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## MODERN PROGRAMMING LANGUAGES AND OPTIONS FOR USING THE ANDROID EMULATOR IN THE CREATION OF MOBILE APPLICATIONS

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**Annotation.** This article provides information on ways of visualizing instructional materials in higher education and using the visual capabilities of modern programming languages in the creation of e-learning manuals. As a modern programming language, the possibilities, advantages and disadvantages of the Java language and the visual environment of Android Studio software are mentioned.

**Keywords:** visualization, Android, Java applications, Java Development Kit (JDK), Java Runtime Environment JRE, IntelliJ IDEA (IDE), Android Studio.

**Introduction.** At a certain stage of the development of Science and technology, the emergence of new teaching aids, the role of visualization in the educational process naturally changed and began to be filled. Accuracy is understood not only by images of objects, but also by models of processes or phenomena, schematic structures that facilitate the understanding of complex information, dynamic visual weapons with the use of technical tools, and then multimedia training tools.

**Reference analysis (Literature Review).** In order to effectively improve the theoretical and practical knowledge and skills of students in higher education institutions, it is required to increase the number and quality of electronic learning aids. Taking into account the above, we will dwell mainly on what should be paid attention to in order to create electronic textbooks that are compatible with Android OS.

**Research Methodology.** Programs for creating Android applications, Java suite. The first aspect you need to know to develop Java applications is the Java Development Kit (JDK), which is developed by Oracle (Android application framework).

You may have downloaded and installed the Java Runtime Environment (JRE) in some form, which is necessary to run applications on your computer. You need to disable the version of JRE installed on your computer in case of conflict with the version of JDK. This is the latest version and the best version that contains is compatible with JDK, which eliminates the need to reinstall it.

To use the program, run the installation program, make sure that the "installation tools", "resource code" and "mass JRE" installations are available in the manual installation window. Click "Next", read the terms of the License Agreement and continue the installation.

**Analysis and results.** If you are using Windows OS on your personal computer, go to System Settings from the control panel and select Advanced System Settings. Here, select "Environment Variables" and find the "Path" variable. As shown in the example, before installing the Javan, add the "bin" directory to the file. Use the "java-version" and "javac-version" commands to verify that the process is successfully completed.

IDE is an environment built on the basis of IntelliJ IDEA, providing programmers with the opportunity to create as many useful visual programming tools as they need. Android Studio is the official IDE that Google developed to build Android apps.

When creating an app for the Android platform Android Studio should be aware of the Java programming language (or Kotlin), the Android APIs, and the Android application architecture. For many years, Eclipse IDE has been used for Android programming. But today, Android Studio has taken the lead with its capabilities. We get acquainted with the Android development platform and learn how to move, install, and create the first application. Google has developed Android Studio for Windows, Mac OS X and of course Linux platforms. You can download Android Studio from its official page, there it will also be possible to find the SDK that you will need for Android Studio. To install this program, we perform the following sequence of actions:

Set up Android Studio, in the next step, we move to the next window by clicking the Next button, that is, to the Android Virtual Device panel (AVD). To install Android AVD, select Default Settings, again click Next and go to the Configuration Settings section. Here we mark where to install Android Studio. The memory you choose should have at least 500 megabytes of space. We click Next, and we go to The Choose Start Menu Folder panel. Here, too, we press the Install button without touching anything. Installation process starts. After the installation process is finished, the Next button will open again. After that, the process is completed and The Finish button is opened. With the click of the Finish button, Android Studio automatic will be launched, and the first one will ask you to open the project belonging to android Studio, that is, open the project or not.

Here, if you have a project, we will choose the first radio button, or we will continue the process by selecting the second one. Android Studio Splash Screen, Finding Available SDK Components that is, the process of loading begins by finding the desired SDK. Android Studio will start the SDK migration as desired. After that, the Android Studio Setup Wizard dialog will come out. We will install the settings by clicking Next:

We choose the type of installation. After that, we click Next again and after selecting the theme(theme) that you like in the next step, we go to the next window by clicking Next, the last part we have also reached the process of loading all the necessary files. We press the Finish button, the process of loading the necessary files involves a little period of time. When the process is finished, we go to the Welcome Android Studio window by clicking on the Finish button.

With this, the process of installing Android Studio on us will be completed and we will start our first project on Android through the Start a new Android Studio project button. Your first Android Studio Mobile App. One of the best ways to get acquainted with Android Studio is of course to create an app that is Hello World. After clicking the Start a new Android Studio button, it brings us to this window. Company domain you can put the words you want. It is written mainly because of the project you are working on. open the optional folder and click Next to save your Android projects there and show it in Project Location and click Next.

Android Studio gives you the opportunity to choose the ones you want for your project, namely target devices. This happens even if we leave it unchanged and Press The Next button. Now that we've come to setting up activity as well, choose the type of activity you'll need for yourself and proceed. After that, if you install Android Studio for the first time by clicking the Next button, Android Studio will download a couple of files that belong to the constraint layout, which you will need to create the user interface and click Finish.

Here is the Android Studio also launched. Now if you do this Run(run) you will have a Hello World Application appear. With Android Studio User Interface you can go out of the details and explore its possibilities. For this, of course, we also require the ability to work with the Java programming language.

Conclusion. In summary, these methods used by Online designers to create android applications are not actually related to software development. In most cases, all these programs have their own characteristics, which do not require the right to be called a " real program". Nevertheless, with the right approach, many of them can be used.

**REFERENCES:**

1. Голощапов А.Л. Google Android. Программирование для мобильных устройств (Профессиональное программирование). Санк-Петербург: «БХВ - Петербург», 2011. – 438 с.
2. Java в примерах справочник учебные пособие к книге “Java. справочник” Девед Фленаган, Санк-Петербург-Москва 2003 г.
3. Java: The Complete Reference, Seventh Edition, Herbert Schildt, New York Chicago San Francisco, 2007 y
4. Di Marzio J.F. Android A Programmer’s Guide – 2008. [McGraw-Hill Education - Europe](#), New York, NY, United States
5. Chris Haseman Android Essentials – 2008. Apress United States by Springer-Verlag New York, Inc., 233, ISBN: 9781430210641.
6. Gayratovich, E.N. (2019). USING VISUAL PROGRAM TECHNOLOGY METHODS IN ENGINEERING EDUCATION. European Journal of Research and Reflection in Educational Sciences Vol, 7(10).
7. Gayratovich, E.N. (2021). SPECIFIC ASPECTS OF EDUCATIONAL MATERIAL DEMONSTRATION ON THE BASIS OF VISUAL TECHNOLOGIES. International Engineering Journal For Research & Development, 6(ICDSIIL), 3-3.
8. G‘ayratovich, E.N. (2022). It Is A Modern Educational Model Based On The Integration Of Knowledge. Eurasian Scientific Herald, 5, 52-55.
9. Ergashev, N., Meyliqulova, M., Xamitova, R. N., & Namozov, D. (2021). ANALYSIS OF COPYRIGHT SOFTWARE CREATING VISUAL ELECTRONIC LEARNING MATERIALS. Интернаука, (18-4), 24-25.
10. Xolmurodov, A.E., & Ergashev, N.G‘. (2021). SPECIAL ASPECTS OF DEMONSTRATION OF EDUCATIONAL MATERIAL BASED ON VISUAL TECHNOLOGIES. Современное образование (Узбекистан), (7), 29-34.
11. G‘ayratovich, E. N. (2022). The Theory of the Use of Cloud Technologies in the Implementation of Hierarchical Preparation of Engineers. Eurasian Research Bulletin, 7, 18-21.