# TOSHKENT TEMIR YO'L MUHANDISLARI INSTITUTI

**Temir yo'l transportida axborot tizimlari kafedrasi**

**Creating the Programme Provider of English-Russian-Uzbek Dictionary Which Includes the Terms of Railway Road Transport**

mavzusidagi

# BITIRUV  MALAKAVIY  ISHI

**Muallif          Sayitov S.X.**

**Toshkent – 2018 y.**

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Himoya qilishga
ruhsat berilsin

Kafedra mudiri

« 25 » 06 2018 й.

Kafedra_____ Temir yo'l transportida axborot tizimlari

"CREATING THE PROGRAMME PROVIDER OF ENGLISH-RUSSIAN-UZBEK DICTIONARY WHICH INCLUDES THE TERMS OF RAILWAY ROAD TRANSPORT" ____ mavzusida

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Toshkent – 2018 y.

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1. Bitiruv ishining mavzusi " Creating the programme provider of english-russian-uzbek dictionary which includes the terms of railway road transport"

«1» dekabr 2017 yil 4-sonli kafedra majlisida ma'qullangan va institutning 25 dekabr 2017 yilgi 726-U buyru''i bilan tasdiqlangan.

2. Bitiruv ishini topshirish muddati **6.06.2018**

3. Bitiruv ishini bajarishga doir boshlang'ich ma'lumotlar References in the theme, Android software

4. Hisoblash-tushuntirish yozuvlarining tarkibi (ishlab chiqiladigan masalalar ro'yxati) To collect references to select materials in the theme, to link the themes, to use the opportunities of Android software, to create a dictionary on Railway terms

5. Chizma ishlar ro'yxati (chizmalar nomi aniq ko'rsatiladi)

Poster1 – The head page of the programm

Poster2 – Searching progress

Poster3 – Progress result

**Introduction**

The human need to always keep abreast of events creates a great help for creating all new mobile devices and gadgets. In view of the inconvenience of using stationary computers and laptops, mobile phones and tablets are increasingly coming to the fore, which are also under the control of the operating system.

With a view to radically revising the content of training in accordance with the priority tasks of the country's socio-economic development, creating the necessary conditions for training specialists with higher education at the level of international standards, Presidential Decree No. PP-2909 of April 20, 2017 "On Measures to Further development of the system of higher education ".

This decree approved the Program for the Comprehensive Development of the Higher Education System for the period 2017-2021 on the qualitative and cardinal improvement of the level of higher education, the strengthening and modernization of the material and technical base of higher educational institutions, the provision of modern educational and scientific laboratories, information and communication technologies.

Based on the needs of the real sector of the economy, admission to training in engineering, production and construction fields and specialties has been increased from 23 percent to 33.2 percent of the total. The updated state educational standards and training programs for training specialists in higher education, as well as retraining and advanced training of teaching staff, have been introduced.

At the same time, the results of the study of the state of the higher education system established by the Presidential Decree No. R-4724 of October 8, 2016, revealed that in a number of higher educational institutions the scientific and pedagogical potential is still at a low level, does not correspond to modern educational and methodological and information support of the educational process, the material and technical base needs updating.

In the higher education system, work is not carried out properly to establish close partnership relations with the leading foreign profile research and educational institutions, to broadly introduce international best practices into the learning process, especially on the basis of internships and advanced training of prospective teachers and researchers in these institutions.

In order to radically improve the system of higher education, radically revise the content of training in accordance with the priority tasks of the country's socio-economic development, provide the necessary conditions for training specialists with higher education at the level of international standards:

Consider the most important tasks of further improvement and comprehensive development of the system of higher education:

Formation of target parameters of training of personnel with higher education, optimization of directions and specialties of education in higher educational institutions, taking into account the prospects for the integrated development of regions and economic sectors, the needs of the implemented territorial and sectoral programs;

Further improvement of the educational process, curricula and higher education programs on the basis of extensive use of the latest pedagogical technologies and teaching methods, qualitative updating and introduction of modern forms of organization of the scientific and educational process of the master's degree;

Creation and wide introduction of new generation teaching aids in the higher education system, provision of modern educational, educational, methodological and scientific literature to higher educational institutions, including on the basis of acquisition and translation of the latest foreign literature, regular renewal of the funds of information and resource centers;

A steady increase in the level and quality of the professional skills of the pedagogical staff, the passage of advanced training, training of pedagogical and scientific staff, the training of graduates of higher educational institutions in PhD and magistracy programs abroad, the wide involvement in the educational process

of higher educational institutions and centers for retraining and advanced training of highly qualified foreign scientists , teachers and specialists;

Strengthening the scientific potential of higher educational institutions, further development of university science, strengthening its integration with academic science, increasing the effectiveness and effectiveness of research activities of faculty, involving gifted students in scientific activities;

Strengthening the spiritual and moral content of higher education, conducting extensive educational and educational work on deep-rooted adherence among student youth to the idea of independence, fidelity to national traditions of humanity and high spirituality, strengthening critical thinking and immunity to alien ideas and ideologies;

Further strengthening of the material and technical base of higher educational institutions through the construction, reconstruction and overhaul of educational and scientific laboratory buildings and buildings, sports facilities and objects of social and engineering infrastructure, equipping the educational and scientific laboratory facilities with modern instruments and equipment in priority areas of university science;

Equipping higher education institutions with modern information and communication technologies, expanding the access of students, teachers and young researchers to the world's educational resources, electronic catalogs of advanced scientific literature and databases.

Taking into account the development of information technology, more and more powerful mobile devices are appearing from year to year. Consequently, the requirements for applications intended for these devices are significantly increased. There are various mobile platforms, and each has its own development tools. There can be developed applications that will run on several platforms, that is, cross-platform. However, you need to understand that the capabilities of software written for a particular platform are wider, so it's more logical to install the appropriate software on the appropriate platform. Since the advent of the first mobile

applications, Java has always been one of the most popular languages used to develop them. So it remains to this day, despite the emergence of new platforms.

The aim of the thesis is to develop a mobile application for the website of the Tashkent Institute of Railway Transport Engineers. As the platform was chosen Android, the development was conducted in the Android Studio environment using the Anroid API and the Android SDK.

The thesis consists of an introduction, 4 chapters, conclusion and list of used literature.

# I CHAPTER. THEORETICAL PART

## 1.1. The general concept of developing applications for mobile devices

Developing applications for mobile devices is a process in which applications are developed for small portable devices such as PDAs, smart phones or cell phones. These applications can be pre-installed on the device during production, downloaded by the user through various platforms for software distribution or are web applications that are processed on the client side (JavaScript) or the server.

**Runtime Environment.** Android, iOS, Open webOS, Tizen from Samsung, and Windows Phone support standard binary application files both on personal computers with code running on a certain format processor (mainly ARM architecture). Windows Phone can be compiled for x86 architecture for debugging on a PC without emulating a processor, and also supports the Portable Executable (PE) format associated with the .NET Framework. Windows Phone, Android, webOS and iOS provide free SDKs and integrated development environments for developers.

**Application testing.** List of tools for testing applications for mobile devices:
• Emulators
• Cloud platform devices
• Automated playback of script tests
•　　Stress Testing
• Mankiteering
• Statistic collectors

**Mobile device emulators.** First, the application is tested in the development environment using the emulator. After that, the application is tested on the device. Emulators are a simple way to test an application on a mobile phone without using

it physically. Below is a list of available tools for testing applications among the most popular mobile operating systems:

• Google Android Emulator Android Emulator runs on Windows as a separate application without having to fully download and install the Android SDK.

• Official Android SDK Emulator Includes a mobile device emulator that implements all the hardware and software features of a typical device.

• Mobil One Developer is a mobile Web IDE for Windows that helps a developer program, test, debug, and deploy mobile web applications on devices such

• Like the iPhone, BlackBerry, Android devices and Palm Pre.

• Test iPhone A web-based simulator for rapid testing of web applications for the iPhone. Works with Internet Explorer 7, Firefox 2 and Safari 3.

• iPhone provides an accurate web browser environment, developed by Safari. Can be used to develop websites for the iPhone. Not an iPhone emulator. The iPhone starts only on Mac OS X 10.4.7 and higher.

• BlackBerry Simulator There are many official BlackBerry emulators. With any of them, it is possible to check how the software, screen, keyboard of the device will work with the application.

**Application Stores.** Various initiatives exist from mobile operators and from manufacturers. Application developers can offer and publish their programs in application stores, with the ability to earn from the distribution of revenue on sales. The most famous are the Apple App Store, where only approved applications can be distributed and run on iOS devices (also known as walled garden), and Google's Android Market, applications that run on devices with the Android OS. HP / Palm also have Palm App Catalog where users of devices on HP / Palm webOS can download applications directly from the device or send a link to the application using a unique distribution method.

**Development platforms.** Each of the platforms for mobile applications has an integrated development environment that provides tools that allow the

developer to program, test and implement applications on the target platform. To compare mobile applications in Java with applications written in other languages, we compare the Android platform with iOS and Windows Phone (Table 1.1).

Table 1.1 The market of mobile platforms based on IDC data

| Platform | Pro-sales, 2017 | Share of Themarket, 2017 | Annual Growth, 2017 | PRO DAG, 2021 | Mark etshare, 2021 | Annuali ncrease, 2021 | Ratesofgrowth, 2016-2021 |
|---|---|---|---|---|---|---|---|
| **Android** | 1290,7 | 85,1% | 3,5% | 491,1 | 85,5% | 3,1% | 3,6% |
| **iOS** | 223,6 | 14,7% | 3,8% | 52,1 | 14,5% | 1,4% | 3,2% |
| **Windows Phone** | 1,1 | 0,1% | -80,9% | 0,3 | 0,0% | -18,0% | -44,8% |
| **Другие** | 1,6 | 0,1% | -64,4% | 1,0 | 0,1% | -5,3% | |
| **Итого** | **1,517,0** | **100%** | **3,0%** | **1744,6** | **100%** | **2,9%** | **3,4%** |

## 1.2 Android

The Java language is actively used to create mobile applications for the Android operating system. In this case, programs are compiled into non-standard bytecode, for use by their virtual machine Dalvik.

