THE MINISTRY ON DEVELOPMENT OF INFORMATION TECHNOLOGIES AND COMMUNICATIONS OF REPUBLIC UZBEKISTAN

TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES NAMED AFTER MUHAMMAD AL-KHWARIZMI

« Access protection»

"SPP" head of the department

_____ Kerimov K.F

«_____»_____2018 y.

«Creating a mobile application that teaches English tenses» theme bachelor's degree

Graduate	_____ (signature)	Saidov M.A
Research advisor	_____ (signature)	Kamalov Sh.K
Experts	_____ (signature)	_____
Life Safety Issues consultant	_____ (signature)	_____

TASHKENT – 2018

THE MINISTRY ON DEVELOPMENT OF INFORMATION TECHNOLOGIES AND COMMUNICATIONS OF REPUBLIC UZBEKISTAN

TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES NAMED AFTER MUHAMMAD AL-KHWARIZMI

Faculty: «Software Engineering»
The department: «Systematic and practical programming»
Direction (specialty): «5330600-Software Engineering»

« I APPROVE »
Head of the department Kerimov K.F.
«_____» _____ 2018 y.

Saidov Mukimkhuja Alikhon ugli

graduation

T A S K

1. Subject of work: « Creating a mobile application that teaches English tenses ».

2. GW approved order: «   »   2018 y command №   .

3. Time limits for protection of works: 8.06.2018 y.

4. Getting started data: English language tutoring software, Java language and programming environments, object-oriented programming principles, templates, databases management, scientific and technical literature.

5. The content of the compilation and explanatory notes (list of topics to be developed): Introduction. Predmet field analysis and problem solving. Selection of software environment and analysis of tools. English tenses tutorial, user guides. Life activity safety. Summary. References and references. Applications.

6. List of graphic materials: Pictures, algorithm and block schemas, presentation slides from mobile application processes that teach English tenses.

7. Date assigned to work: 15.01.2018 y.

Leader:_____   I took the assignment:_____

(signature)   (signature)

8. Consultations on every part of the graduation work:

Section	Leader (full name)	Signature, time	
		Gave a work	**Take a work**
1. The main part 2. Ensuring the safety of life	Kamalov Sh.K.		

9. Schedule of work:

№	Names of graduation work chapters	Duration of execution	Leader's signator about the completion of the work
1.	Investigating and analyzing the theoretical knowledge, collecting relevant information and describing the subject matter.	15.01.18-15.02.18	
2.	Get acquainted with the principles, methods and stages of creating a user library, analyze and apply.	15.02.18-30.03.18	
3.	Create a user library and describe the steps. Developing User Guidelines.	30.03.18-15.05.18	
4.	Life activities safety	15.05.18-20.05.18	
5.	Summary. Prepare a presentation	20.05.18-25.05.18	

Bitiruvchi _____   «_____» _____ 2018 y.
        (signature)

Leader   _____   «_____» _____ 2018 y.
        (signature)

MAZMUNNOMA

Mazkur bitiruv ishi ingliz tili zamonlarini o'rgatuvchi mobil dastur tuzish mavzusiga bag'ishlangan. Dasturda foydalanuvchiga albatta interfaollikni taqdim etadigan, ya'ni inson va mobil qurilma o'rtasida buyruqlar va savol javoblar almashinuvini ta'minlab, dialog muhitini yaratadigan dasturiy mahsulot taqdim etiladi. Dasturning yaratilishida Ingliz tilining barcha 12 zamoni, har bir zamon uchun o'z formulalari, hamda bu formulalarga mols ravishda misollar keltirib o'tilgan.

АННОТАЦИЯ

Этот выпускной проект посвящен созданию мобильного приложения, предназначенного для обучения английскому языку. Программа предоставляет программное обеспечение, которое создает диалоговое окружение, обеспечивающее интерактивное взаимодействие между человеком и мобильным устройством, предоставление команд и обмен ответами и ответами. При создании программы все 12 периодов на английском языке имеют свои собственные формулы для каждого времени и примеры этих формул.

ANNOTATION

This graduation project is dedicated to creating a mobile application designed to teach English tenses. The program provides software that creates a dialog environment that ensures interactive interaction between the person and the mobile device, providing commands and question-and-answer exchange. In the creation of the program, all the 12 tenses in English have their own formulas for each time, and examples of these formulas.

Contents

INTRODUCTION

In the Republic, as in all spheres, a great attention is paid to the effective use of information technologies in the education system. Therefore, several laws, presidential decrees and resolutions on the development of information technologies have been adopted in our country. In particular, the Resolution of the President of the Republic of Uzbekistan «On Measures for the Further Implementation and Development of Modern Information and Communication Technologies» (March 21, 2012) and others. Design, development and use of e-books in the educational process has become a topical issue since many of them have been widely used in the field of education. Recently, various e-learning editions have been created to cover the range of simple hypertextbooks to complex systems of distance learning.

The purpose of the graduation exams is to study the ways of using information and communication technologies in the learning process; study software production technologies; Creating a mobile tutorial for the English language, and formulating and implementing multimedia products in the database.

Object of research and subject: Get acquainted with the importance of software product. Working with Android Studio Environment. Java programming language and projects can be created. Get acquainted with database management systems. Working with SQL queries and learning it perfectly. Get acquainted with the SQL Server environment. Develop a database database project in SQL Server. Working with queries, using it in Java, and applying the created MB to the program.

Purpose and tasks of work: Comparative analysis of educational products. Studying methodological bases and stages of creation of teaching aids in mobile devices; study ways to create information resources on mobile devices; development of a visualized program based on international experience. Collect enough literature on the topic. Work with Android Studio and Java programming language. Learn SQL queries. Using a Microsoft SQL Server environment.

Explore links and regular forms between tables. Writing SQL queries and applying them to the Java language. Creating a database and user interface in the program.

Research Methods and Techniques: Java dasturlash tilini imkoniyatlarini ko'rsatish, zamonaviy texnologiyalardan foydalanish. Zamonaviy dasturlash usullaridan foydalanish. Ma'lumotlar bazasini boshqarish tizimlarini imkoniyatlaridan foydalanish va yaratilgan MB dasturda to'laqonli ishlatish.

Size and structure of the work: Introduction consists of three chapters, an introduction, a list of publications used. Chapter I Theoretical foundations for the development of the English language curriculum, including the use of mobile devices and the use of software on mobile platforms. Use multimedia software for creating educational content. In the development of mobile applications, the operational and technical requirements were considered. Part II Preparation of a technical project for the creation of the English language curriculum. Creating software algorithm. Part III Provides information on how to use the program that describes the English Language Teaching Program and its capabilities, as well as instructions for using the program.

I CHAPTER. MULTIMEDIA PROGRAMS IN THE TABLE

1.1. Multimedia tools and their use

Multimedia tools are a set of technical and software tools that enable a person to communicate with the computer using the natural environment: audio, video, graphics, texts, animation, and more. Multimedia is a rapidly developing modern information technology. Its distinguishing marks include:

a) Different types of information: Traditional (text, tables, decorations, etc.), original (music, video clips, telecast, animation, etc.) integration into one software product. This integration can be done by computer-controlled electronic recording of various types of data recording and mirroring: microphones, audio systems, optical CDs, television, video recorders, camcorders, etc.

b) Unlike text and graphics that are static in their nature, audio and video are only considered at a specific time interval. The central processor for fast and easy access to video and audio information on the computer is the ability of the data transmission tire, the capacity for fast and video memory (mass memory), volume and PC the speed of exchange of input and output channels is about doubled;

v) A new level of interactive dialogue between «human and computer», in which the user has a broader and more comprehensive information that can improve learning, work or leisure. Training of pupils and retraining of personnel on the basis of multimedia tools is one of the topical issues of today. The concept of multimedia came into our lives in the early 85's. What is his question about him? Many experts analyze this term differently. In our opinion, multimedia is a combination of audio, video, text, graphics and animation (object space movements) on the basis of the programmatic and technical means of informatics, in a comprehensible form of delivery of educational materials to students.

Nowadays, every computer sold is not available without multimedia content. Attempts to broaden the scope of the computer science in the 1970s were largely due to the low productivity of computers. Practice shows that learning

multimedia tools is twice more effective and can be delayed. Up to 30% of the time spent on learning multimedia tools can save time, and the knowledge gained will stay in memory for a long time. If the reader accepts the content (video), the memory of the memory will increase by 25-35%. Additionally, the content of the audio, video and graphics are intensified, and the memory of the material increases by 75%. We have reiterated this in the process of studying foreign languages on the basis of multimedia tools.

Teaching students through multimedia tools has the following advantages:

1) the materials can be deeper and better absorbed;

2) the desire to communicate closely with new areas of education:

3) the ability to save time as a result of the time spent studying;

4) The knowledge gained in the memory is kept indefinable and practically used in practice.

It is worth mentioning that, for example, the IMF, such as the World Monetary Fund, the Universal Bank, and the European Union Commission, have extensive experience in retraining.

On the spot, there are some objective problems with the widespread use of multimedia tools. The most important of these is the production of computer programs as a guide for learning materials, laws and other guidelines for students. The use of multimedia components in developed computer applications requires the use of compact discs. Today, CDs of this type are not available in our country. They require advance payment of a certain amount of money.

In our opinion, the extensive use of modern computer technology in the process of training and retraining of pupils will further develop the qualified and highly qualified specialists.

Distant learning is one of the most-current trends in today's education, with teachers and students being trained at a distance. The fact that the teacher and the student are in a particular situation requires that the teacher organize educational activities on the basis of computers such as computers, satellite communication,

cable television. Rapid development of modern computer technologies, especially the development of information channels, contributes to specific historical developments in the telecommunications sector. By bringing together all the educational institutions and companies involved in business in the remote form, it leads to a higher level of teaching and business operations.

Distant learning techniques include the following technologies:

Interactive technologies:

- audioconferences;

- videoconferences;

- videoconferences on your desktop;

- electronic conferences;

- voice communications;

- two-way satellite communication;

- virtual existence;

Non-Interactive Technology:

- printed materials;

- audiocassettes;

- video cassettes;

- one-way satellite communication;

- television and radio broadcasts;

- floppy disks and CD-ROMs.

First of all, it was designed for distance learning, geographically remote schools and academic education. However, the development of modern information and telecommunication technologies has led to the development of natural teaching processes. As a result, distance learning techniques have been widely used in many schools, traders and industrial enterprises, and have been instrumental in applying new teaching styles. An analysis by the International Council on Distant Learning shows that more than 10 million students worldwide are currently studying this method. In the United States, new training centers are

being set up to teach this technique. Thus, they are moving forward to prepare and retrain national personnel on time.

The distant style has the following advantages:

a) Creative learning environment. On the basis of many available methods, the teacher teaches the student, and the reader only reads the material. On the basis of the recommended distance learning method, the students themselves will find the information they need from a computerized information bank and exchange their experiences with others on an e-network basis. This ensures that learners communicate well with others and encourage them to receive such coaching.

b) Independent learning opportunities. Distant-based teaching includes the stages of primary, secondary, university, correspondence, and upgrading. Various level inspectors can work on their own schedules and communicate with students at their own level.

c) Significant changes in the workplace. Distant-based teaching creates favorable conditions for millions of people and for those without learning to work. In this way, teaching can play a very important role in the training of staff, ie, without geographical and financial difficulties, it can gain knowledge.

d) A new and effective tool for teaching and learning. Statistical data suggests that distance learning can be as effective as learning from production. In addition, distance-based learning is also avoided by the university. The advantage of students or students on this basis over others is that they are provided with the best quality materials and teachers. Based on the teaching and learning methodology, a teacher should be free of the learning environment in the classroom. Based on the distant learning curriculum, tax inspectors can travel internationally through the internet. At the same time, the change in the teaching methodology must also change.

Currently, the Direct Access Internet Access Service is used on an e-mail, computer conferences and electronic data base for remote learning. The development of an information hot channel provides a new hypermedia system that

combines three main Internet access services and helps to further enhance the user interface. For instance, availability of digital technologies, conferencing and multimedia computers has allowed for video conferencing through the Internet. Thus, such a giant informational network creates enormous opportunities for the readers to have a modern knowledge based on their distance learning, regardless of their time or place.

Nowadays, the emergence of computer-aided reproduction of sound and image, which is commonly used for the processing of texts and mathematical formulas, undoubtedly affects all human activity.

1.2. Using mobile applications in mobile devices

A mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer. Mobile applications frequently serve to provide users with similar services to those accessed on PCs. Apps are generally small, individual software units with limited function. This use of app software was originally popularized by Apple Inc. and its App Store, which offers thousands of applications for the iPhone, iPad and iPod Touch. A mobile application also may be known as an app, web app, online app, iPhone app or smartphone app. Mobile applications are a move away from the integrated software systems generally found on PCs. Instead, each app provides limited and isolated functionality such as a game, calculator or mobile web browsing. Although applications may have avoided multitasking because of the limited hardware resources of the early mobile devices, their specificity is now part of their desirability because they allow consumers to hand-pick what their devices are able to do.

