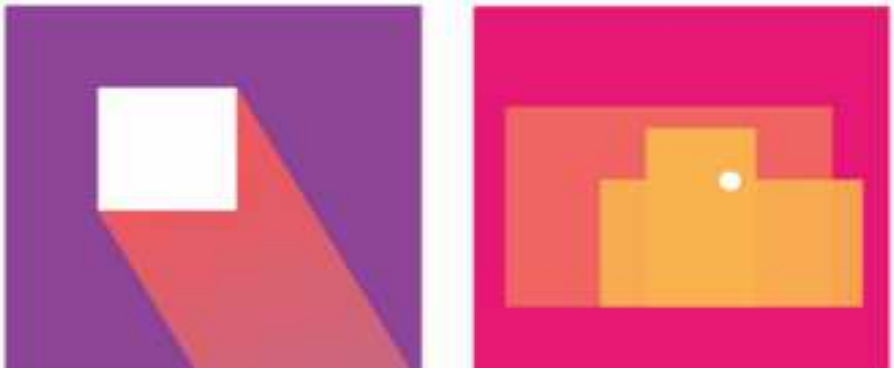

Fig. 2. Meaningful animation and adaptive design

A material metaphor is the unifying theory of a rationalized space and a system of motion. The material is grounded in tactile reality, inspired by the study of paper and ink, yet technologically advanced and open to imagination.

The fundamentals of light, surface, and movement are key to conveying how objects move, interact, and exist in space and in relation to each other. Realistic lighting shows seams, divides space, and indicates moving parts.

The release of material design has caused a "quiet revolution". Design is not just "painting" but it is also acquiring its own logic and laws of behavior. Developers and designers did not follow the recommendations on the appearance of the applications earlier. But now the changes affect the look and usability of applications (and therefore popularity).

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