For such compilation an additional tool is used, namely the Software Development Kit, it was developed by representatives of Google. Development of applications can be conducted in the Eclipse environment, using the plug-in - Android Development Tools (ADT) or IntelliJ IDEA. The JDK version must be 5.0 or higher. From the point of view of the programmer, Android is a platform that abstracts the developer from the kernel and allows him to create Java code. Android has several useful features. First, it is a framework that offers a large set of APIs for creating different types of applications and, in addition, provides the ability to reuse and replace components that are offered by the platform and third-party applications. Secondly, the presence of a virtual machine Dalvik, responsible for launching applications on Android. Many libraries are available for working with applications:

• Bionic (a library of standard functions incompatible with glibc);

• Multimedia libraries based on PacketVideoOpenCORE (supports such formats as MPEG-4, H.264, MP3, AAC, AMR, JPEG and PNG);

• SGL (two-dimensional graphics engine);

• OpenGL ES 1.0ES 2.0 (the engine of three-dimensional graphics);

• Surface Manager (provides for applications access to 2D / 3D);

• WebKit (a ready engine for a web browser, it handles HTML, JavaScript);

• FreeType (engine for processing fonts);

• SQLite (lightweight database, available for all applications);

• SSL (a protocol that provides secure transmission of data over a network).

Compared with conventional Linux applications, Android applications follow additional rules:

• Content Providers - data exchange between applications;

• Resource Manager - access to resources such as XML, PNG, JPEG files;

• Notification Manager - access to the status bar;

• Activity Manager - manage active applications.

Google offers for free download the Development Kit (Software Development Kit), which is designed for x86-machines under the operating systems Linux, Mac OS X (10.4.8 or higher), Window XP, Windows Vista and Windows 7. The development requires JDK 5 or newer. The development of applications for Android can be conducted in the Java language (at least Java 1.5). There is a plug-in for Eclipse - Android Development Tools (ADT), intended for Eclipse versions 3.3-3.7. There is also a plug-in for IntelliJ IDEA that makes it easier to develop Android applications, and for the NetBeans IDE development environment, which, starting with NetBeans version 7.0, has ceased to be experimental, although it is not yet official. In addition, there is Motodev Studio for Android - an integrated development environment based on Eclipse, which allows you to work directly with the Google SDK. In 2009, in addition to ADT, the Android Native Development Kit (NDK) was published - a toolkit and library package that allows you to implement part of the application in C / C ++. NDK is recommended for the development of code sections that are critical to speed. In 2013, Google introduced a new development environment Android Studio, based on IntelliJ IDEA from JetBrains.

In 2013, the release of Embarcadero RAD Studio - XE5.The ability to develop native applications for the Android platform. The process of creating an Android application does not require additional devices, except, in fact, Android devices (in principle, you can do and emulator). According to research firm IDC, Google's operating system continues to lead both in Russia (77%) and in the world (78%) smartphone market. The reason - in a large number of manufacturers - here and super cheap phones, and powerful smartphones for several thousand dollars. However, such a large coverage generates the main drawbacks of the development for Android. If you focus on a wide range of devices, you will have to consider

different performance, an infinite number of screen sizes and memory. As a result - increased costs for designing several interfaces and additional testing. The cost of development in this case increases in proportion to the number of supported devices. In addition, Android owners do not like to pay for applications. The reason for this is partly the ease of installing the hacked program - it's often enough to find the file you need on one of the forums. On the other hand, buyers of low-cost models are not primarily targeted at large spending in application stores. Any developer can sign up for Google Play. To do this, you have to pay $ 25 with a bank card, download the application screenshots, its description and code. Google does not have such strict requirements to the quality of the application, like Apple. This reduces the risks of rework costs. In addition, there are alternative application stores, such as Amazon Apps, Samsung Apps, Opera Apps, SlideMe and Yandex.Store. Each has its own moderation policy, but the presence in them gives a tangible inflow of users.

**Android Studio.** Android Studio is an integrated development environment (IDE) for working with the Android platform, announced on May 16, 2010 at the Google I / O.IDE conference was freely available since version 0.1, published in May 2013, and then moved to the beta stage , starting with version 0.8, which was released in June 2014. The first stable version 1.0 was released in December 2014, then the Android Development Tools (ADT) plug-in for Eclipse stopped. Android Studio, based on the IntelliJ IDEA software from JetBrains, is the official Android application development tool. This development environment is available for Windows, OS X and Linux. May 17, 2017 at the annual Google I / O conference, Google announced the language Kotlin used in Android Studio as the official programming language for the Android platform in addition to Java and C ++.

New features appear with each new version of Android Studio. The following functions are currently available. Advanced layout editor: WYSIWYG, the ability to work with UI components using Drag-and-Drop, the function of previewing the layout on several screen configurations. Assembling applications based on Gradle. Various types of assemblies and generation of several .apk files

Code refactoring A static code analyzer (Lint) that allows you to find performance problems, incompatibility of versions and others. Built-in ProGuard and a utility for signing applications.Patterns of basic mock-ups and Android components. Support for developing applications for Android Wear and Android TV. Built-in support for the Google Cloud Platform, which includes integration with Google Cloud Messaging and App Engine.Android Studio 2.1 supports the Android N Preview SDK, which means that developers can start working on an application for a new software platform. New version of Android Studio 2.1 is able to work with the updated Jack compiler, and also has improved support for Java 8 and an improved feature called Instant Run. Platform-tools 23.1.0 for Linux without ads has become exclusively 64-bit, even when trying to install a 32-bit version. In other words, Android Studio no longer works (produces unrecoverable errors) in 32-bit Linux versions.https: //code.google.com/p/android/issues/detail? Id = 196866In Android Studio 3.0, the tools of the language Kotlin based on JetBrainsIDE.

Android Studio is a new and fully integrated application development environment, recently released by Google for the Android operating system. This product is designed to provide developers with new tools for creating applications, as well as provide an alternative to Eclipse, which is currently the most popular development environment.

Main features - real-time imposition is realized, many options for sizes and screen resolutions are available. There is a help section. Built-in tools to improve the quality of applications and monetization. There are tools for tracking the effectiveness of advertisements. The means of interaction with beta testers has been added. And much more.

## II CHAPTER. LANGUAGE OF JAVA PROGRAMMING AND DATABASE
### 2.1 Overview of the Java language

Java-object-oriented programming language, developed by Sun Microsystems (later acquired by Oracle). Java applications are usually translated into a special bytecode, so they can run on any virtual Java machine, regardless of the computer architecture. The official release date is May 23, 1995. Java programs are translated into the bytecode executed by the Java virtual machine (JVM), a program that processes the byte code and passes the instructions to the hardware as an interpreter.

The advantage of this way of running programs is the complete independence of the bytecode from the operating system and hardware, which allows you to run Java applications on any device for which there is a corresponding virtual machine. Another important feature of Java technology is a flexible security system due to the fact that the execution of the program is completely controlled by the virtual machine. Any operations that exceed the program's installed permissions (for example, attempting unauthorized access to data or connecting to another computer) cause an immediate interruption. Often the disadvantages of the concept of a virtual machine are that the execution of bytecode by a virtual machine can reduce the performance of programs and algorithms implemented in the Java language. Recently, a number of improvements have been made, which slightly increased the speed of execution of programs in Java:

• application of technology of translation of byte-code into machine code

directly during program operation (JIT-technology) with the ability to store class versions in the machine code;

• wide use of platform-oriented code (native-code) in standard libraries;

• hardware that provides faster processing of bytecode (for example, Jazelle technology supported by some ARM processors).

According to the site shootout.alioth.debian.org, for seven different tasks the run time on Java is on average 1.5-2 times more than for C / C ++, in some cases, Java is faster, and in some cases 7 times slower. On the other hand, for most of them, the memory consumption of the Java machine was 10-30 times greater than the program in C / C ++. Also noteworthy is a study conducted by Google, according to which there is significantly lower performance and more memory consumption in test cases in Java in comparison with similar programs in C ++

**Why Java is important to the Web application.** The Internet helped to catapult Java to the cutting edge of programming, and Java, in turn, had a profound effect on the Internet. There is a simple explanation: Java unfolds a universe of objects that can move freely in cyberspace. In the network, two very broad categories of objects are transferred between the server and your personal computer - passive information and dynamic, active programs. For example, when you read your email, you are viewing passive data. Even when you load a program, its code is still only passive data until you start executing it. However, an object of the second type can be transferred to your computer - a dynamic, self-fulfilling program. Such a program is an active agent on the client's computer, but it is initialized by the server. For example, the server could provide a (client) program to properly display the data sent to the client.

Equally desirable, as well as dynamic, are network programs. They also cause serious problems in the field of protection and mobility. Before. Java, cyberspace has been effectively closed for half of the objects that now live there. In addition, Java is dealing with a new form of programs - applets.

## 2.2 The main characteristics of Java.

Java can be used to create two types of programs - applications and applets. An application is a program that runs on your computer using its operating system. That is, an application created with Java is more or less like an application created using C or C ++. When you create a Java application, it does not differ much from

any other computer language. More important is the ability of Java to create applets. Applet is an application developed for transmission over the Internet and executed by a compatible Java Web browser. An applet is, in fact, a tiny Java program that is dynamically loaded across a network, like an image, an audio file, or a video clip. An important difference is that an applet is an intellectual program, and not just an animation (animation) or a media file. In other words, an applet is a program that can respond to user input and dynamically change, rather than simply performing the same animation or sound many times.

Applets would not be more than a mental desire if Java were not able to address two fundamental problems related to them - protection and mobility. Before continuing, let's define what these two terms mean for the Internet.

Interpretability and high efficiency

As mentioned above, Java makes it possible to create cross-platform programs by compiling into an intermediate representation called the Java bytecode. This code can be interpreted in any system, which is provided by a virtual Java-machine. Most of the previous attempts for cross-platform solutions did this at the expense of costly performance. Other interpreted systems, such as BASIC, Tc1 and CERL, suffer from an almost insurmountable efficiency deficit. Java, however, was designed to work effectively on very low-power CPUs. As explained earlier, although it is true that Java was being developed for interpretation, the Java bytecode was carefully designed so that there were no problems in translating it directly into native

machine code (very highly efficient), using a synchronous compiler. The Java executive system, which provides this property, does not lose any of the benefits of code independent of the platform. "Highly efficient cross-platform

Basics of classes

The Java language is based on the class. A class is a logical construction on which the entire Java language is built, because this design determines the form and nature of the object. The class also forms the basis for object-oriented

programming in Java. Any concept that you want to implement in a Java program must be encapsulated in a class.