The simplest mobile apps take PC-based applications and port them to a mobile device. As mobile apps become more robust, this technique is somewhat lacking. A more sophisticated approach involves developing specifically for the mobile environment, taking advantage of both its limitations and advantages. For example, apps that use location-based features are inherently built from the ground

up with an eye to mobile given that the user does not have the same concept of location on a PC. If you have a smart phone or other mobile device, you probably use apps – to play games, get turn-by-turn directions, access news, books, weather, and more. Easy to download and often free, mobile apps can be so much fun and so convenient that you might download them without thinking about some key considerations: how they're paid for, what information they may gather from your device, or who gets that information. You can access the internet using a data plan tied to your phone service, or through a Wi-Fi hotspot. Phone companies generally charge a monthly fee for a data plan that can connect you to the internet.

Wi-Fi connections usually are faster, but you have to be in range of a hotspot to use one. Most public Wi-Fi hotspots – like those in coffee shops, airports, and hotels – don't encrypt the information you send over the internet and are not secure. Get tips for using public Wi-Fi. To set up a home wireless network, you'll need to pay for internet access and a wireless router, and you'll want to take steps to secure the network. When you sign up with an app store or download individual apps, you may be asked for permission to let them access information on your device. Some apps may be able to access:

- your phone and email contacts
- call logs
- internet data
- calendar data
- data about the device's location
- the device's unique IDs
- information about how you use the app itself

Some apps access only the data they need to function; others access data that's not related to the purpose of the app.

Remember that someone may be collecting data on the websites you visit, the apps you use, and the information you provide when you're using the device – whether it's the app developer, the app store, an advertiser, or an ad network. And

if they're collecting your data, they may share it with other companies. If you are concerned about how your information is being shared, check the "privacy" settings on your device or look for ways to "opt-out" of data collection in the app privacy policy.

It's not always easy to know what data a specific app will access, or how it will be used. Before you download an app, consider what you know about who created it and what it does. The app stores may include information about the company that developed the app, if the developer provides it. If the developer doesn't provide contact information – like a website or an email address – the app may be less than trustworthy.

If you're using an Android operating system, you will have an opportunity to read the "permissions" just before you install an app. Read them. It's useful information that tells you what information the app will access on your device. Ask yourself whether the permissions make sense given the purpose of the app; for example, there's no reason for an e-book or "wallpaper" app to read your text messages.

Some apps use specific location data to give you maps, coupons for nearby stores, or information about who you might know nearby. Some provide location data to ad networks, which may combine it with other information in their databases to target ads based on your interests and your location.

Once an app has your permission to access your location data, it can do so until you change the settings on your phone. If you don't want to share your location with advertising networks, you can turn off location services in your phone's settings. But if you do that, apps won't be able to give you information based on your location unless you enter it yourself.

Your phone uses general data about its location so your phone carrier can efficiently route calls. Even if you turn off location services in your phone's settings, it may not be possible to completely stop it from broadcasting your location data. Developers want to provide their apps as inexpensively as possible

so lots of people will use them. If they sell advertising space in the app, they can offer the app for a lower cost than if it didn't have ads. Some developers sell space in their apps to ad networks that, in turn, sell the space to advertisers. Your phone may indicate when updates are available for your apps. It's a good idea to update the apps you've installed on your device and the device's operating system when new versions are available. Updates often have security patches that protect your information and your device from the latest malware. Most app stores include user reviews that can help you decide whether to download. But some app developers and their marketers have posed as consumers to post positive comments about their own products. In fact, the Federal Trade Commission recently sued a company for posting fake comments about the apps it was paid to promote.

1.3. Use multimedia when creating educational content

Today, the most popular theme is to create a multimedia project. Here everyone can demonstrate his creative personality, intelligence, knowledge and subtle taste. Unfortunately, multimedia projects can not be prepared without presentation preparation and database creation and programming, but there are specific software that can study their processing technology and have multifunctional processing tools.

We teach you to do this with practical software tools. Not just how you use tools, but also the technology of creating multitimedia products. What is a multimedia product? It is very similar to a documentary, but it is a product that is available on the computer. There are music, color effects, motion and animation, and sound. What is the main thing in your multimedia product? As in every film, this is a scenario. You have to be a screenwriter, a director, a painter, and an operator at the same time. Electronic textbooks This tutorial is a collection of compact discs, utilizing special software to help you make the book easy to use. It is important that the information provided in the preparation of electronic textbooks be accessible, interesting and relevant to users. Not only does it focus on the subject, but it also needs to learn how to present it in pieces according to the

mobile device screen area. As a director and artist, you need to think of each frame and its relationship. Predictingly you will need to create separate slides, fragments and databases. Only then can it be possible to trace all of the pre-made tracks. When it comes to device encyclopedias, electronic textbooks, programs for recreation and learning, and much more, nowadays a great deal of attention is paid to creating a multimedia product.

What is a multimedia product?

First, it is a software product that creates a dialog environment, providing interactive content for the user, that provides teams and question-and-answer exchange between a person and a computer.

Second - an environment where various video and audio, animation effects are used. It reminds the viewer of a video that allows him or her to choose a script. Multimedia product - an interactive, computer-generated product that can include music, video clips, animations, graphics and slide gallery, various databases and more. Multimedia products can be divided into:

* Encyclopedias;

* Teaching applications;

* Thinking Software;

* Software for Children;

* Games.

In recent years, multimedia products have become more affordable. Their use is not always the same. When buying various multimedia equipment you should pay attention to the following indicators:

* Quality and reliability of the material provided;

* Quality of the given graphic material;

* Voice guitar (text, musical ornaments etc.);

* Video content and its quality;

* Interactivity (viewing in different directions, in-depth study, printing, etc.);

* Friendly interface.

Not all ready-made multimedia products meet these requirements, and your personal interests may differ from those recommended by the authors. In this case, you can develop your own software product that opens the topic you selected and create your own custom interface. Multimedia product development

Despite the difficult and costly process, not only programmers, but also many artists and designers are doing this work.

To create a multimedia product, you can:

It requires working with a team of qualified programmers

programming language. Instrumental tools, such as Macromedia Director, Formula GraphicsMultimedia System, Multimedia Creator, Asymetrix ToolBook, AuthorWare Professional, and more. Projects created in this way are somewhat cheaper and therefore not as universal, and the tools they use are limited, but skilled users can work with these tools.

Multimedia software for educational purposes can be developed using Microsoft Office software, and for the preparation of materials, you can use PhotoShop, Adobe Premier or Vstudio2 (Video Recording), Stoik Software (Image Processing and Morphing) audio recording and reproduction). The mobile software products often contain content that you can use, such as Access or Works. A picture or clip presentation is accomplished by using PowerPoint. Interviews are used to help you get more details. First of all, you can create a Mobile Project that will teach you, and you can develop lessons or thematic encyclopedias (music, favorite artists, celebrity artists, cinema news, etc.) on specific themes. You need to have three types of software:

* Preparation of material that should be included in the multimedia product;

* product self creation.

* Application of the product.

General Explanation of Material Design Software The material included in the multimedia product may be presented in the form of images, audio, and video recordings. These are different types of information available on their software

tools, which have the tools to work. Below are some of the relatively popular software products for different types of data. Graphic Objects When working with graphic objects, you need to distinguish two forms of activity: scanning and creating images. Multimedia tools are a set of technical and software tools that enable a person to communicate with the computer using the natural environment: audio, video, graphics, texts, animation, and more.

Teaching students through multimedia tools has the following advantages:

a) the materials are deeper and more accessible;

b) the desire to engage more closely with new areas of education:

c) achieving time-savings as a result of curriculum downtime;

g) The knowledge gained will be kept in memory for a long time and practiced in practice.

The most important feature of mobile technology is its ability to influence the user in the work of interactive media. Over the last several years, many mobile software products have been created and created: encyclopedias, instructional programs, computer presentations, and more.

Mobile technology allows you to manage information, which can be interactive. Mobile applications provide direct access to information. The user sees all the information provided and can use all of his interests. Receiving material does not require much time and effort.

Unlike other formats of multimedia data, multimedia software can include thousands of pages of text, thousands of images and images, audio and video recordings, animations and three-dimensional graphics for up to a few hours, ensures that the duration of its use and storage is substantial. The sincere presentation is the only and most modern form of information delivery today. These text information, pictures, slideshow, voice-enhanced audio, videotapes and animation, three-dimensional

graphics software. Presentation Information the main difference from other forms of presentation is their content enrichment and interactivity, ie the tendency

to change in the established format and the attitude towards user activity. In addition, the presentation can also be your site's key. That is, when you have Internet access, you can get the latest information from the company's website by simply clicking the mouse over the presentation.

Multimedia technologies (multi - media, media) allow you to use multiple methods of information simultaneously: text, graphics, animation, video tape and sound. The most important feature of multimedia technologies is its ability to influence the user in the interactive media environment. Over the past few years, many mobile software products have been created and created: encyclopedias, instructors, presentations, and more.

II CHAPTER. LEVELS OF CREATING MOBILE APPLICATION WHICH TEACHES ENGLISH TENSES

2.1. Software IDE environments

An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools, and a debugger. Most modern IDEs have intelligent code completion. Some IDEs, such as NetBeans and Eclipse, contain a compiler, interpreter, or both; others, such as SharpDevelop and Lazarus, do not. The boundary between an integrated development environment and other parts of the broader software development environment is not well-defined. Sometimes a version control system, or various tools to simplify the construction of a graphical user interface (GUI), are integrated. Many modern IDEs also have a class browser, an object browser, and a class hierarchy diagram, for use in object-oriented software development. Integrated development environments are designed to maximize programmer productivity by providing tight-knit components with similar user interfaces. IDEs present a single program in which all development is done. This program typically provides many features for authoring, modifying, compiling,

deploying and debugging software. This contrasts with software development using unrelated tools, such as vi, GCC or make.

One aim of the IDE is to reduce the configuration necessary to piece together multiple development utilities, instead providing the same set of capabilities as a cohesive unit. Reducing that setup time can increase developer productivity, in cases where learning to use the IDE is faster than manually integrating all of the individual tools. Tighter integration of all development tasks has the potential to improve overall productivity beyond just helping with setup tasks. For example, code can be continuously parsed while it is being edited, providing instant feedback when syntax errors are introduced. That can speed learning a new programming language and its associated libraries. Some IDEs are dedicated to a specific programming language, allowing a feature set that most closely matches the programming paradigms of the language. However, there are many multiple-language IDEs.

While most modern IDEs are graphical, text-based IDEs such as Turbo Pascal were in popular use before the widespread availability of windowing systems like Microsoft Windows and the X Window System (X11). They commonly use function keys or hotkeys to execute frequently used commands or macros. Visual programming is a usage scenario in which an IDE is generally required. Visual Basic allows users to create new applications by moving programming, building blocks, or code nodes to create flowcharts or structure diagrams that are then compiled or interpreted. These flowcharts often are based on the Unified Modeling Language.

This interface has been popularized with the Lego Mindstorms system, and is being actively pursued by a number of companies wishing to capitalize on the power of custom browsers like those found at Mozilla. KTechlab supports flowcode and is a popular opensource IDE and Simulator for developing software for microcontrollers. Visual programming is also responsible for the power of distributed programming (cf. LabVIEW and EICASLAB software). An early

visual programming system, Max, was modeled after analog synthesizerdesign and has been used to develop real-time music performance software since the 1980s. Another early example was Prograph, a dataflow-based system originally developed for the Macintosh. The graphical programming environment «Grape» is used to program qfix robot kits.

This approach is also used in specialist software such as Openlab, where the end users want the flexibility of a full programming language, without the traditional learning curve associated with one. Integrated development environments, or IDEs, are software platforms that provide programmers and developers a comprehensive set of tools for software development in a single product. IDEs are built to work with specific application platforms and remove barriers involved in the lifecycle of software development. IDEs are used in development teams to build new software, apps, web pages, and services, and they help by providing one tool with all the features and removing the need for integrations. IDEs are for programming code to a specific platform or platforms, and have integrated features that know how the platform works and how to use the features of the platform through compiling code, debugging code, or intelligently completing code automatically. The best Integrated Development Environment (IDE) Software products are determined by customer satisfaction (based on user reviews) and market presence (based on products' scale, focus, and influence) and placed into four categories on the Grid:

- Products in the Leader quadrant are rated highly by G2 Crowd users and have substantial Market Presence scores. Leaders include: NetBeans, Visual Studio, Adobe Flash Builder, Eclipse, IntelliJ IDEA, WebStorm, Xcode, PyCharm, PhpStorm, and Arduino IDE

- High Performers are highly rated by their users, but have not yet achieved the Market Presence of the Leaders. High Performers include: RubyMine, BlueJ, Flashdevelop, MyEclipse, Selenium IDE, CLion, Visual LANSA, and DataGrip

- Contenders have significant Market Presence and resources, but have received below average user Satisfaction ratings or have not yet received a sufficient number of reviews to validate the solution. Contenders include: Codenvy, Monodevelop, Oracle JDeveloper, and ColdFusion Builder

- Niche solutions do not have the Market Presence of the Leaders. They may have been rated positively on customer Satisfaction, but have not yet received enough reviews to validate them. Niche products include: Komodo IDE, Aptana Studio, Code::Blocks, Rational Application Developer for WebSphere Software, Nuclide, Qt Creator, and Visual Studio App Center.

When describing the programming environment, it means that exactly where you want to write the code you are writing. For example, a simple «Notepad» can also function as an IDE. In the IDE, the sum of programs or programs is used. Examples of modern and popular programming environments (Windows system)

* PHPStorm - primarily for PHP developers;

* VisualStudio - for .NET developers;

* NetBeans - primarily for Java, php developers;

* PHPDesigner - primarily for web (PHP) developers;

The better and more comfortable the IDE, the faster and better your business will be. In perfect programming environment, developers are provided with all the conditions that require no additional software to create a project, such as the following options:

* Text Editor;

* Compiler and Interpretator;

* Automated collector of all parts of the project (Сборщик);

* Error detection function;

* A library that helps you to write code syntax;

* Code to use (emulators, browsers);

* Terminal (for console);

* Reverse module (github);

* Catalog hierarchy;

It is true that such software environments make the programmers a bit lazy, but if you want to build a quick project, it will take a long time. Programming environments can be either free or cost free, like other programs. Depending on the programming language, the required IDE will be selected, and I will use the Sublime text editor for the web (for some reason), Visual Studio for .NET programming.

IDE (Integrated Operating Environment) - Every programming language will have its own working environment. In this environment, the compiler will be the place to write code. In this work environment, some software code can also be written, and this environment also indicates machine gun errors. There are certain libraries in this working environment, and certain code is displayed to code correctly when writing code. An example of a simple notebook is a working environment, but this environment does not have a compiler, so a separate compiler is installed. At the same time, you need to install 2 programs together. To simplify these two tasks, many work environment programs have been created and integrated with the compiler.

Eclipse is a programming environment designed to build programs with a variety of programming languages, with extensive workarounds. Eclipse programming environment is a product of Eclipse. Eclipse environment is designed to work on different platforms, Windows, Linux, and Mac OS. Eclipse versions are different for different OSs, but their purpose is the same.

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as primary IDE for native Android application development.

Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.1 released in March 2018

2.2. Android Studio software and its features

Android Studio supports all the same programming languages of IntelliJ, and PyCharm e.g. Python, and Kotlin; and Android Studio 3.0 supports «Java 7 language features and a subset of Java 8 language features that vary by platform version.» External projects backport some Java 9 features.

Criterion	Description
OS version	Microsoft® Windows® 7/8/10 (32-bit or 64-bit), 64-bit required for native debugging Mac® OS X® 10.10 (Yosemite) or higher, up to 10.13 (macOS High Sierra) GNOME or KDE desktop Linux (64 bit capable of running 32-bit applications)(GNU C Library (glibc) 2.19+)
RAM	3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
Disk space	2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
Java version	Java Development Kit (JDK) 8
Screen resolution	1280×800 minimum screen resolution

2.2. Figure 1. Criterion and description

Android Studio sets up new projects to deploy to the Android Emulator or a connected device with just a few clicks. Once your app is installed, Instant Run allows you to push code changes without building a new APK.

To build and run your app, select **Run > Run** in the menu bar (or click **Run** in the toolbar). If it's the first time running the app, Android Studio asks you to select a deployment target as shown in figure 1. Select a device to install and run your app.
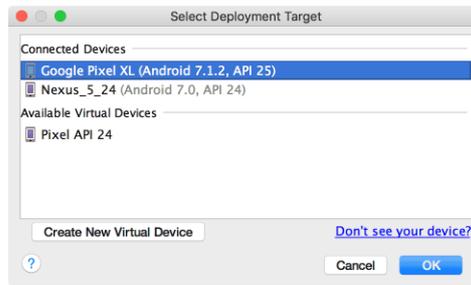
2.2. Figure 2. The Select Deployment Target

The Select Deployment Target dialog shows available devices, If the dialog says, «No USB devices or running emulators detected,» then you need to set up and connect your device or launch an emulator by clicking a device listed under Available Virtual Devices. If there are no virtual devices listed, click Create New Virtual Device and follow the Virtual Device Configuration wizard (see Create and Manage Virtual Devices).

To display the Select Deployment Target dialog, either deselect Use same device for future launches or stop the app with Run > Stop *app* or Stop ■, and then start it again.

When you run your app for the first time, Android Studio uses a default run configuration. The run configuration specifies the module to run, package to deploy, activity to start, target device, emulator settings, logcat options, and more.

The default run/debug configuration launches the default project activity and uses the Select Deployment Targetdialog for target device selection. If the default settings don't suit your project or module, you can customize the run/debug configuration, or even create a new one, at the project, default, and module levels. To edit a run/debug configuration, select Run > Edit Configurations. For more information, see Create and Edit Run/Debug Configurations. By default, Android Studio builds the debug version of your app, which is intended only for use during development, when you click Run.

To change the build variant Android Studio uses, select Build > Select Build Variant in the menu bar (or click Build Variants 🤖 in the tool windows bar), and then select a build variant from the drop-down menu. By default, new projects are

set up with two build variants: a debug and release variant. You need to build the release variant to prepare your app for public release.

To build other variations of your app, each with different features or device requirements, you can define additional build variants.

Menu Item	Description
Make Module	Compiles all source files in the selected module that have been modified since the last build, and all modules the selected module depends on recursively. The compilation includes dependent source files and any associated build tasks. You can select the module to build by selecting either the module name or one of its files in the Project window. This command does not generate an APK.
Make Project	Makes all modules.
Clean Project	Deletes all intermediate/cached build files.
Rebuild Project	Runs Clean Project for the selected build variant and produces an APK.
Build APK(s)	Builds an APK of all the application modules in the current project for their selected variant. When the build completes, a confirmation notification appears, providing a link to the APK file and a link to open it in APK Analyzer. If the build variant you've selected is a debug build type, then the APK is signed with a debug key and it's ready to install. If you've selected a release variant, then, by default, the APK is unsigned and you must

	manually sign the APK. However, you can instead configure the build process to automatically sign your APK.
	All built APKs are saved in *project-name*/*module-name*/build/outputs/apk/.
Generate Signed APK	Brings up a dialog with a wizard to set up a new signing configuration. For more information, see Sign an APK.

You can view details about the build process by clicking **View > Tool Windows > Build** (or by clicking **Build** ⬇ in the tool window bar). The window displays the tasks that Gradle executes in order to build your app, as shown in figure 2.
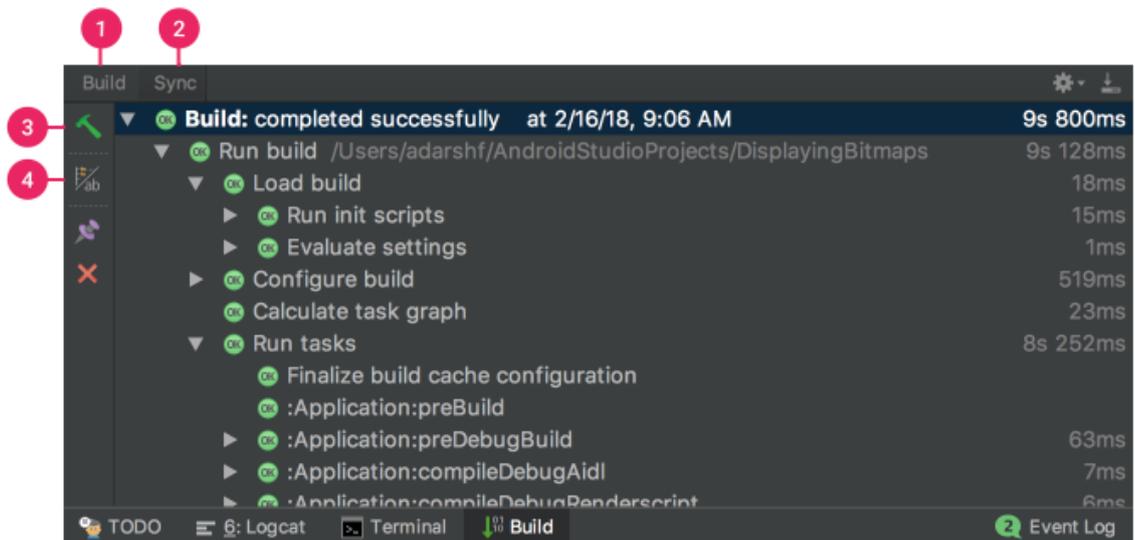
2.2. Figure 3. The Build output window in Android Studio

1. Build tab: Displays the tasks Gradle executes as a tree, where each node represents either a build phase or a group of task dependencies. If you receive build-time or compile-time errors, inspect the tree and select an element to read the error output, as shown in figure 3

below.
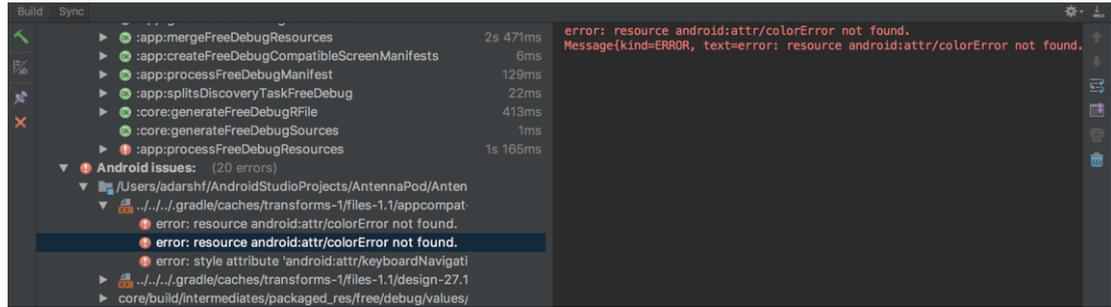
2.2. Figure 4**.** Inspect the Build output window for error messages

2. Sync tab: Displays tasks that Gradle executes to sync with your project files. Similar to the Build tab, if you encounter a sync error, select elements in the tree to find more information about the error.

3. Restart: Performs the same action as selecting Build > Make Project by generating intermediate build files for all modules in your project.

4. Toggle view: Toggles between displaying task execution as a graphical tree and displaying more detailed text output from Gradle—this is the same output you see in the Gradle Console Gradle Console window on Android Studio 3.0 and earlier.

If your build variants use product flavors, Gradle also invokes tasks to build those product flavors. To view the list of all available build tasks, click View > Tool Windows > Gradle (or click Gradle in the tool window bar).

If an error occurs during the build process, Gradle may recommend some command-line options to help you resolve the issue, such as --stacktrace or --debug. To use command-line options with your build process:

1. Open the Settings or Preferences dialog:

   - On Windows or Linux, select File > Settings from the menu bar.

   - On Mac OSX, select Android Studio > Preferences from the menu bar.

2. Navigate to Build, Execution, Deployment > Compiler.

3. In the text field next to *Command-line Options*, enter your command-line options.

4. Click OK to save and exit.

Gradle applies these command-line options the next time you try building your app.

In Android Studio 2.3 and higher, Instant Run significantly reduces the time it takes to update your app with code and resource changes. After deploying your app to a target device running Android 5.0 (API level 21) or higher, you can click Apply Changes to push certain code and resource changes to your running app without building a new APK—and, in some cases, without even restarting the current activity. The Run and Debug buttons are always available to you when you want to push your changes and force an app restart. However, you may find that using the Apply Changes button provides a faster workflow for most incremental changes to your app. The Apply Changes action is available only when you meet the following conditions:

- Build your app using a debug build variant.
- Use Android plugin for Gradle version 2.3.0 or higher.
- Set minSdkVersion to 15 or higher in your app's module-level build.gradle file.
- Deploy your app to a target device running Android 5.0 (API level 21) and higher.

For more information about enabling Instant Run, go to the section about configuring your project.

Instant Run pushes your changes by performing a *hot swap*, *warm swap*, or *cold swap*—the type of swap it performs depends on the type of change you made. When you click Apply Changes after making a code or resource change to your running app, Instant Run automatically determines the best way to push your change to the target device, as described in the following table.

Clicking Run (or Debug) forces a cold swap and an app restart. If you make a change to the app manifest or a resource referenced by the manifest, Android Studio always pushes your changes with a full APK reinstall.

When performing a hot swap, your app keeps running but Android Studio automatically restarts the current activity. To disable this default setting:

1. Open the Settings or Preferences dialog:

   - On Windows or Linux, select File > Settings from the menu bar.
   - On Mac OSX, select Android Studio > Preferences from the menu bar.