Due to the fact that the class is fundamental enough for Java, this and the next few chapters will be devoted to this most important concept of language. Here you will see the main elements of the class, and you will learn how a class can be used to create objects. You also get acquainted with methods, constructors, and this. The classes in the examples of programs were used from the very beginning of this book. However, until now only the most elementary of their (classes) form has been used. The classes created in the previous chapters initially exist simply to include the main () method, which was introduced to demonstrate the basics of Java syntax. As you will see, classes are more powerful components of the language than those presented so far. Perhaps, the most important thing in the notion of a class is that it defines a new type of data. Once defined, a new type can be used to create objects of this type. Thus, a class is a template for an object, and an object is an instance of the class. Because the object is an instance of the class, the two words object and instance will often be used as interchangeable.

Overloading methods

In the Java language, within one class, you can define two or more methods that share the same name, but have a different number of parameters. When this is the case, the methods are called overloads, and the process is referred to as overloading the method. Overloading methods is one of the ways in which Java implements polymorphism. If you have never used a language that allows overloading methods, the concept may at first seem strange. But, as you will see, overloading the method is one of the most exciting and useful features of the Java language.

To determine when a call is invoked, which version of the overloaded method is actually invoked, Java is guided by the type and / or number of its parameters. Thus, overloaded methods should differ in type and / or in the number of their parameters. Although such methods can have different types of return value, however, one is not enough to distinguish two versions of the method. When

Java encounters a call to an overloaded method, it simply executes its (method) version, whose parameters correspond to the parameters used in the call.

**Inheritance.** Inheritance is one of the cornerstones of object-oriented programming, because it allows you to create hierarchical classifications. Using inheritance, you can create a main class that defines the properties that are common to a set of related elements. Then this class can be inherited by other, more specific classes, each of which adds those properties that are unique for it. In Java terminology, the class that is inherited is called the superclass. A class that performs inheritance is called a subclass. Therefore, a subclass is a specialized version of the superclass. It inherits all instance variables and methods defined by the superclass, and adds.

Packages and interfaces

Packages are containers for classes that are used to store the namespace of classes divided into named areas. For example, you can create a class named List that can be stored in your own package, without fearing that it will encounter some other class with the name List, stored elsewhere. Packages are stored in a hierarchical way and explicitly imported into definitions of new classes.

In the previous chapters, you saw how the methods define the interface to the data in the class. Using the keyword interface Java allows you to completely separate the interface from its implementation. Using the interface, you can define a set of methods that can be implemented by one or more classes. The interface itself does not really define any implementation. Although interfaces are similar to abstract classes, they have the additional possibility: a class can implement more than one interface. In contrast, a class can inherit only one superclass (abstract or other).

Packages and interfaces are the two main components of the Java program. In general, the Java source file can contain any (or all) of the following four internal parts:

☐ single package operator (optional);

☐ any number of import operators (optional);

□ a single public class announcement (required);

□ any number of private package classes (optional).

So far, only one of these parts has been used in the examples - anonymous declaration of class public.

**Databases.** The database is a specially organized storage of information resources in the form of an integrated set of files, providing convenient interaction between them and quick access to data.

To store data independently of the programs, so that they are linked together and organized according to certain rules, it is advisable. But the question of how to store data, according to what rules they should be organized, remained open. There are many methods (by the way, they are called models of representation or data storage). The most popular are the object and relational data models.

Terminology in DBMS, and the terms "database" and "data bank" are partly borrowed from financial activities. This borrowing is not accidental and is due to the fact that working with information and working with the money masses are similar in many respects, because both there and there is no personification of the processing object: two hundred-ruble banknotes are as indistinguishable and interchangeable as two identical bytes (naturally , with the exception of serial numbers).

**Developing a Database.** Since the site is written using the Wordpress content management system, whose database is represented in the form of MySQL, the site database will support the same structure, making its changes to it. The following is the SQL code of the application:

# III CHAPTER. DEVELOPMENT OF ANNEX
## 3.1 Development of API for mobile applications

API (application programming interface, application programming interface, application programming interface) is a set of ready-made classes, procedures, functions, structures and constants provided by the application (library, service) or an operating system for use in external software products. Used by programmers when writing all kinds of applications. The API defines the functionality that the program (module, library) provides, while the API allows you to abstract from how exactly this functionality is implemented.

If the program (module, library) is treated as a black box, then the API is a set of "pens" that are available to the user of this box and which he can twist and twitch.

The software components interact with each other through the API. In this case, components usually form a hierarchy - high-level components use APIs of low-level components, and those in turn use APIs of even lower-level components.

By this principle, protocols for data transmission over the Internet are constructed. The standard protocol stack (network model OSI) contains 7 levels (from the physical level of the transfer of bits to the level of application protocols, similar to the HTTP and IMAP protocols). Each level uses the functionality of the previous ("lower") data transmission layer and, in turn, provides the necessary functionality to the next ("overlying") level.

It is important to note that the concept of protocol is close in meaning to the concept of API. Both are an abstraction of functionality, only in the first case we are talking about data transfer, and in the second one - about the interaction of applications. The API library for functions and classes includes a description of the signatures and semantics of functions.

The function signature is part of the general function declaration, which allows translation facilities to identify the function among others. In different

programming languages, there are different representations about the signature of the function, which is also closely related to the overload capabilities of these languages.

Sometimes the signature of a function is distinguished by a call. The call signature is usually made up by the syntactic structure of the function call, taking into account the signature of the scope of the function, the function name, the sequence of the actual argument types in the call, and the type of the result. The implementation signature usually involves some elements from the syntax of the function declaration: the scope specifier of the function, its name and the sequence of formal argument types.

For example, in the C ++ programming language, a simple function is uniquely identified by the compiler by its name and by the sequence of its argument types, which is the signature of the function in that language. If the function is a method of some class, then the name of the class will also participate in the signature.

In the Java programming language, the signature of the method is its name and the sequence of parameter types; the value type does not participate in the signature.

The semantics of a function is a description of what this function does. The semantics of a function includes a description of what is the result of calculating a function, how and from what this result depends. Usually the result of execution depends only on the values of the arguments of the function, but in some modules there is a concept of state. Then the result of the function may depend on this state, and, in addition, the result may be a change in state. The logic of these dependencies and changes refers to the semantics of the function. A complete description of the semantics of functions is the executable function code or the mathematical definition of a function.

Almost all operating systems (UNIX, Windows, OS X, etc.) have an API, with which programmers can create applications for this operating system. The main API of operating systems is a lot of system calls.

In the software industry, common standard APIs for standard functionality have an important role, since they ensure that all programs that use the common API will work equally well, or at least in the usual way. In the case of the GUI API, this means that the programs will have a similar user interface, which facilitates the process of mastering new software products.

On the other hand, the differences in the APIs of different operating systems make it very difficult to transfer applications between platforms. There are various methods for circumventing this complexity - writing "intermediate" APIs (API wxWidgets, Qt, GTK, etc.), writing libraries that display system calls of one OS to system calls of another OS (runtime environments like Wine, cygwin, etc.), the introduction of coding standards in programming languages (for example, the standard C language library), the writing of interpreted languages implemented on different platforms (sh, python, perl, php, tcl, Java, etc.).

It should also be noted that the programmer often has several different APIs, which allow to achieve the same result. In this case, each API is usually implemented using the API of software components of a lower level of abstraction.

For example: in order to see the line "Hello, world!" In the browser, it is enough just to create an HTML document with the minimum header and the simplest body containing this line. When the browser opens this document, the browser program will transfer the file name (or an already open file descriptor) to the library that processes the HTML documents, which in turn will read this file using the operating system API and sort through its device, API library standard graphic primitive operation type "clear window", "write" Hello, world! "In the selected font." During these operations, the library of graphical signs will turn to the window library with the corresponding requests, this library will turn to the operating system API to write the data to the video card buffer.

Almost at each level, there are actually several possible alternative APIs. For example: we could write the source document not on HTML, but on LaTeX, for display could use any browser. Different browsers, generally speaking, use

different HTML libraries, and, in addition, all this can be collected using different primitive libraries and on different operating systems.

The main complexities of existing multi-level API systems are thus:

The complexity of porting code from one API system to another (for example, when the OS changes) Loss of functionality when switching from a lower level to a higher one. Roughly speaking, each "layer" of the API is created to facilitate the execution of some standard set of operations. But at the same time it is really difficult, or it becomes essentially impossible to perform some other operations, which provides a lower level of API. The API is used in web development, usually a certain set of HTTP requests, as well as the structure of HTTP responses, for the expression of which use XML or JSON formats.

The Web API is almost synonymous with the web service, although recently, due to the trend of Web 2.0, the transition from SOAP to REST type of communication has been carried out. Web interfaces that provide a combination of several services in new applications are known as hybrid.

## 3.2 Developing a Participant Application on the Android OS

To develop mobile applications, special tools are required. For iOS, this is Xcode and the operating system is Mac OS. For Android, IntelijeIdea will work under Mac OS and Windows. The functionality of the applications on the Android and iOS OS copies each other, but the implementation methods due to the features of the OS will be different. Applications will communicate with the server by means of the above-described REST-service. The Android app will support version 4.0 and higher, iOS 8.0 and above.

The development of mobile applications involves the use of various components to implement the interface for users, on this topic there are special resources on the Internet, where developers exchange their work.

In the development of applications, a number of problems arose that needed to be solved, such as the organization of uninterrupted data transfer with the server

and rational data storage, to ensure subsequent easy extensibility. The first problem I solved by analyzing the source code of popular applications, as a result, applied the solution in the form for Android and iOS, respectively. By these solutions, I removed the problem of errors when executing queries to the server due to network problems, since the mobile network is very unstable to uninterrupted data transmission. The second problem was very acute in the Android OS, when using standard means of data storage in the database, the developer is faced with extensibility problems of the database and requires a large amount of code to implement it, in order to solve this problem I applied the solution in the form. Advantages of using different technologies, when programming applications, allow the developer to reduce the number of program code, respectively, to shorten development time.

**Android SDK.** Android SDK is an application development environment for the Android operating system. It allows you to create and test Android applications that use a mobile device camera, an accelerometer, a compass, GPS data, access via Bluetooth, Wi-Fi, EDGE and 3G.

Android SDK supports the work with multimedia content (audio, video, images in the formats MPEG4, H.264, MP3, AAC, AMR, JPG, PNG and GIF), SQLite databases, integrated browser on the WebKit engine, virtual machine Dalvik, GSM telephony etc. Android SDK users can test the applications they create using the built-in emulator.

Android SDK ADT Bundle includes:

- Eclipse + ADT plugin;

- Android SDK tools;

- Android platform tools;

- The latest Android platform;

- The Android OS image for the emulator;

Changes in the latest version of the change history

- Edition Android SDK version 24 or later;

- Added a new command line tool sdkmanager for viewing, installing, updating and removing individual packages of the Android SDK;

-Fixed a bug -gpu guest;

- Added support for decoding WebP images;

- Added support for decompression of ETC2 textures.

The development of mobile applications for the Android platform from Google is planning to shake the world of mobile phone operating systems by launching its Android platform. Created completely open and free for developers, the application programming interface can change how software is used for mobile phones, making all applications equal and integrating data phones with web tools.

Android SDK gives developers of software for mobile phones the opportunity to play with a new platform. It contains everything you need to start creating applications, as well as a full-featured emulator for their testing after you have finished creating them.

Even those who do not belong to the developers can try the emulator, as it is easy to install and use (of course, it will take some time to download everything). There is a choice of phone skins and permissions, which you can also tinker with. After I played with the OS for a while, I must say that it struck me. Its organic integration with Google Maps is visible only in order to emphasize the potential for the development of applications that blur the boundaries between the phone and the web software.

Installing programs on the emulator is not easy, and you will have to tinker with the code in order to do this. Although there is a lot of documentation available on the Internet to help you get the most out of the SDK, it really will be useful for developers of programs for mobile phones, and not for those who are just curious about what the Android applications will look like.

In general, the Android SDK provides a fast and reliable development environment for those who aspire to the next era of mobile software.

Android SDK includes a variety of libraries, documentation and tools that help develop mobile applications for the Android platform.

Android SDK API - Android library API, provided for application development.

The SDK documentation includes extensive background information detailing what is included in each package and class and how to use it to develop applications.

AVD (Android Virtual Device) - an interactive emulator of the mobile device Android. Using the emulator, you can run and test applications without using a real Android device.

Development Tools - SDK includes several development tools that allow you to compile and debug your applications.

Sample Code - The Android SDK provides a sample application that demonstrates some of the features of Android, and simple programs that show how to use the individual API features in your code.

## 3.3 SDK and Android API Levels

Before you start developing applications for Android, it is useful to understand the overall approach of the platform to managing the change in the API. It is also important to understand the Android API Level and its role in making your application compatible with the devices on which it will be installed.

The API layer is an integer value that uniquely identifies the version of the Android platform API. The platform provides the API structures that applications can use to interact with the Android system. Each next version of the Android platform can include API updates.

Updates to the API structure are designed so that the new API remains consistent with earlier versions of the API. Thus, most of the changes in the API are cumulative and introduce new functionality or fix the previous ones. Since part of the API is constantly updated, outdated APIs are not recommended for use, but they are not removed for reasons of compatibility with existing applications.

The API layer that uses the Android application is determined by the integer ID that is specified in the configuration file of each Android application.

The table defines the correspondence between the API level and the version of the Android platform

**Table 2. Compliance of platform version and API level**

| Platformversion | VersionCode | API Level |
|---|---|---|
| Android 2.0 | ÉCLAIR | 5 |
| Android 2.0.1 | ECLAIR_0_1 | 6 |
| Android 2.1 | ECLAIR_MR1 | 7 |
| Android 2.2 | FROVO | 8 |
| Android 2.3 Android 2.3.1 Android 2.3.2 | GINGERBREAD | 9 |
| Android 2.3.3 Android 2.3.4 | GINGERBREAD_MR1 | 10 |
| Android 3.0 | HONEYCOMB | 11 |
| Android 3.1 | HONEYCOMB_MR1 | 12 |
| Android 3.2 | HONEYCOMB_MR2 | 13 |
| Android 4.0 | ICE_CREAM_SANDWICH | 14 |
| Android 4.0.3 | ICE_CREAM_SANDWICH_ MR1 | 15 |
| Android 4.1 | JELLY_BEAN | 16 |
| Android 4.2 | JELLY_BEAN_MR1 | 17 |
| Android 4.3 | JELLY_BEAN_MR2 | 18 |
| Android 4.4 | KITKAT | 19 |
| Android 4.4W | KITKAT_WATCH | 20 |
| Android 5.0 | LOLLIPOP | 21 |

| Android 5.1 | LOLLIPOP_MR1 | 22 |
|---|---|---|
| Android 6.0 | MARSHMALLOW | 23 |
| Android 7.0 | NOUGAT | 24 |

Tools for developing and debugging applications

In addition to the emulator, the SDK also includes many other tools for debugging and installing new applications. If you develop Android applications with the Eclipse IDE, many of the command-line tools included in the SDK are already used in the assembly and compilation of the project. However, in addition to these, the SDK also contains a number of useful tools for developing and debugging applications:

- android is an important development tool, launched from the command line, which allows you to create, delete and configure virtual devices, create and update Android projects (when working outside the Eclipse environment) and update the Android SDK with new platforms, additions and documentation;

- Dalvik Debug Monitor Service (DDMS) - integrated with Dalvik Virtual Machine, the standard virtual machine platform Android, this tool allows you to manage processes on both the emulator and the device, and also helps in debugging applications. You can use this service to complete processes, select a specific process for debugging, generate trace data, view "heap" or information about threads, take screenshots of the emulator or devices, and much more;

- Hierarchy Viewer is a visual tool that allows you to debug and optimize the user interface of the application being developed. It shows the visual tree of the hierarchy of representations, analyzes the speed of repainting graphic images on the screen, and can perform many other functions for analyzing the graphical interface of applications;

- Layoutopt is a command line tool that helps you to optimize the layout schemes and layout hierarchy in the application you are creating. It is necessary to solve problems when creating complex graphical interfaces that can affect the performance of the application;

- Draw 9-patch is a graphical editor that allows you to easily create a NineRatrix graphic for the graphical interface of your applications;

- sqlite3 - a tool for accessing SQLite data files created and used by applications for Android;

- Traceview - this tool provides graphical analysis of trace logs that can be generated from applications;

- mksdcard is a tool for creating a disk image that you can use in the emulator to simulate the presence of an external memory card (for example, an SD card).

The most important of these is the emulator of the mobile device, but the SDK also includes other tools for debugging, packaging and installing your applications on the emulator.

Android Virtual Device (Android Virtual Device) is an emulator that runs on a regular computer. The emulator is used to design, debug and test applications in a real runtime environment. Before you can run the Android device emulator, you need to create an Android Virtual Device (AVD) .AVD defines the system image and device settings used by the emulator.

You can create the device emulator in two ways:

At the command line, the android utility, available in the directory where you installed the Android SDK, is in the tools folder. Visually using the Android SDK and AVD Manager in the Eclipse IDE, selecting Window | Android SDK and AVD Manager. The Android SDK and AVD Manager window appears, with which you can create and configure mobile device emulators, as well as download Android SDK updates.

The Android SDK and AVD Manager window will also appear if you call android.exe on the command line without parameters. IAndroid SDK and AVD Manager
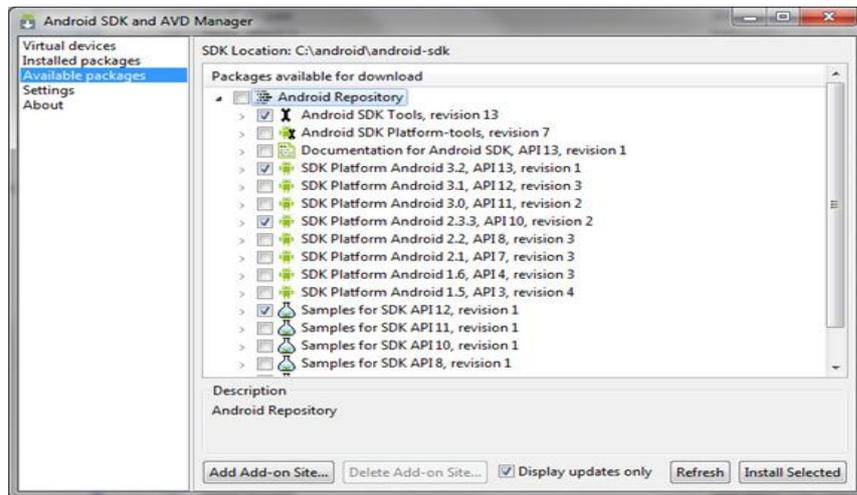
Fig.3. Android SDK and AVD Manager window

On the right side of the List of existing Android Virtual Devices panel, click the New button, the Create new AVD window opens. In this window, set the required configuration for the device emulator being created:

Name - the name of the device being created;

Target- The version of the Android SDK supported by the device. The device is backward compatible with older versions of the SDK, i.e. if the version of Android 2.0 is selected, the emulator will support SDK versions 1.6, 1.5, 1.1;

SD Card - installs an SD virtual card;

Skin is the type of device screen. The downloadable platform includes a number of skins for the emulator that you can use to simulate the work of the application in devices with different sizes and screen resolutions. The set of skins for the emulator, depending on the version of the SDK specified in the Target field, contains various types and sizes of the screen, for example:

HVGA (Halfsize VGA Video Graphics Array), size 320x480, average density, normal screen;

WVGA800 (Wide Video Graphics Array), size 480x800, high density, normal screen;

WVGA854 (Wide Video Graphics Array), 480x854, high density, normal screen;

QVGA (Quarter Video Graphics Array), size 240x320, low density, small screen;