2. Navigate to Build, Execution, Deployment > Instant Run.
3. Uncheck the box next to Restart activity on code changes.

If automatic activity restart is disabled, you can manually restart the current activity from the menu bar by selecting Run > Restart Activity.

The Android Emulator simulates various Android phone, tablet, Wear OS, and Android TV devices on your computer. It comes with predefined configurations for popular device types and can transfer data faster than a device connected over USB.

The Android Emulator provides almost all the capabilities of a real Android device. You can simulate incoming phone calls and text messages, specify the location of the device, simulate different network speeds, simulate rotation and other hardware sensors, access the Google Play Store, and much more. Each instance of the Android Emulator uses an Android Virtual Device (AVD) to configure its size, form factor, Android version, and various hardware characteristics. To effectively test your app, you should create an AVD that models each device type that your app is designed to support.

Each AVD functions as an independent device, with its own private storage for user data, SD card, and so on. By default, the emulator stores the user data, SD card data, and cache in a directory specific to that AVD. When you launch the emulator, it loads the user data and SD card data from the AVD directory.

To install an APK file on the emulated device, drag an APK file onto the emulator screen. An APK Installer dialog appears. When the installation completes, you can view the app in your apps list.

To add a file to the emulated device, drag the file onto the emulator screen. The file is placed in the /sdcard/Download/ directory. You can view the file from Android Studio using the Device File Explorer, or find it from the device using the Downloads or Files app, depending on the device version. Use your computer mouse pointer to mimic your finger on the touchscreen; select menu items and input fields; and click buttons and controls. Use your computer keyboard to type characters and enter emulator shortcuts. A number of external factors can cause the Android Emulator to begin running slowly after an update. To begin troubleshooting, we recommend the following steps:

- If you are running Android Emulator on Windows, check to see if you have installed Windows UpdatesKB4013429 and KB4015217. Some users reported improved Android Emulator performance after uninstalling these updates. Users also reported improved Emulator performance after *installing* Windows Update KB4015438.

- If you have an Intel GPU (and in particular, the Intel HD 4000), ensure you have downloaded and installed the latest Intel graphics driver.

- If your machine has both an Intel HD 4000 GPU and a discrete GPU, disable the Intel HD 4000 GPU in Device Manager to ensure you are using the discrete GPU.

- Try running the emulator using the -gpu angle, -gpu swiftshader, or -gpu guest modes. For more information about configuring graphics acceleration options on the command line, see Configure Hardware Acceleration.

- Ensure that your router is not using IPv6 addresses if you do not have an IPv6 connection.

If you are still experiencing problems with the Android Emulator running slowly, Report a Bug, including the necessary Android Emulator Details so we can investigate.

In recent years, the JAVA language and its associated environment - the .NET platform - is still the main technology for software developers. It is possible to create optional programs that can be created in the Windows environment through the .NET platform. JAVA is a new language and has been developed with special features for this environment. Using the JAVA language, you can create dynamic WEB pages, software created by deployment technology, database components, or split windows applications. With JAVA, you can create a volunteer program on the Windows platform, with the exception of network or Internet programs.

JAVA language is directly related to C, C ++ and Java, the most widely used and widely used languages in the world. At present, practitioners all know the language, so the transition to JAVA based on them happens without much trouble. As Hewley, C ++, and Java, he did not «explore the wheel», but went astray - essentially focusing on innovation and focusing on the previously created language.

Communication between JAVA and Java is relatively complex. Both languages are designed to create a passcode, based on C and C ++, using their syntax and object model. However, there is no direct connection between these languages, but they are similar to cousins with more common ancestors, but with many signs. If you know how to work in Java, it will make it easier to master Java, and vice versa, many of the concepts of JAVA are useful for learning Java.

The JAVA language has many innovative features that are discussed in this section. It may well be that one or several of the most important news are relevant to the support of software components. In other words, JAVA was originally designed as a language that incorporates components, such as components that

support the components of software components (indirectly, as well as methods and events).

2.3. Formation of databases in the program

Formation of the database is one of the most urgent issues of the IT department today. It is almost impossible to find an information system or application that does not use a database management technology.

The database is data that consists of one or more files on the server, collected on that server, and is controlled by queries. The database may be logical and physical. The basis of a logical database is tables. Tables are composed of columns and rows that store data in a shared space (yacheyka).

Many server applications, especially those distributed, use the database to store not only the user, but also the service and configuration information. Therefore, the ability to work with the database, especially Microsoft SQL Server, will significantly increase the effectiveness of your work and help you increase your value in the labor market.

SQL (Structured Query Language) - Contextual Query Language. There are two types of SQL language: interactive and deployed. In most cases, both forms work the same way, but are used in two ways:

The SQL Database Interactive form is provided by the database and is used to output outputs for the customer to use. The command entered in this form of SQL is immediately executed and the user will be able to see the result immediately.

The SQL Language Layout is a set of SQL commands that are embedded in a different language program. We use this form of ice mirror. There are numerous groups or partitions in SQL Online and Hosted Forms. They are useful and conceptually useful by ANSI, but most SQL applications are not processed individually, so they are actually the functional categories of SQL commands.

DDL - ANSI is a Schema Descriptor language, a collection of objects (tables, indexes, animations, etc.).

DML (Data Changing Language) is a set of commands that determines which values are stored in a table at a random moment.

DCD (Data Management Language) is a tool that identifies whether a user has allowed certain effects on certain objects. SQL Standard has been detected by the ANSI model and has now been adopted by the ISO model. We use the SQL language to create this English language tutorial. We will open the new form.
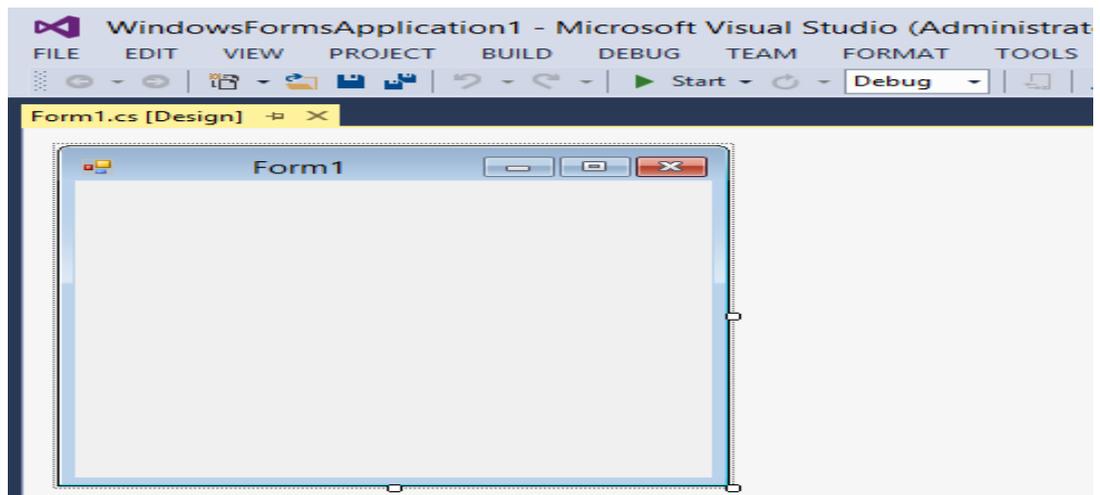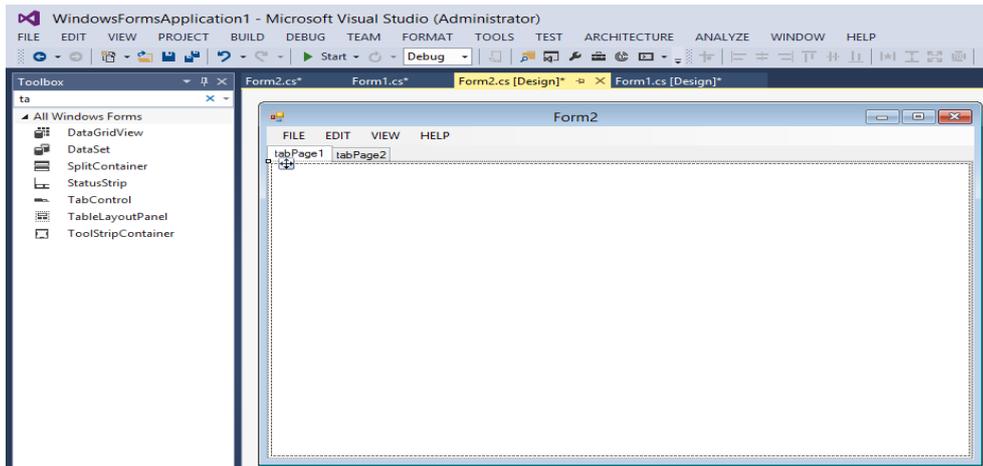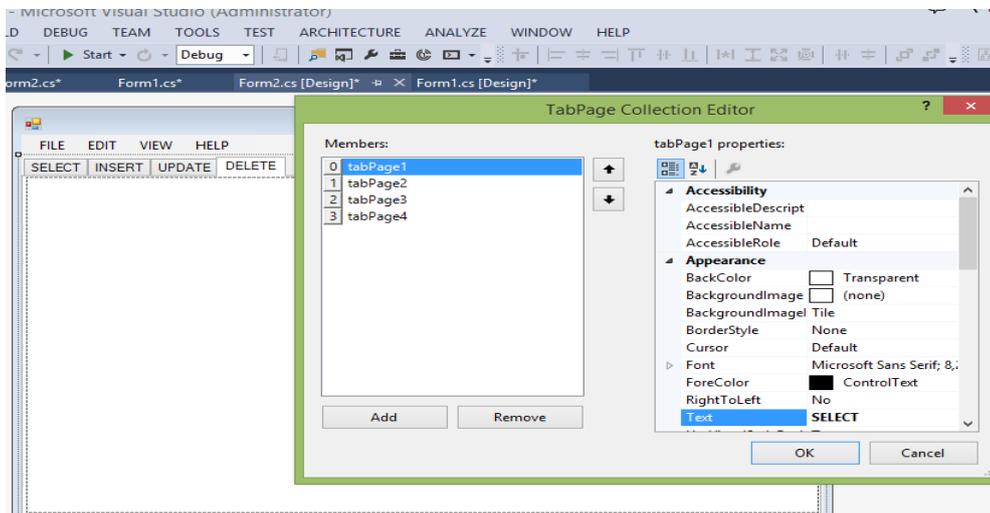

2.3.1 Figure. New window

We will set MenuStrip to create your own.
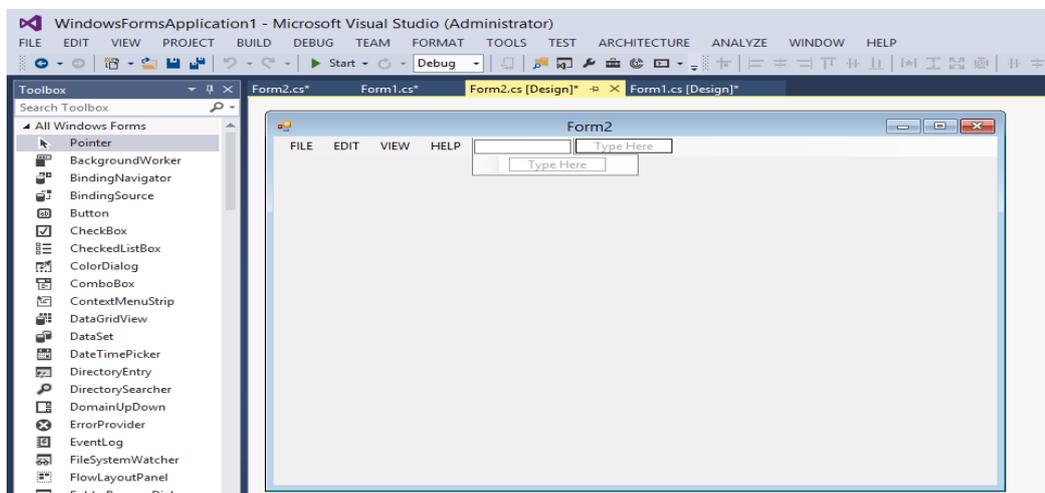
2.3.2 Figure. We add TabControl.

2.3.3 Figure. Value it.

In the Properties section, TabPages will be selected and titles will be given.