WQVGA (Wide Quarter Video Graphics Array), size 240x400, low density, normal screen;
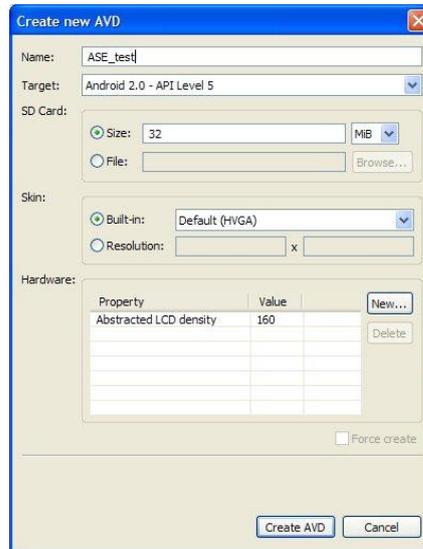


Fig. 4. Window creating a new AVD

Hardware- imitation of equipment installed on the device. If necessary, by pressing the New button, you can call up the window for adding additional virtual equipment.
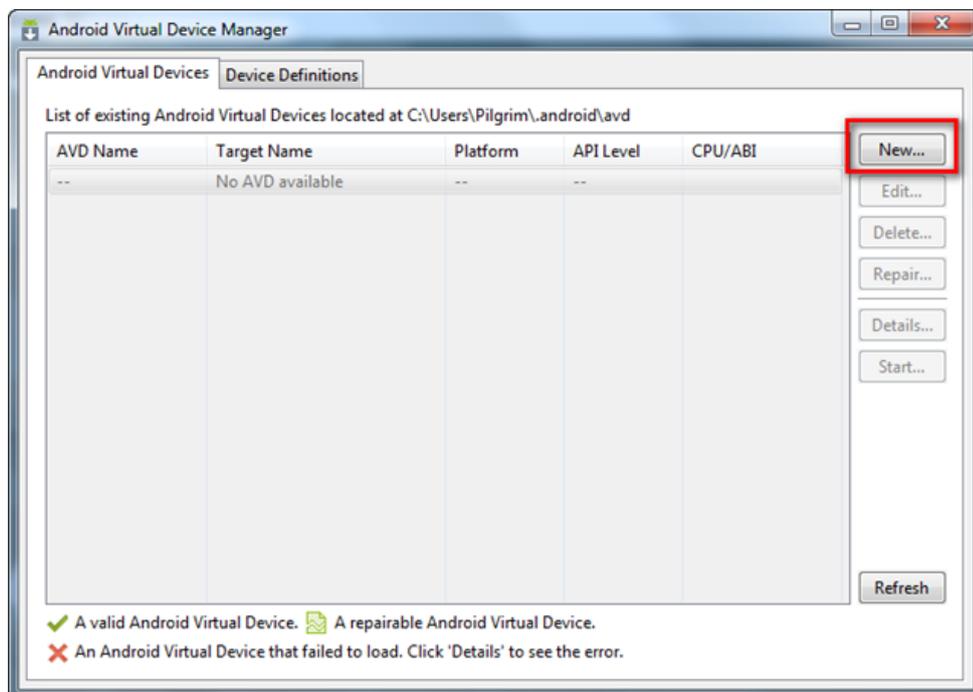


Fig. 5. Window for adding additional virtual equipment

After setting the configuration and pressing the Create AVD button, the manager will create a new virtual device whose name and version of the API appear in the List of existing Android Virtual Devices. For more fine-tuning, it's

better to use the andnoid.exe command-line tool. It has more capabilities than the visual AVD Mapper, and is convenient for configuring the network, ports and virtual emulator hardware. Unfortunately, due to the limited volume of the book, it is not possible to examine this tool in more detail. Depending on the supported version of the API, the appearance of the virtual device will be different. The emulator window is designed in the form of a phone with an additional keyboard. After the system is booted, the Home screen appears, the Android desktop. To access it, use the button with the house icon. The emulator also simulates the touch screen of a real mobile device-in the emulator, click on the screen with the left mouse button.

In the emulator, there are two virtual desktops, which can be navigated by using the arrow buttons on the device's navigation bar or by moving the cursor while the left mouse button is pressed (in the real device, moving your finger across the screen). In addition to the shortcuts of the program on the desktop, you can place widgets.



Fig. 6. Appearance of AVD version 1.5

To test the appearance of the created application at different positions of the screen with the combination of keys <Ctrl> + <F11>, you can change the screen layout from vertical to horizontal and vice versa.

The panel at the top of the screen is the Status Bar. It contains system notification icons: mobile station signal strength, battery charge and current time. The Status Bar is also used to display (in the form of icons appearing on the left side of the panel) user notifications of missed calls, unread text and multimedia messages, received mail, and system notifications from services running in the background. If you select the notification icon in the Status Bar and drag down the marker that appeared, an extended notification panel opens with more detailed information and a button for closing the notification.

The marker at the bottom of the screen allows you to open the launcher of applications installed in the system, Application Launcher. The window opens when you click on the marker.



Fig. 7. The launcher of installed applications Application Launcher

The emulator, however, does not support some of the functionality available on real devices:

• Incoming and outgoing messages. However, you can simulate phone calls through the emulator interface;

• connection via USB;

• a video camera (however, there is a simulator of the video camera);

• connection of headphones;

• determination of connection status;

• determination of the battery charge level; D definition of inserting or removing an SD card;

• Bluetooth connection.

<center>3.4 Dastur qismi</center>

Endi berilgan ishimizni avval Android studioda yaratamiz, ya'ni Java dasturlash tilida dasturini yaratib olamiz. Keyin esa dizaynini ham tuzamiz.U quyidagi ko'rinishda:
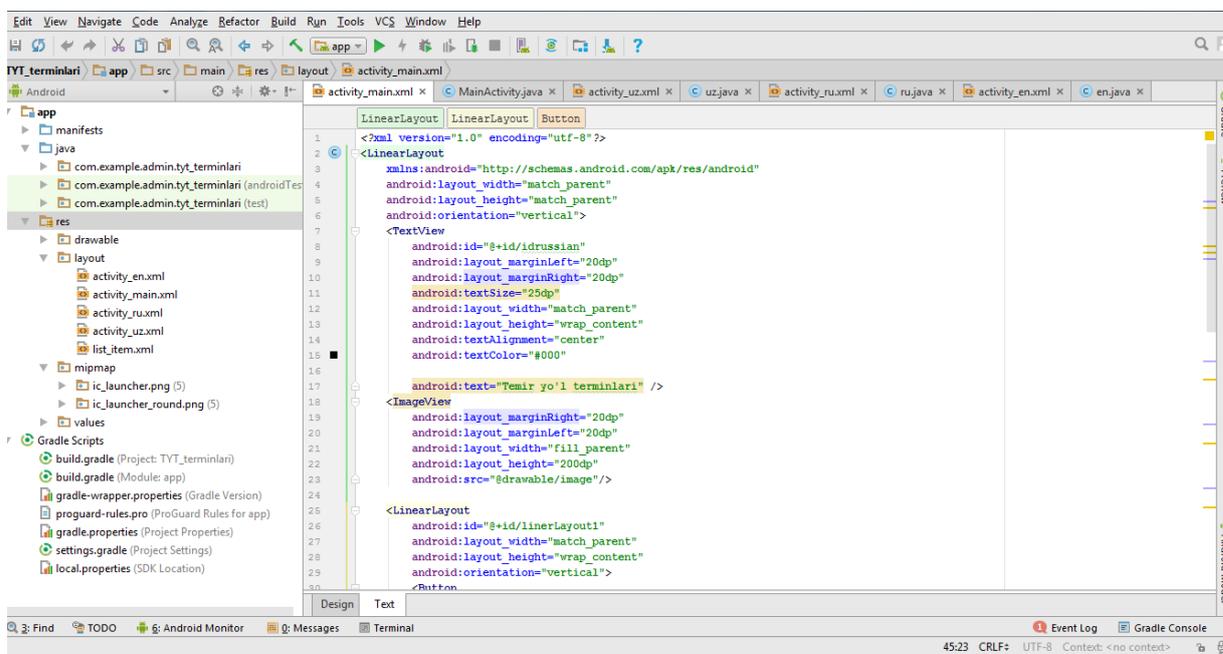


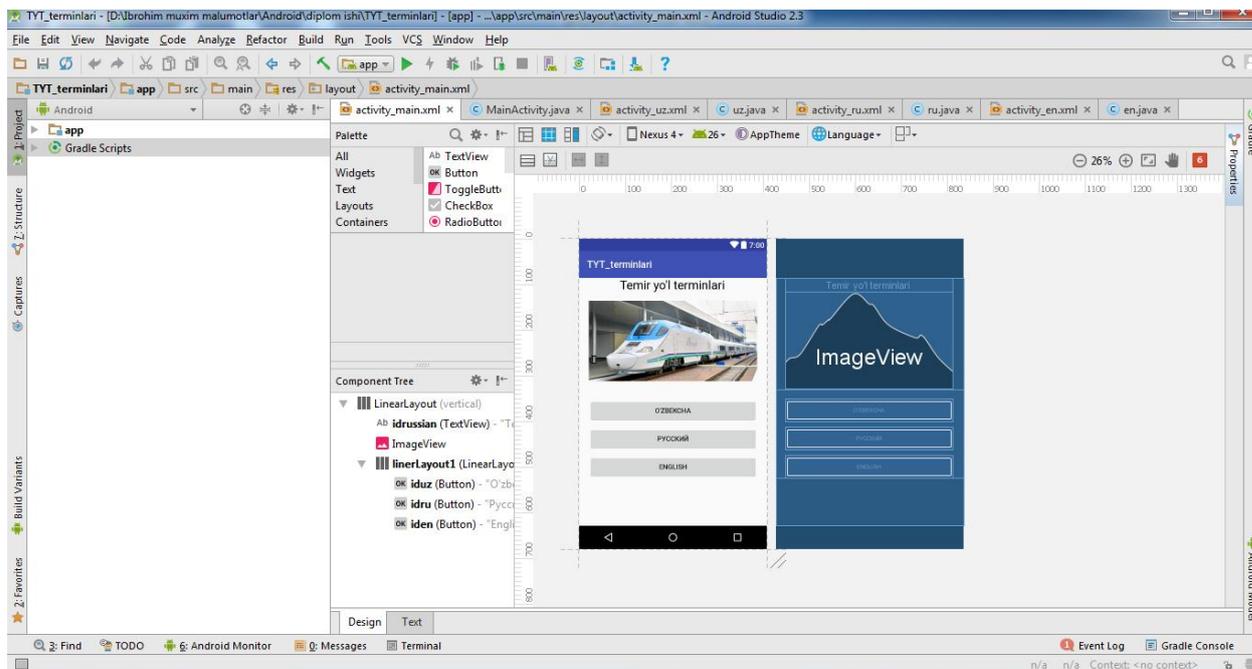<center>Fig. 9 Java dasturlash tilidagi ko'rinishi.</center>

Fig. 10 Dizayni

Keyingi jarayonda Android smartfonlarda dasturni ishlash prinsipini ko'rib o'tamiz. Smatfondagi dasturni ochilgan qismi:



Fig. 11. Dastur ochilgan holati

Endi o'zimizga zarur terminlarimizni qidiramiz. Terminlarni o'zimiz xoxlagan Uzbek-Russian-English tillarida qidirishimiz mumkin.



Fig. 11. O'zbek tilida qidirish
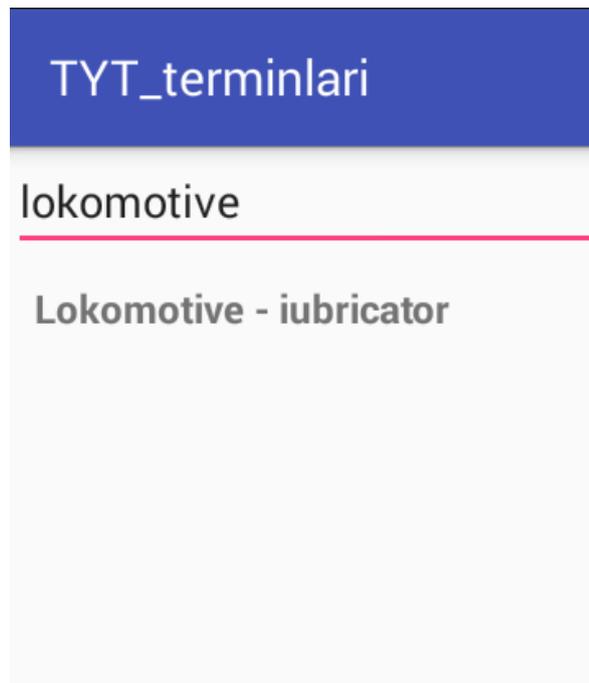


Fig. 11. Rus tilida qidirish

Fig. 11. Ingliz tilida qidirish

Va nihoyat qidirgan terminlarimizni to'liq izohiga ega bo'lamiz. U quyidagi ko'rinishda:
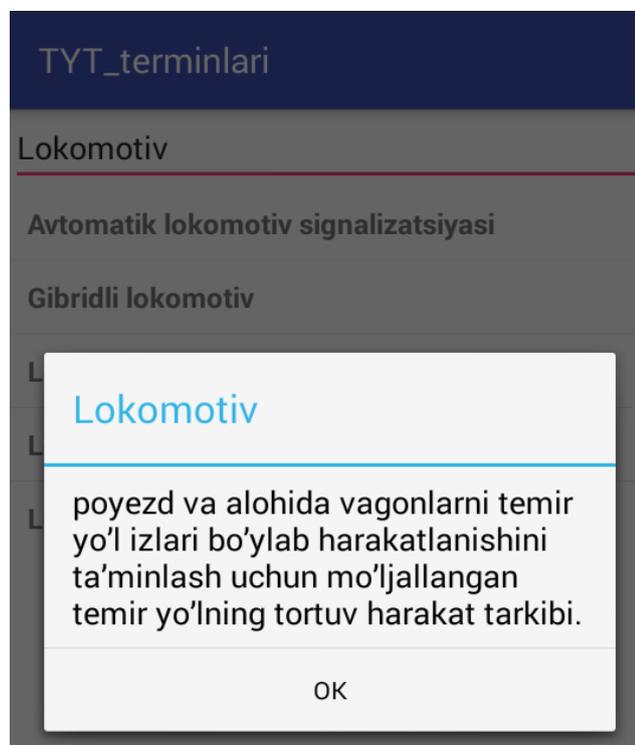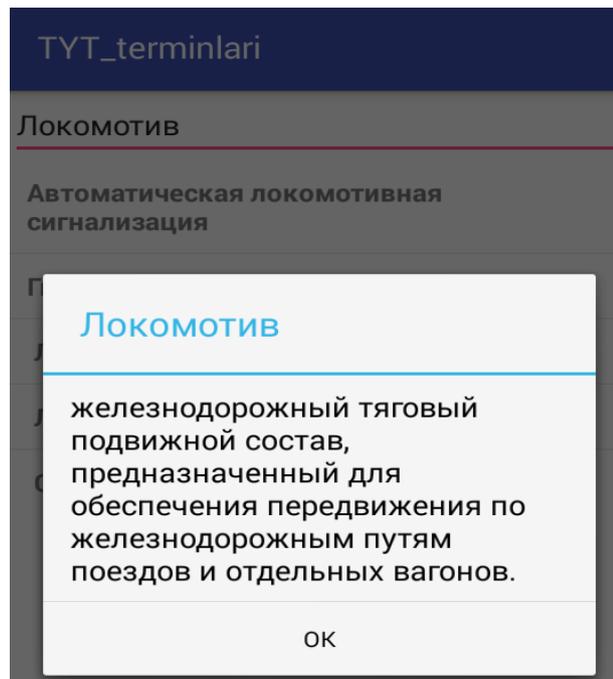


Fig. 11 O'zbek tilidagi natija

Локомотив

Автоматическая локомотивная
сигнализация

**Локомотив**

железнодорожный тяговый
подвижной состав,
предназначенный для
обеспечения передвижения по
железнодорожным путям
поездов и отдельных вагонов.

OK

Fig. 11 Rus tilidagi natija

lokomotive

Lokomotive - iubricator

**Lokomotive - iubricator**

a locomotive, intended for
lubrication of the side surfaces of
the rails, and crests of wheel pairs
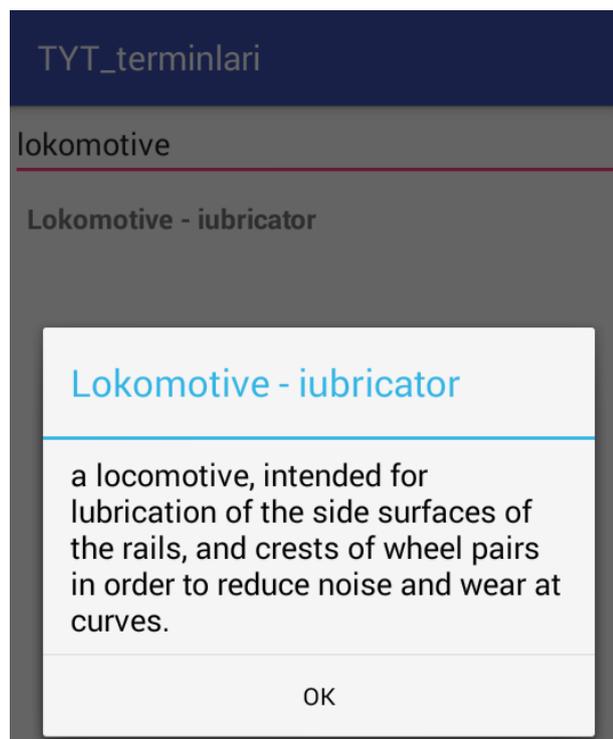in order to reduce noise and wear at
curves.

OK

Fig. 11 Ingliz tilidagi natija

**«O'zbekiston temir yo'llari» AJ**
**Toshkent temir yo'l muhandislari instituti**
**«Hayot faoliyati xavfsizligi» kafedrasi**
Talabaning bitiruv ishini bajarishdagi mehnat muhofazasi bo'limiga

## TOPSHIRIQ

**«Iqtisodiyot»** fakulteti

Talabaning F.I.SH. _____Sayitov Suxrob Xamidovich_____ guruhi __AT-21___

Bitiruv malakaviy ishi mavzusi: __Mikroiqlim sharoitlarini tadqiq qilish_____
_____
_____

Mehnat muhofazasi qismining mazmuni bitiruv malakaviy ishining mavzusiga bog'liq bo'lib, bitiruv malakaviy ishining asosiy rahbari tomonidan tasdiqlanadi.

Topshiriq quyidagi qismlardan iborat:

1. Mikroiqlim sharoitlarining inson organizmiga ta'siri;
2. Mikroiqlim va ishchi hududining havo muhiti;
3. Ishlab chiqarish muhitining mikroiqlimi.

Aniq vazifa: ___Insonlarning ish joylaridagi mikroiqlim sharoitlarini tadqiq qilish va sharoitlar yaratish omillarini ko'rib chiqish_____
_____
_____

Foydalanilgan adabiyotlar:

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«HFX» kafedrasi maslahtchisi                    R.S. Razikov

# IV MICROCLIMATE CONDITIONS SURVEY

## § 4.1. Man of microclimate conditions effects on the body.

Of the production environment, including the building of homes meteriologik microclimate conditions or to the knowledge of the air temperature, its humidity and mobility, pressure, at the same time, the overheating of equipment, materials and components that use infrared and ultraviolet light was separated from the lobby.

Internal and external microclimate of the production environment will depend on two main reasons. Internal reasons than a permanent character if you have the equipment and the production technology of the application of sanitary-technical device is connected. The power of internal causes of used equipment capacity and the effects of sanitary-engineering depends on the quality of the device. If you have the external cause changing the character of the year fasillariga, weather, and late in the day will depend on you. The power of external causes effects of the wall of the building to the roof, how the material that had built from the rafters of there are to do with their lack to do with a lack of them depends on the quality.

The temperature of the human body can adapt to a very big change. Because of the heat in the body of man are separated out and appear on a continuous basis, and as a result, the emergence and the ratio between constant and the temperature of heat be spent at the same level will be saved. While this physiological process is called the exchange of heat in the body.

People in the body which appear to be continuous to the outside with three different ways out of the heat: convective, light distribution, and sweating. The normal microclimate (temperature around 20 ipsos) convective with the way around 30%, light distribution by way of 45% around by way of sweating while around 25% is separated from the heat to the body.