2.3.4 Figure. ListBox1 giving name

Next, we will put TabPages into listBox1 in the SELECT section and create a database from the following address
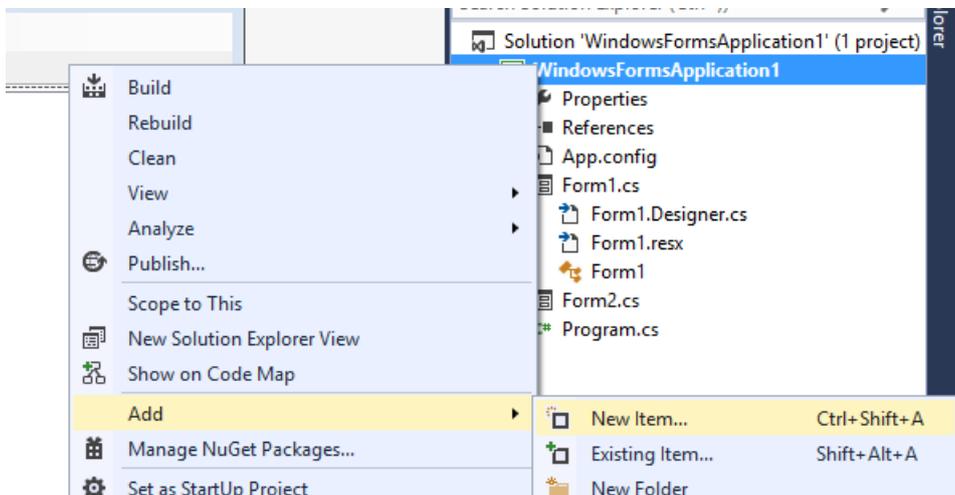
2.3.5 Figure. Showing an address.
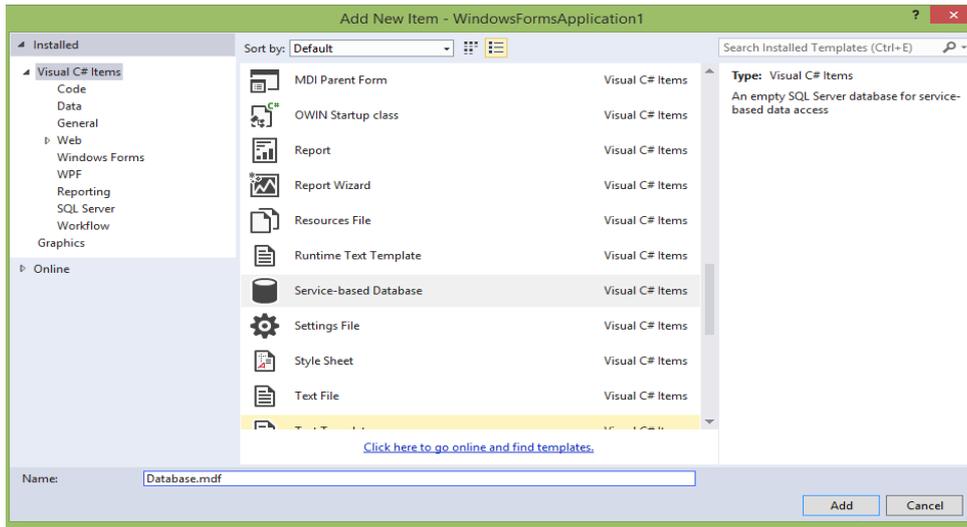
2.3.6 Figure. Creating the database

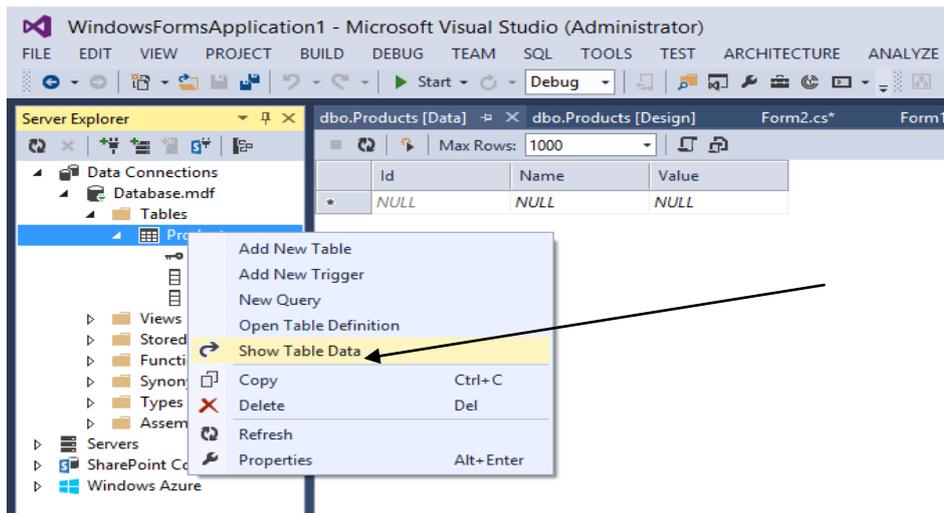After selecting this, we create a new database from the following window
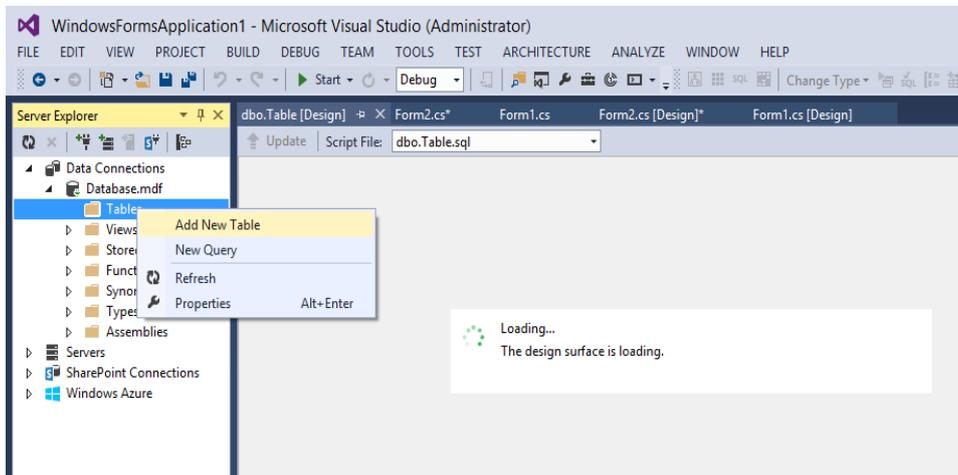
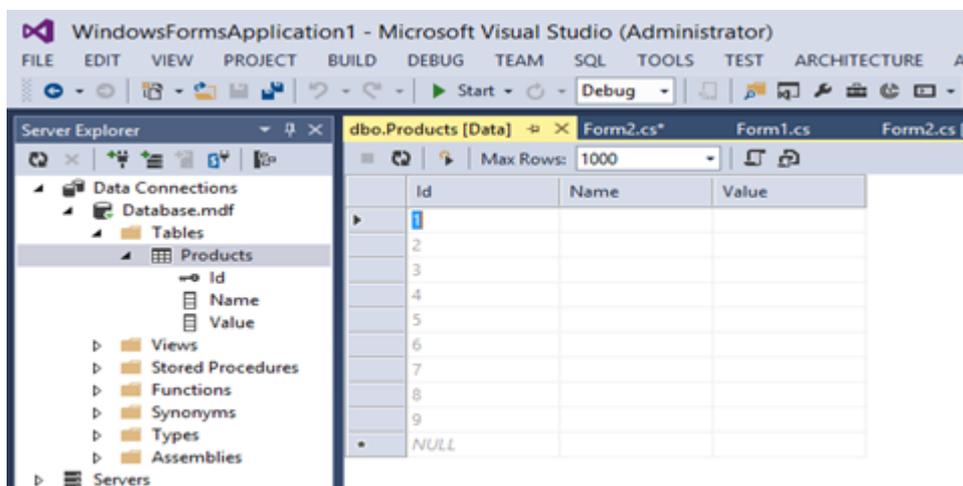2.3.7 Figure. Adding base.

We give value the layout and click Update
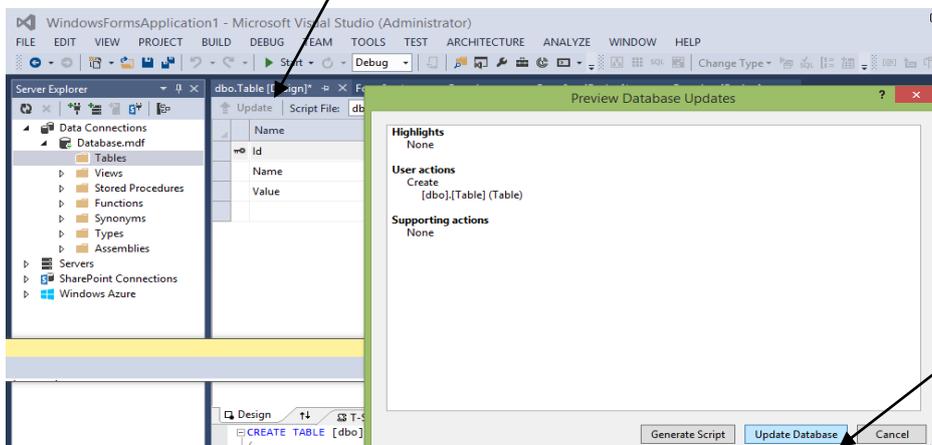
2.3.8 Figure. Saving the database

2.3.9 Figure. Opening the base.
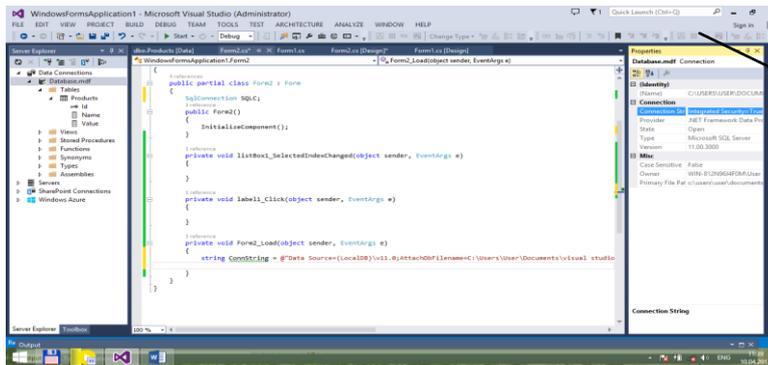
We now give values to the opened database.

2.3.10 Figure. Giving value.

Now let's go to your form and let the code in the form show these addresses to your library
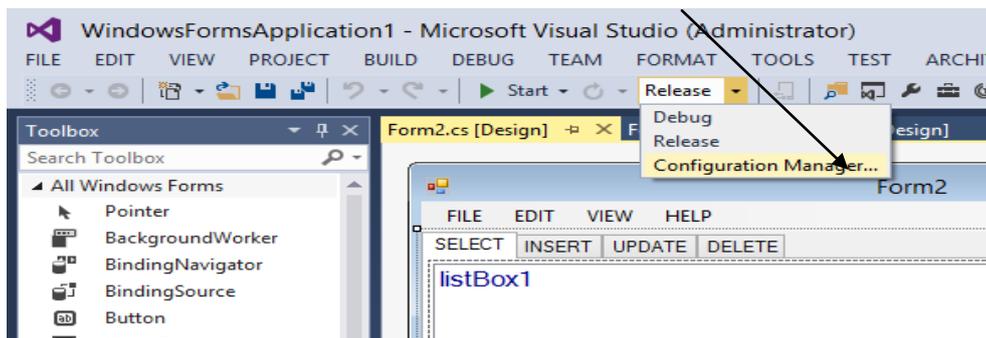
```
using System.Data;
using System.Data.SqlClient;
```

From the swatches of the named database.mdf database, we will get the following link and call it in the form.
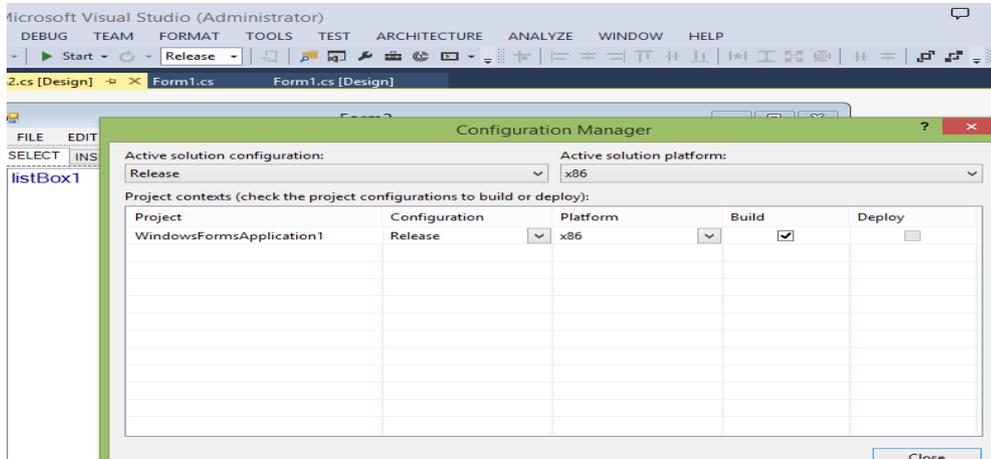
2.3.11 Figure. Taking an address.

And we show in the queue.