When in the air or infrared rays when the air temperature is high, the heat separated the body's normal process is broken. If the air temperature is equal to or more than the convective heat from the body itself by way of itself. Go-yu on top

of that the air separated out the infrared light from a body heated to standing out by way of heat radiation from the body itself cannot. In such cases it is very difficult because heat exchange considering the body's excess heat in the body with sweating is the only way out. From the body while sweating in high humidity conditions the air by way of convective heat and light distribution considering the difficult excess heat from the body and out by way of.

Unfavorable climatic conditions in violation of the body's heat exchange process (change) as a result of the normal operation becomes difficult and necessary physiological functions in the body life of the members will change.

Very high temperature has a large effect into the heart and vascular system. As a result of high temperature effects in the blood-vessels is accelerated to raise the temperature of the body was the reason for the war. This exchange gives me the destruction of body heat.

As a result of high temperature effects, lower blood pressure, change the chemical composition of the blood. In addition to the effects of hot weather, many gas separated out from the body in a lot of fluid also. The body's water and salt balance disorder may occur as a result of disease, order pull those vessels.

Too bad the members of sharing affects and vitamin catering to high temperature. Havoli work long term as a result of those very hot environment, they may be the overheating of the body, that is, a hot war.

Excessive overheating of the whole body you need to make notice of war from war arising from the hot sun. The heat of the direct sun light in the beginning of the war from the effects of the brain to 40-42 degrees and the heater head will appear.

Thus, normal body temperature can be raised only slightly or remain without. Some in the sun-hot until they hit in the form of the mixture occurs.

The effects of cold air to the body very well studied, it is known that the same thing as cold weather as a result of the effects of different bakteriyalarga of the resistance of the body is reduced. As a result, those flu, colds of the respiratory

tract, lung inflammation, the incidence of colds sick with nerves and the brain. Therefore, these diseases are called disease shamollanish.

The effects of infrared light to the body of different from the effects of the hot weather, primarily a local effect. The local part of the infrared light is characterized by the body's effects to be felt the heat in nurlanayotgan. How high the level of radiation is so high that the heat be felt, has to go even lower. General effects of infrared rays on the body also. In many cases the overall effect of the infrared light is going to effect the body of hot air; infrared light on the effects of raised body temperature, blood-vessels of war is up, up is gas exchange; some of a decrease in blood pressure and breathing tezlanish is observed.

The effects of infrared light to the body of iboratki that feature specific protein from the tissue produces a chemical change. When it falls directly on the eye while the pearl of the xiralashtiradi afford.

The effect of ultraviolet light afford eyes into the sand a man like him was aching, from the eye is afraid of light and will swell a little misty. All these disease is specific to elektrooftalmiya order, if it is known that after exposure to ultraviolet rays after 6-8 hours, sometimes lasts till a day or two.

The relatively large amount of ultraviolet rays did not show positive effects to the body. They will improve blood and substance exchange in the body will be the reason to increase vitamin d emerge. Also, they will kill the bacteria in the air and ultraviolet light in the thing. According to this feature, the ultraviolet rays in medicine and vaccination treatment (preventive), they are widely used as weapons.

The humidity of the air and mobility, and significantly affects on the body of the person is characterized by changes in the body's heat exchange.

## 4.2. Air environment and microclimate of the working area.

The production room (building) microclimate – this is the internal environment of the building in meters of (climate) conditions. Air temperature,

humidity, and movement speed in the case of a combination with blocking as well as the equipment, technological equipment and heat radiation the surface temperature is determined by the effects on the human body.

**Microclimate indicators.** Microclimate in the working area at a height of 2 m from the place of permanent and temporary working standing will be evaluated.

The most favorable conditions – the condition of the body's normal mechanism without tension termoregulyatsiya of providing heat is the sum of long and microclimate influencing the size a regular person. They work to create the conditions for the hot and comfortable qobiliyatlilik a high level of precision.

Regular man effect in long termoregulyatsiya mechanisms - heat mode which continues with the tension of the body changes immediately, which let the sum of the size of the normallashuvchi who called microclimate climatic conditions is regarded as. In such a case, does not reach to the condition of health or traumatic damage to the body will not, however diskomfort feeling the heat, the disabled and the decline of labor man himself feel bad (sustlashib) may be observed.

Hygenic standards of production microclimate. The norms of microclimate of production of the system of labor safety standards, "the microclimate of the work environment" are defined according to. They are based on the economic and technical foundations hygenic.

Industrial enterprises the character of the room, depending on the category of the tide and work in them, temperature, relative humidity and air movement are allowed to set the norms of the workplace.

Job categories is determined as follows: light physical work (category I) – sitting, standing or walking associated with in the case of fulfilled, but regular physical strain to carry the load or work that does not require energy consumption 150 kkal per hour (172 J. s), consists of. This part of the radio collection enterprise, the instrument is included in the same directory as clear and.

Average weight of physical work (category ii) – kkal per hour 150-250 (J. 172-293 S) enter the type of activity energy intensity term. Thus, constant walking

and heavy (10 kg) includes work that is associated with the transportation of cargo. For example, mechanical-yig'uv, it may include all of the work in the welding workshop.

Heavy physical work (category iii) – regular physical strain, in particular heavy loads (more than 10 kg), moving up to second place, a steady place to work from and related areas. Thus, the energy consumption per hour kkal 250 (j. 293 s) is high. Temirchi such work, foundry and other sex numbers can be done.

Temperature, relative humidity and speed of air movement and the amount that can be put in the way risoladagi normalangan the network tab. Risoladagi knew the amount of people and long term affects compatibility when the regular activity of the body's normal reaction to the external environment to maintain the condition of providing miqroiqlim kuchaytirmasdan and heat chapter summary understand them, to feel the heat that will arise in them and the ability to work to upgrade conditions. Microclimate conditions that can be put in the way of the body heat to change the status of the activity and physiological moslanish opportunities to adapt to a foreign environment that does not aside out that would eliminate that quickly and the severity of the reaction to the norms that held a summary of the microclimate indicators. Thus, health risks does not arise in the circumstances, but nomo'tadil the sensations of heat, deterioration of mood and work a decrease can be observed.

Norms of the organism in adaptation to the external environment not only to external conditions, but heavy labor-light order that may also generate heat without changing the amount related to related to be taken into account. Accordingly, in light work, heavy work and weight than the average, a speed of movement of the air be taken at somewhat high temperatures and somewhat less.

Season periods of the year that can be put in the way norms and switch from a cold (external air) from the average daily high temperature -10 pm (or in accordance with radio-low) constant in a large number of the work place to be changing somewhat out of the year, while increasing the temperature of the air in the hot time of sex (especially sex and heat conditions in central asia that can be

separated) clearly envisaged that it would be excessive hot. This will be difficult to lose heat along with a large amount of hot the external environment is associated with.

However, in this case, norms are also maximum limits in the way which is put (but not for the conditions of central asia). The separation of the heat in the air, the speed of movement of excessive also somewhat high sex is determined.

The standard small room in a large ministry, ajratilshning the heat and humidity together, or temperature and humidity constant temperature conditions, such as artificial methods to keep the stand in which takes into account the number and accuracy there are additional recommendations.

In addition to the mentioned norms in the workplace, the intensity of heat radiation at 300 kkal.of course, when m2 is high the air is necessary, it should be borne in mind that the construction of the toilet. Thus, the speed of movement and the temperature of the air issued to the seasons of the year, business of the category light and heat-a lot of least depends on the order. Place on heavy work if the temperature is high and air movement is so low.

### 4.3. The microclimate of the production environment.

The air of working zone of the environment of the microclimate parameters, namely temperature, humidity and speed of movement, activity and human health, significantly influencing the speed of change of pressure and calculation technique to work reliably barometrik, heat radiation, harmful substances the presence of aeroionlar, is characterized according to the powder. Xarakterliki summary of the effects of parameters specified in the conditions of production. The bad influence of a particular factor's work and breath palpitation, pressure, deterioration of the nervous system.

Basic normative documents GOST 12.1.005 microclimate-88 "Working zone to the air, sanitary-hygenic requirements", and Sanqib 2.2.3.538 and m-96 "production hygenic requirements to the microclimate in the room". Them to the seasons of the year in the category of works, the production of the heat out of looking at a room temperature, air movement, relative humidity and let

me'yorlangan optimal levels. Videoterminal (VD) and calculate the technique (HT) is the heat source located in the room, if the device calculation technique, lighting equipment, who work and solar radiation. The technique is to heat the main heat source of the device, the total average of 80% of lighting equipment an average of 12%, who work - 1% and solar radiation of 6%. Pale heat blocking structures lead the implementation of 1%.

The human body is a machine and his technical relative humidity of the air in the hall has a noticeable effect. 40% humidity swelling remains the basis of the fragility of magnetic tape, magnetic qalpoqcha yedirilishi of increased information means the occurrence of static electricity in the carrier, the deterioration of the ion composition of the room and the monitor screen. Normal working conditions to working in order to create a personal microclimate of the norms of the production set. Vd adjuvant ht in the room of the work place and the production which is temperature, air movement, relative humidity, put that way, must comply with the sanitary norms and optimal production levels of the room. Which is the main HT and vd (dispatching, operatorlik is to post kabina and management, halls of calculation technique) production and m in the room Sanqib 2.2.2.542-96, according to the optimal parameters of microclimate should be provided.

The optimal conditions influencing the microclimate of a long time and a regular person, body functional, allowing you to maintain the thermal condition consisting of a combination of microclimate parameters and the ability to work carrying.

Out of the cold seasons of the year air temperature +10 °c, in winter time - at +10 °c from the high period. You sit in category 1 views of physical strain, to work, running 120 kkal/s term spending energy work; 16 category a while to sit, stand, go taking views of access to work which physical strain, energy consumption 150 120 kkal/s. organizes. All educational institutions 55-62%. Relative humidity the optimum temperature 19-21°C is adopted.

Vd and the ht fills up with water every day to increase the humidity of the room air in order that it is recommended to apply namlagichlar. This action allows

the air to improve both the content of aero. The air including the content of his order aeroion improvements in all educational institutions from the next academic hour conditioning of each room and the ht vd compelled to allows. Degrees to decrease the temperature of the room during ventilation, a full share of air are considered.

**Aeroion air content.** Aeroion composition of the air has a significant effect on the condition of the user, but the ion content of the air concentration in the breathing were put in the way of borrower-level deviations from the risk of harm to health to the use of the recipient's 'poses. Increased access to physical views of ionlashuv gone and reduced harmful factor, therefore, sanitary-hygenic standards reglamentlanadi. Qutblanish quotation indicator with the ratio of positive and negative ions is important. Qutblanish p index is calculated by the following expression:

$$P=n- - n- /n+ + n- ,$$

here n+ and n - of positive and negative ions to the poles.

"Production of ion content in public areas and air-sanitary-hygenic standards were put in the way of levels (2152-80 CM) in both poles and ion qutblanish reglamentlaydi light performance.

The norms of harmful substances in air environment. Which included air-pull ventilation in the exposure, the increase in technical and other equipment used in the process of, and the interior is painted with polyvinylchloride and other harmful chemical compounds, harmful chemical compounds which will help to air out xaydab appear in the environment. SanQvaM 2.2.2.542-96, in accordance with the vd and auxiliary exposure means is located in the structure of harmful chemical compounds in the room air environment, "harmful compounds in the air of working zone is the last level of the let (YQOD) CM-4617-88, that is, must not exceed the amount specified in the sanitary norms.

Which is the main HT and vd (dispatching, operatorlik is to post kabina and management, halls of calculation technique) production of harmful chemical

composition of compounds in the room "Live the way of the air pollutants in the atmosphere of the place was put in the last level (CHEERFULLY)" 308 cm focusing-I should not exceed the amount shown in ' 84. Pre-school education institutions, higher and secondary special institutions in vd and ht room in the harmful chemicals in the air from the air in the average daily concentration should not exceed.

Common harmful substances in atmospheric air of work zone air environment stations live in and was put in the way of the last level (YQOD) the following is as follows: fenol - and from 0.01 to 0.3 mg/m3 , formal degi. - and 0,5 0,035 mg/m3 , for stirol – 10 and 0,04 mg/m3 . The actual concentration of these chemicals in the workplace of the user in the atmospheric air live points allowed in the last level (SHQOD)from 2.5-3 times less.

Technical measures of ensuring microclimate parameters. Normative parameters of the microclimate and the ht room in the vd in order to maintain air heating, ventilyatsiyalash, konditsionerlashtiriladi. The heating system in the cold seasons of the year from the level used to provide the desired temperature in the room. The heat pretty constant in the air (a night-in the daytime changes of 2-3°c), flat (in the horizontal direction, the temperature change per meter of length of 2°C from vertical in every meter of the room at a height of 1°c should not exceed). The loss of heat through the heating system of the room, building constructions, heating the incoming cold air to the inside and from the outside depending on material and equipment technology show in add if.

The set of machine hall and other rooms clean and to maintain the norms of microclimate parameters will apply it to provide ventilation. The design of machine hall ventilation system ventilyatsiyasi term for spending the amount of air in the air input device of the computer's aerodynamic, the air clean and the air distribution device to select aniqashdan. Which included air-pull ventilation can remove harmful substances out of the room, the air content in addition to improving aero, the meeting also attracts dust.

In particular, the particle size is up to 3 mkm vd and ht the amount of dust in the hall 0,75 mg/m3 should not exceed. The incoming air to the room avvalboshdan pollution, including dust and microorganisms using various filters should be cleaned. The amount of air that entered the technical-economic feasibility calculations and the choice of air exchange is determined by the system.

The books of account air exchange in the room from people who work, the car, the excess heat from solar radiation on the basis of external irradiation that out. Machine hall air with a minimum of two sharing the account in the amount of 60 m3 air per hour to a worker that will be the case when taking into account is conducted. Technics of work due to ozone separated in the process of breeding, breeding and registration documents should ensure the air exchange in the room five times per hour. Minimal air exchange per hour in the other room 1.5-2 times.

In the other room and machine hall air temperature is moderate, to keep that wet clean air and air pollution konditsionerlash system is used. Mo'tadillik exposure to the air environment, reliable operation, long information carrier means to keep the servants to work to create good conditions. The type of the system and technical means of providing clean air with the cooling air and the machine hall with two air regulating device konditsionerlangan konditsionerlangan zonali, consists of. This cooled air to the technique of calculation of shops under the threshold in the system from the technological to the hall towards the car from the air is given in an independent manner the internal bushliqda. The technique of calculation of the number located in the room of such a system many are used. Mixed type of calculation technique and of the machine hall of air in the system is given at a time to cool. Konditsionirlash air in the first place, machine rooms, and service and information carrier storage means, which is necessary for the room. In home conditions, mainly during the summer microclimate in the room with the necessary capacity to provide the use of household air conditioners, it gives a good effect.

# XULOSA

Axborot tizimlari va texnologiyalari yildan-yilga inson faoliyatining turli sohalarida yanada keng qo'llanilib kelmoqda. Ularni yaratish, ishga tushirish va keng qo'llashdan maqsad – jamiyat va inson faoliyatini axborotlashtirish borasidagi muammolarini xal etishdir.

Zamonaviy axborot-kommunikatsiya texnologiyalari imkoniyatlariga tayangan holda zamonaviy dasturlarni, mukammal o'quv-uslubiy materiallarni, o'quv-uslubiy majmualarni oliy o'quv yurtlarida yuqori malakali kadrlar tayyorlash jarayonida talabalarning mustaqil ta'lim olishlari uchun tayyorlash va yetkazib berish, bunday dastur va komplekslarning samarali usul va vositalarini elektoron variantda yaratish masalasi juda dolzarb muammo sanaladi. Bunday dastur va o'quv-uslubiy komplekslar o'rganuvchilarga fanni o'zlariga qulay vaqtda interaktiv tarzda o'rganishlariga katta yordam beradi. Elektron o'quv dasturlarni turli dasturiy vositalar yordamida turlicha ko'rinishda tayyorlash mumkin.

Bitiruv malakaviy ishida temir yo'l transportida ko'p qo'llaniladigan terminlardan foydalanildi va Android dasturi imkoniyatlaridan foydalangan holda o'ziga xos ilova yaratildi.

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical">
<TextView
android:id="@+id/idrussian"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:textSize="25dp"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textAlignment="center"
android:textColor="#000"

android:text="Temiryo'lterminlari" />
<ImageView
android:layout_marginRight="20dp"
android:layout_marginLeft="20dp"
android:layout_width="fill_parent"
android:layout_height="200dp"
android:src="@drawable/image"/>

<LinearLayout
android:id="@+id/linerLayout1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical">
<Button
android:id="@+id/iduz"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:layout_marginTop="20dp"
android:onClick="onClick"
android:text="O'zbekcha" />

<Button
android:id="@+id/idru"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:layout_marginTop="10dp"
android:onClick="onClick"
android:text="Русский" />

<Button
android:id="@+id/iden"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginLeft="20dp"
android:layout_marginRight="20dp"
android:layout_marginTop="10dp"
android:onClick="onClick"
android:text="English" />


</LinearLayout>
</LinearLayout>
Tilnitanlashoynakodi:
```

```java
package com.example.admin.tyt_terminlari;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.net.Uri;
import android.support.v4.app.ActivityCompat;


import android.view.View;
import android.widget.Toast;
public class MainActivityextends AppCompatActivity {

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
    }
public  void onClick(View view){
switch (view.getId()){
case R.id.iduz:
                Intent intent=new Intent(this,uz.class);
startActivity(intent);
break;
case R.id.idru:
                Intent intent1=new Intent(this,ru.class);
startActivity(intent1);
break;
case R.id.iden:
                Intent intent2=new Intent(this,en.class);
startActivity(intent2);
break;
        }

    }
}



<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical" >

<!-- Editext дляпоиска -->
<EditText android:id="@+id/inputSearch"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:hint="Qidiruv"
android:inputType="textVisiblePassword"/>

<!-- List View -->
<ListView
android:id="@+id/list_view"
android:layout_width="fill_parent"
android:layout_height="wrap_content" />

</LinearLayout>
```

**Asosiy dastur:**

```java
package com.example.admin.tyt_terminlari;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.HashMap;

import android.app.Activity;
import android.app.AlertDialog;
import android.content.Context;
import android.content.DialogInterface;
import android.content.DialogInterface.OnCancelListener;
import android.content.DialogInterface.OnClickListener;
import android.view.Menu;
import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Toast;

public class uzextends AppCompatActivity {

    final intDIALOG_EXIT = 1;
    // List view
    private ListViewlv;
    private String info;
    private String info1;
    // Listview Adapter
    ArrayAdapter<String>adapter;
    // EditTextвкоторомбудемискать
    EditTextinputSearch;
    // ArrayListдляListview
    ArrayList<HashMap<String, String>>productList;

    @Override
    public void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_uz);

        lv = (ListView) findViewById(R.id.list_view);

        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?>adapterView, View view, intposition,
            long l) {
                info1=(String)(lv.getItemAtPosition(position));
                intindex=  Arrays.asList(products).indexOf(info1);
                info=malumot[index];
                AlertDialog.Builder builder = new AlertDialog.Builder(uz.this);
                builder.setTitle(info1)
                        .setMessage(info)
                        .setCancelable(false)
                        .setNegativeButton("OK",
                new DialogInterface.OnClickListener() {
                    public void onClick(DialogInterface dialog, intid) {
                        dialog.cancel();
                    }
                });
```

```java
            AlertDialog alert = builder.create();
            alert.show();
            }

        });


        inputSearch= (EditText) findViewById(R.id.inputSearch);

        // ДобавляемданныедляListView
        adapter = new ArrayAdapter<String>(this, R.layout.list_item,
        R.id.product_name, products);
        lv.setAdapter(adapter);


        inputSearch.addTextChangedListener(new TextWatcher() {

        @Override
        public void onTextChanged(CharSequencecs, intarg1, intarg2, intarg3) {
        // Когда, юзеризменяеттекстонработает
        uz.this.adapter.getFilter().filter(cs);
            }

        @Override
        public void beforeTextChanged(CharSequence arg0, intarg1, intarg2,
        intarg3) {
        // TODO Auto-generated method stub

        }

        @Override
        public void afterTextChanged(Editable arg0) {
        // TODO Auto-generated method stub
        }
        });

    }


}
```