2.3.12 Figure. Showing the base level.

2.3.13 Figure. Showing the base level.

III CHAPTER. METHODOLOGY OF CREATED SOFTWARE

3.1. The English tenses program and its capabilities

The software for creating mobile applications in higher education institutions can be created in many programming languages. In these programming

languages, you can create and save JAVA, Delphi, Flash and screenshots with video (avi), flash (swf, flv) and other applications. We're working on Android Studio to create a truly mobile English tenses tutoring program.

During creation the project I used Android studio and for database SQL and MySQL Server. In two ways may create database: by SQL scripts on MySQL sphere or with filling tables on SqlLite field. The second one is easier than the first. Here is given an example to both of the spheres:
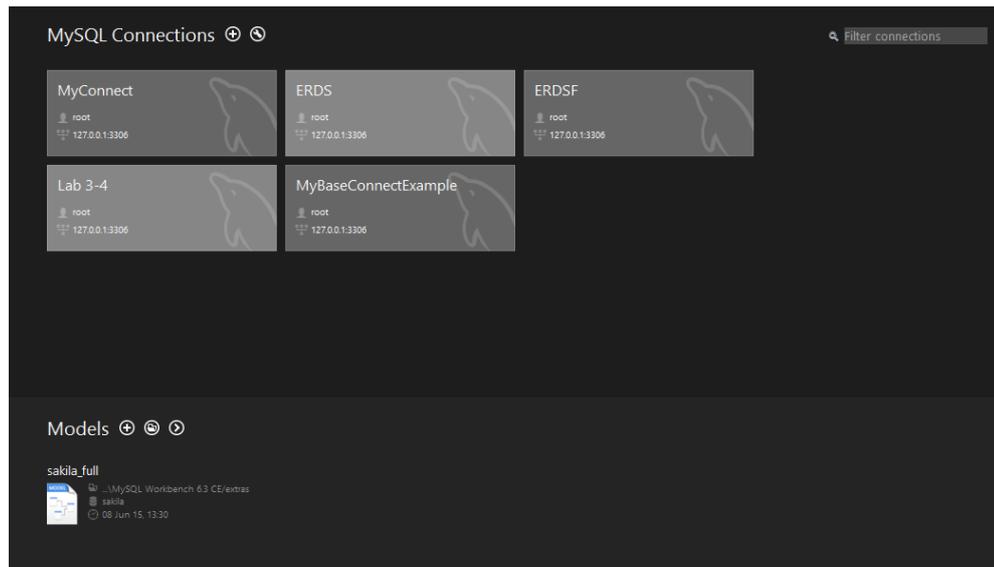
3.1. Figure 1. The main enterance window of MySQL Workbench software

MySQL Workbench is a tool for visual database design that integrates the design, modeling, creation and operation of databases into a single seamless environment for the MySQL database system. It is the successor of DBDesigner 4 from FabForce.

MySQL Workbench is offered in two editions:

Community Edition - distributed under a free GNU GPL license;

Standard Edition - available on an annual paid subscription. This version includes additional features that improve the performance of developers and DBAs.

MySQL Workbench was the first product family that was available in two versions. To attract developers to the main development team, the commercial standard version of the program (English Standard Edition) is offered on top of the

free version (English Community Edition), distributed under the GNU GPL license. "Community Edition" is a full-featured product with all the main features of the commercial version. As the basis for all future releases, it will benefit from all future efforts made to develop the product. "Standart Edition" extends "Community Edition" with a series of modules and plug-ins that allow to optimize the workflow and, thus, save time and avoid mistakes. The MySQL GUI Tools package contains cross-platform free software (under the GNU GPL license) for administration of MySQL database servers, as well as for creating and manipulating data inside MySQL databases. This package was developed by Sun Microsystems, but later its development was stopped, and now it is available only from download archives on the MySQL site.

The GUI Tools package has been completely replaced with MySQL Workbench since beta 5.2. However, MySQL Support Team continued to support the GUI Tools package until June 30, 2010. In future versions of MySQL Workbench, a migration plugin will be added, fully compatible with the MySQL Migration Toolkit included in the GUI Tools package.
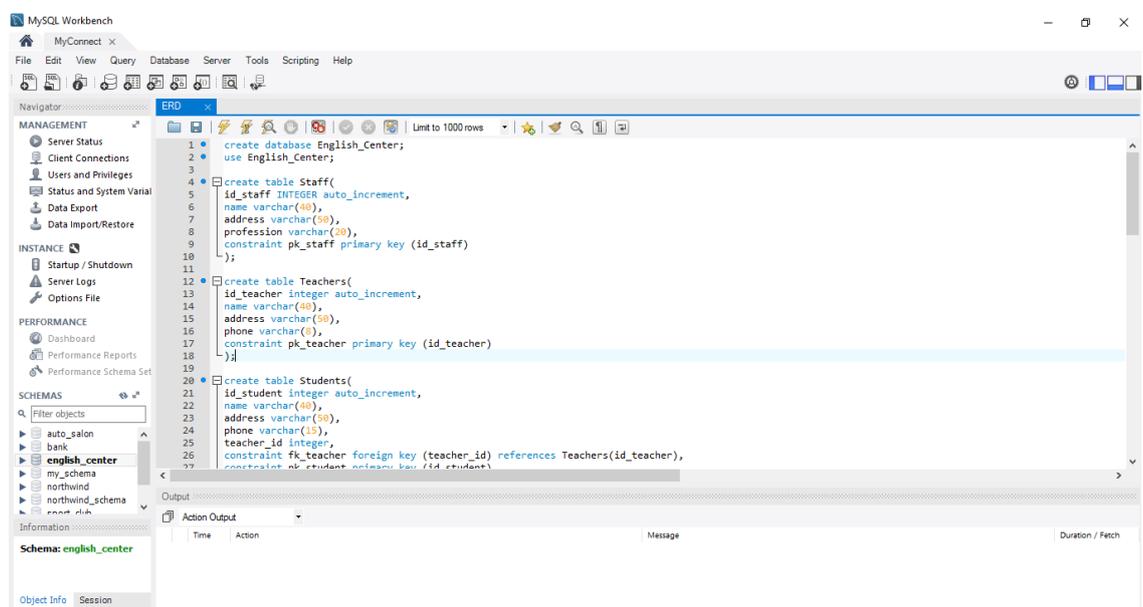

3.1. Figure 2. Workspace of MySQL workbench

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software

applications—which may run either on the same computer or on another computer across a network (including the Internet).

Microsoft markets at least a dozen different editions of Microsoft SQL Server, aimed at different audiences and for workloads ranging from small single-machine applications to large Internet-facing applications with many concurrent users.
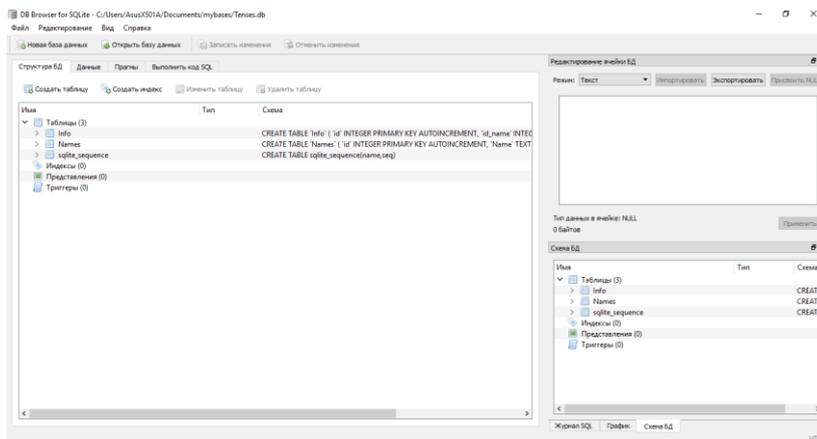
3.1. Figure 3. Main window of database browser for SQL

In this window you may create the table and, may enter data. We need just typing data and save.
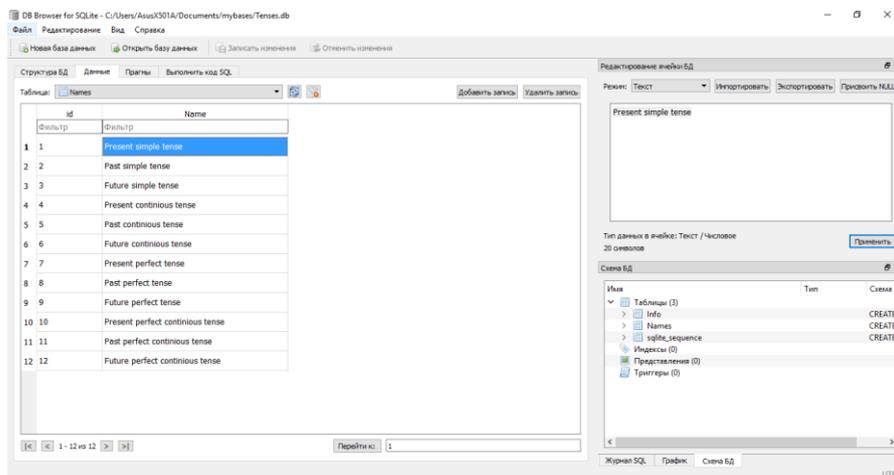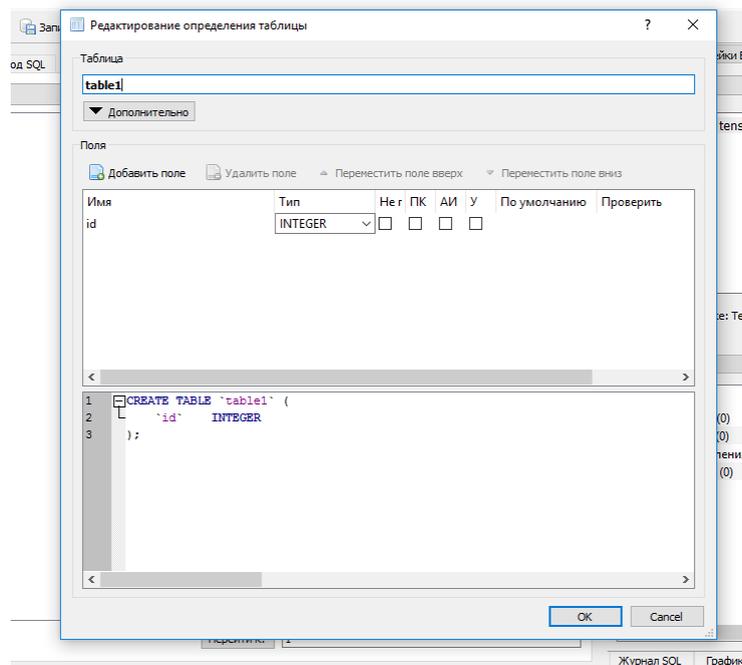

3.1. Figure 4. Already created table.

```
CREATE TABLE `Info` (
        `id`    INTEGER PRIMARY KEY AUTOINCREMENT,
        `id_name`   INTEGER,
        `Definition` TEXT,
        `Example`   TEXT,
```

```
    `Formula`    TEXT
);
CREATE TABLE `Names` (
    `id`    INTEGER PRIMARY KEY AUTOINCREMENT,
    `Name`        TEXT
);
```
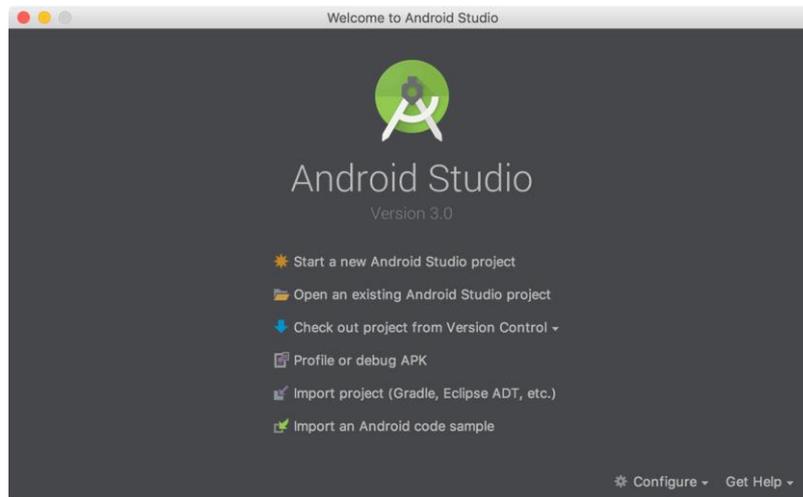

3.1. Figure 5. Creating new table.

Android allows you to provide different resources for different devices. For example, you can create different layouts for different screen sizes. Then the system determines which layout to use based on the current device's screen size.

1. In the Welcome to Android Studio window, click Start a new Android Studio project.

3.1. Figure 5. Main window Android Studio 3.0

Or if you have a project opened, select File > New Project.

2. In the Create New Project window, enter the following values:

- Application Name: "My First App"

- Company Domain: "example.com"

You might want to change the project location. Also, if you want to write a Kotlin app, check the Include Kotlin support checkbox. Leave the other options as they are.

3. Click Next.

4. In the Target Android Devices screen, keep the default values and click Next.
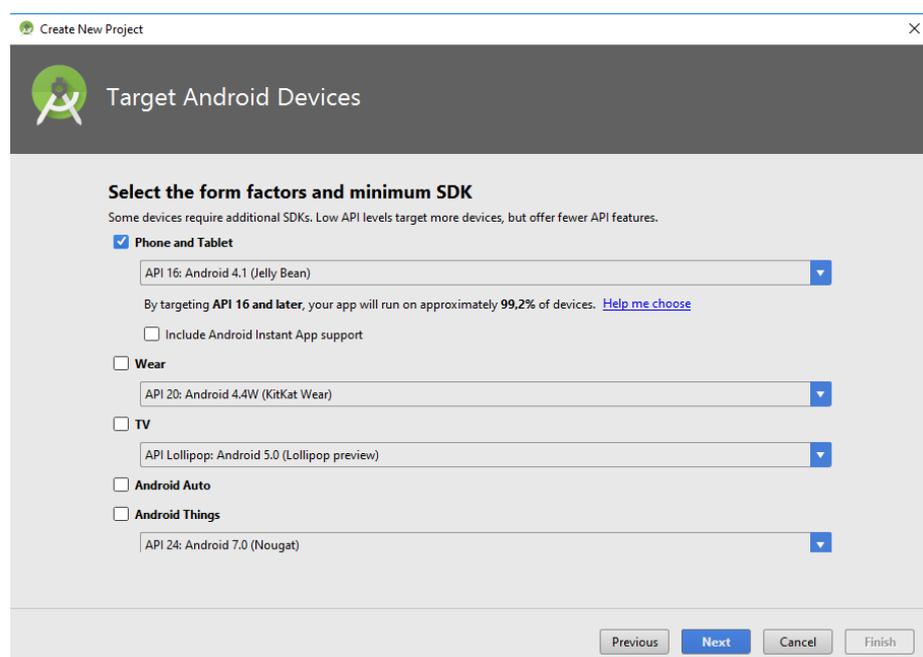
5. In the Add an Activity to Mobile screen, select Empty Activity and click Next.
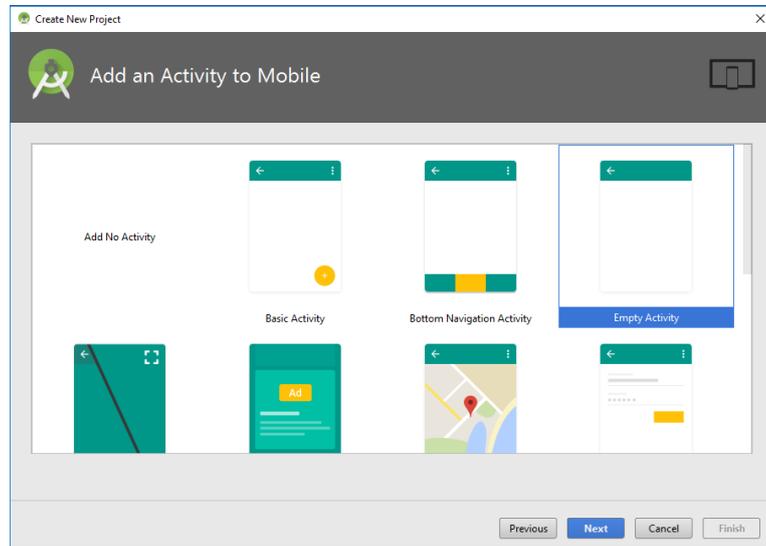
3.1. Figure 7. Adding an activity to mobile

6. In the Configure Activity screen, keep the default values and click Finish.

After some processing, Android Studio opens the IDE.
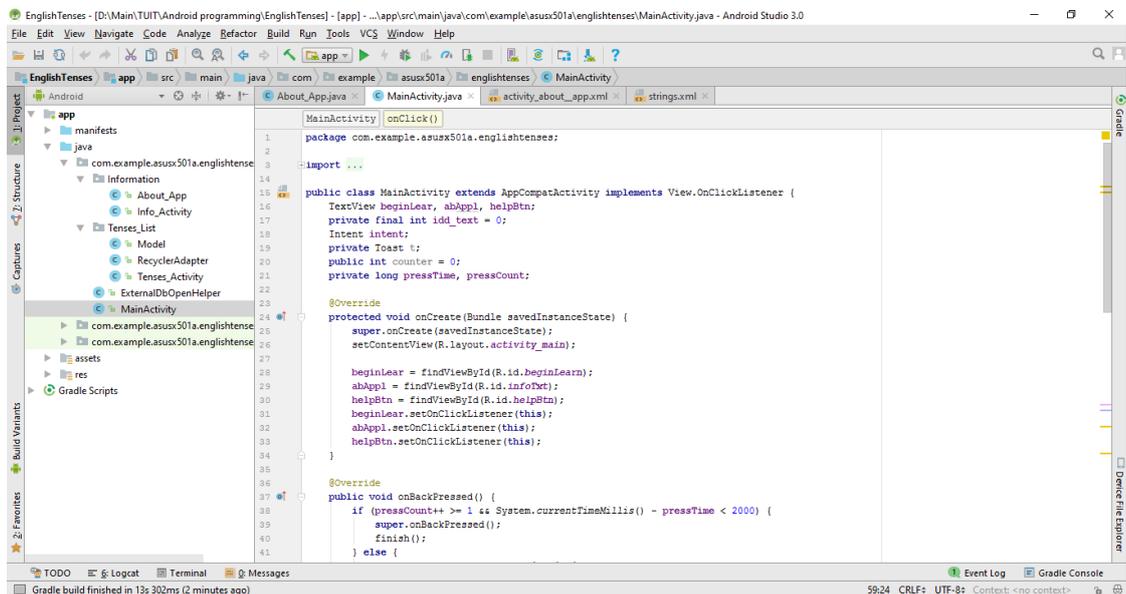
3.1. Figure 8. Main window

Now take a moment to review the most important files.

First, be sure the Project window is open (select View > Tool Windows > Project) and the Android view is selected from the drop-down list at the top of that window. You can then see the following files:

app > java > com.example.myfirstapp > MainActivity

This is the main activity (the entry point for your app). When you build and run the app, the system launches an instance of this Activity and loads its layout.

app > res > layout > activity_main.xml

This XML file defines the layout for the activity's UI. It contains a TextView element with the text "Hello world!".

app > manifests > AndroidManifest.xml

The manifest file describes the fundamental characteristics of the app and defines each of its components.

Gradle Scripts > build.gradle

You'll see two files with this name: one for the project and one for the "app" module. Each module has its own build.gradle file, but this project currently has just one module. You'll mostly work with the module's build.gradle file to configure how the Gradle tools compile and build your app.

After that, I created the design of the project:
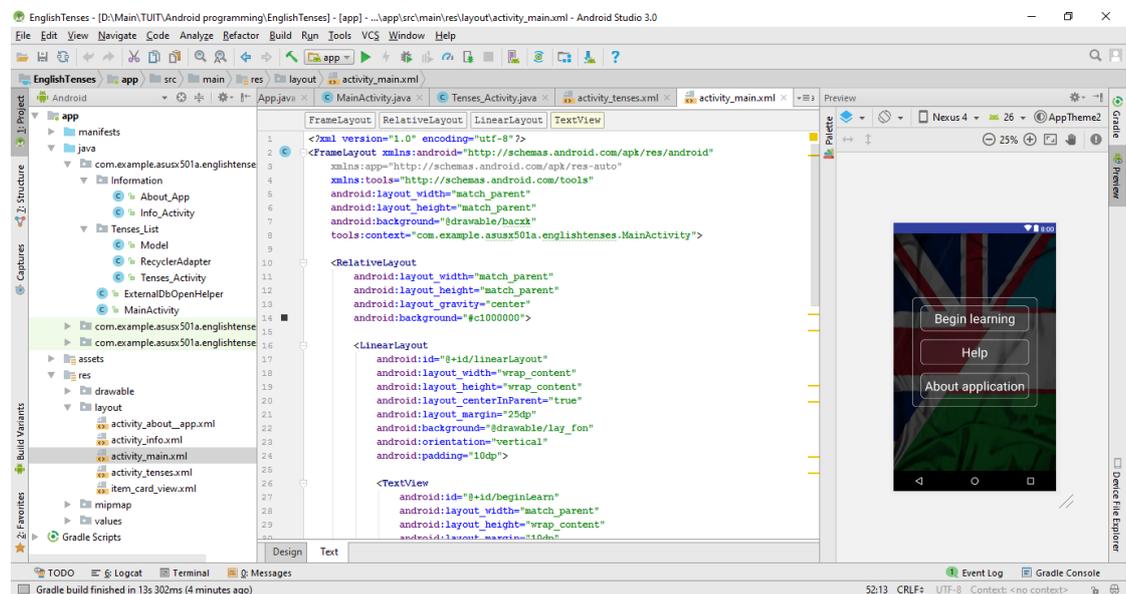
3.1. Figure 9. Creating main interface.

For running and checking project set up your device as follows:

1. Connect your device to your development machine with a USB cable. If you're developing on Windows, you might need to install the appropriate USB driver for your device.

2. Enable USB debugging in the Developer options as follows.

First, you must enable the developer options:

    a. Open the Settings app.

    b. (Only on Android 8.0 or higher) Select System.

    c. Scroll to the bottom and select About phone.

    d. Scroll to the bottom and tap Build number 7 times.

    e. Return to the previous screen to find Developer options near the bottom.

Open Developer options, and then scroll down to find and enable USB debugging.

Run the app on your device as follows:

1. In Android Studio, click the app module in the Project window and then select Run > Run (or click Run ▶ in the toolbar).

2. In the Select Deployment Target window, select your device, and click OK.
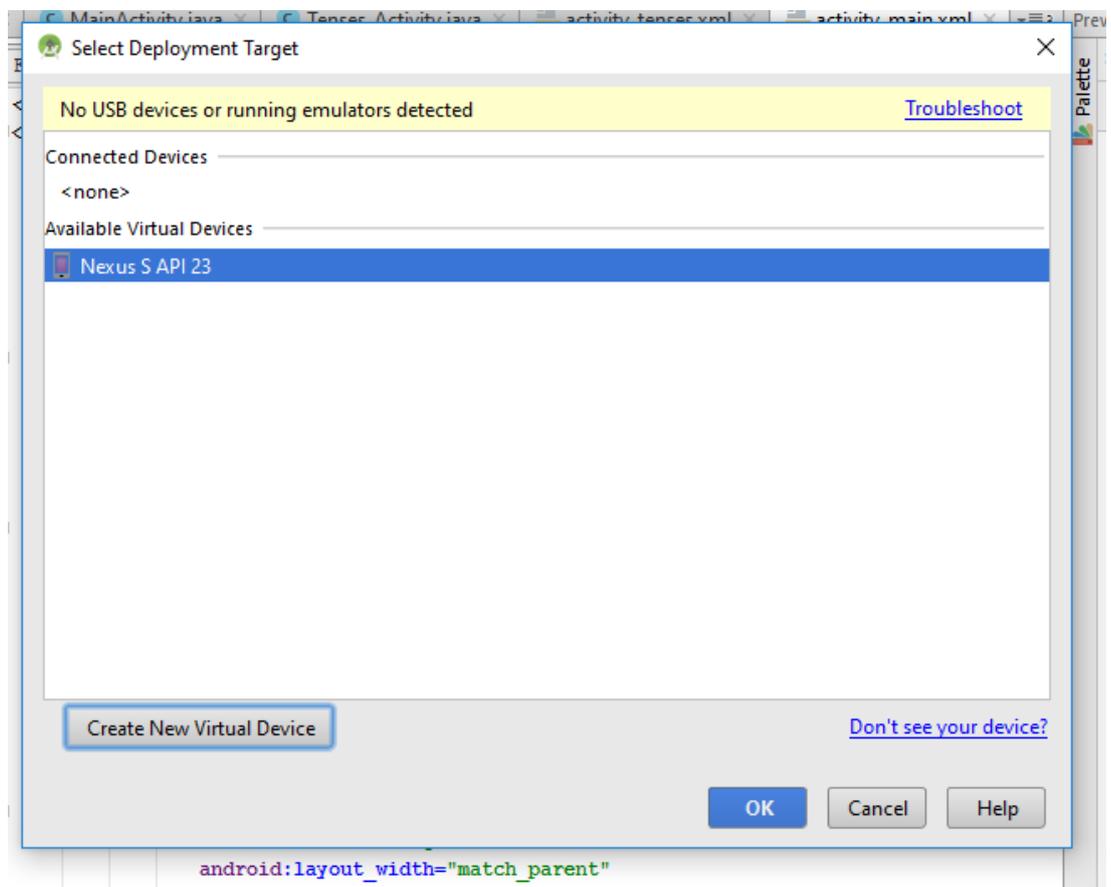
3.1. Figure 10. Selecting devices

Android Studio installs the app on your connected device and starts it. You should now see "Hello World!" displayed in the app running on your device.

To start developing, continue to the next lesson.

Run on an emulator

Run the app on an emulator as follows:

1. In Android Studio, click the app module in the Project window and then select Run > Run (or click Run ▶ in the toolbar).

2. In the Select Deployment Target window, click Create New Virtual Device.

3. In the Select Hardware screen, select a phone device, such as Pixel, and then click Next.

4. In the System Image screen, select the version with the highest API level. If you don't have that version installed, a Download link is shown, so click that and complete the download.

5. Click Next.

6. On the Android Virtual Device (AVD) screen, leave all the settings alone and click Finish.

3.1. Figure 11. Creating new virtual device.

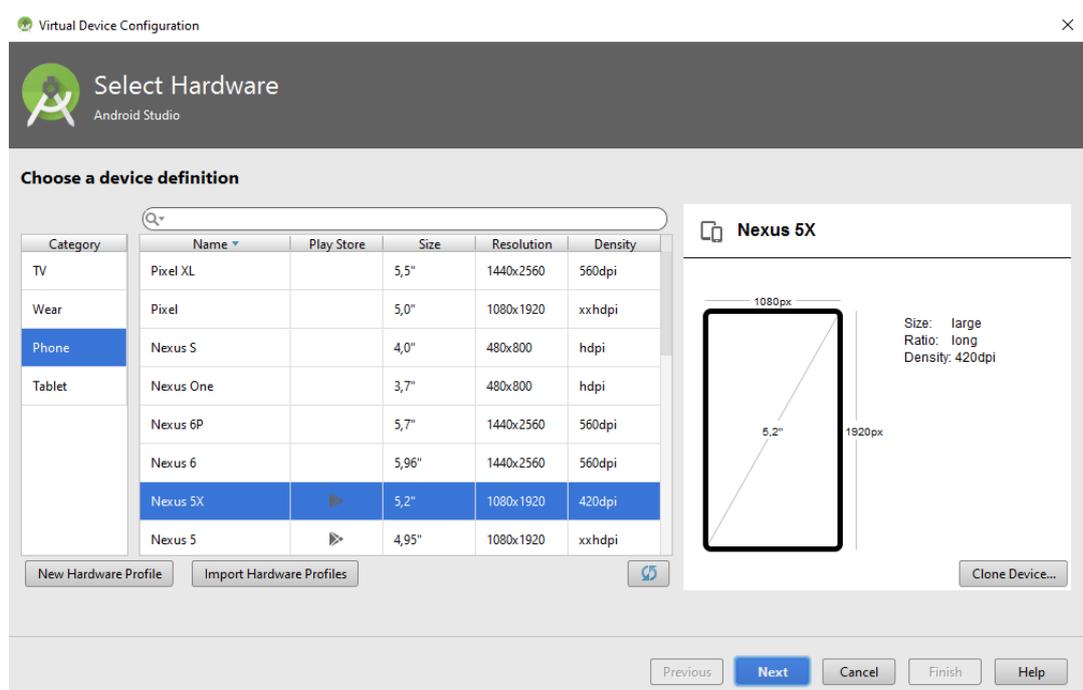7. Back in the Select Deployment Target dialog, select the device you just created and click OK.

Android Studio installs the app on the emulator and starts it. You should now see "Hello World!" displayed in the app running on the emulator.

3.2. Application Guidelines

E-learning manual is a curriculum developed at the highest scientifically-methodological level, which is fully complied with the state educational standards of certain directions and specialties. Electronic educational manual - is a network communication system, which is provided electronically and allows instant access to the other part of it.

For using program "Easy learn" you should set the application to your device which works on Android platform. After that you may choose the app icon from your menu. It looks like this:
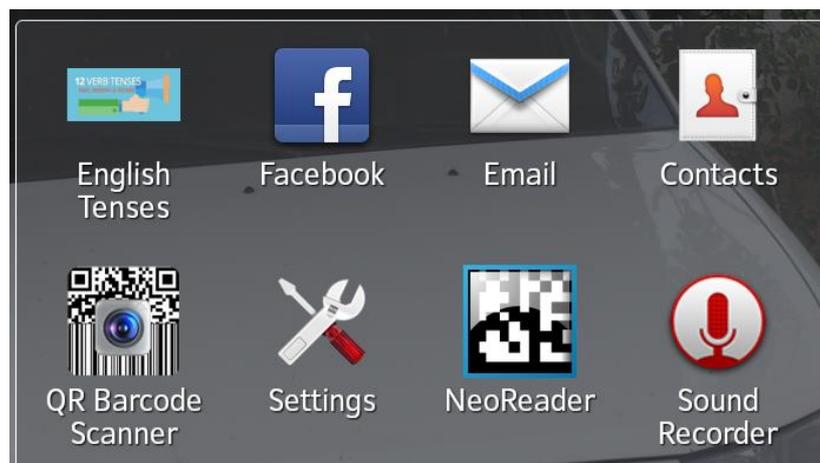
3.2. figure 1. Choosing icon from main menu

After that the program window will open:

3.2. Figure 2. Main enterance window of application

In the main window given three labels as buttons, and they help you to begin learning or taking instructions. If you need a help from using the application, you should choose the second label "Help". And you may read the instruction before using the program.

For learning English tenses you
should click 'Begin' button and
choose one of the tenses from the
Tenses list. After that, you may
begin learning. Notice: You have to
learn by heart!!!
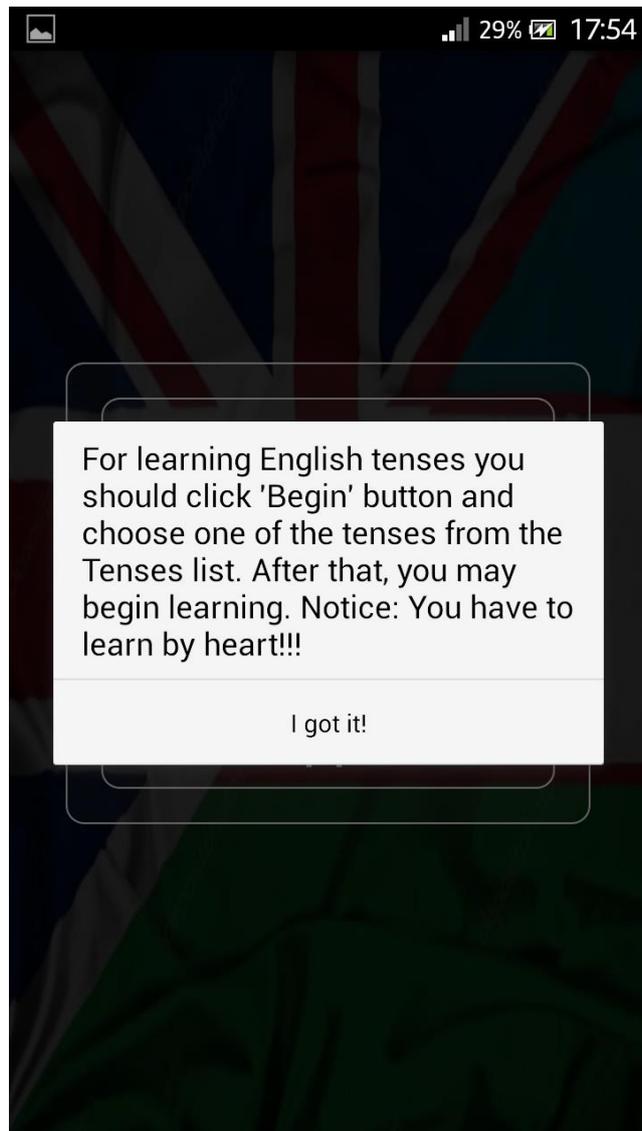
I got it!

3.2. Figure 3. A little instruction to using the application

After that, click "Got it" and you will back to the main window. And if you choose the first "Begin learning" label you may see the next lesson's window, which contains all tenses.
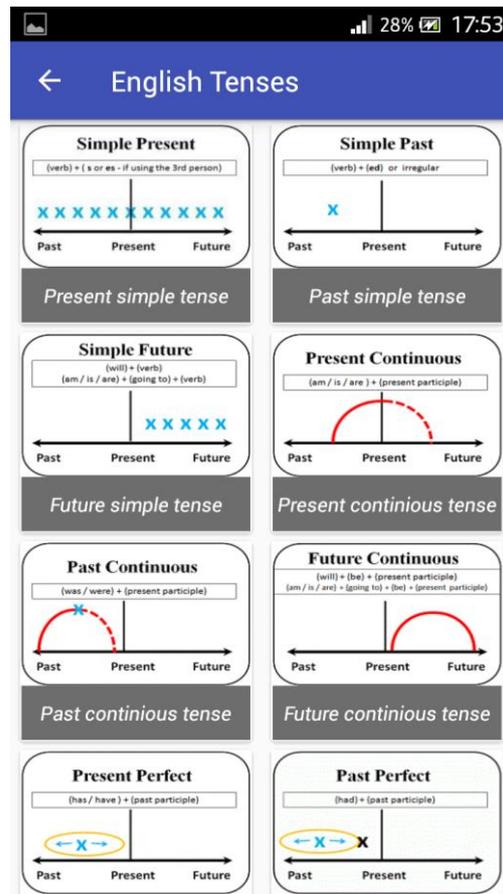
3.2. Figure 4. After choosing the first label from main window

Here you may scroll and see the continuing of the tenses:
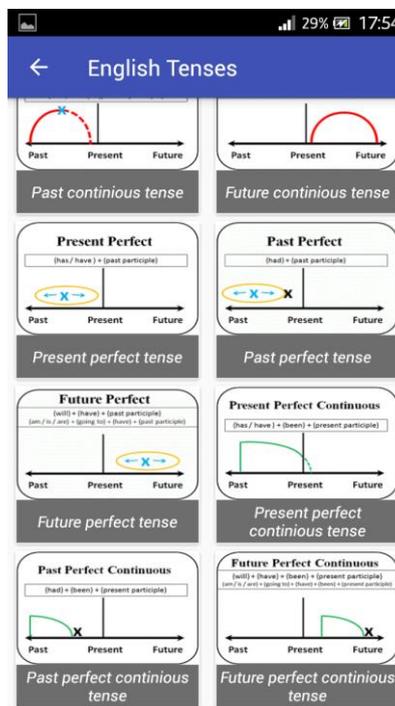
3.2. Figure 4. After scrolling

If you choose one of the tenses from given window, you may get all information with examples in the next window.
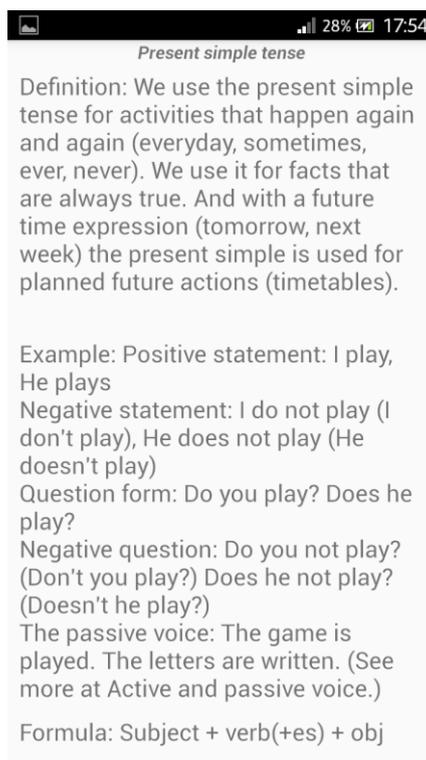
3.2. Figure 5. Explanation of every tenses with its examples
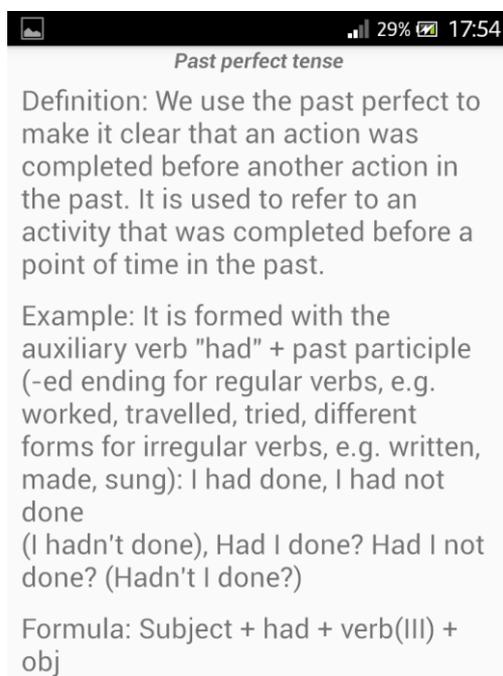
3.2. Figure 6. Another view of explanations

After or before learning this tenses and their formulas if you want to know about developer of this application you may go back to the main window:
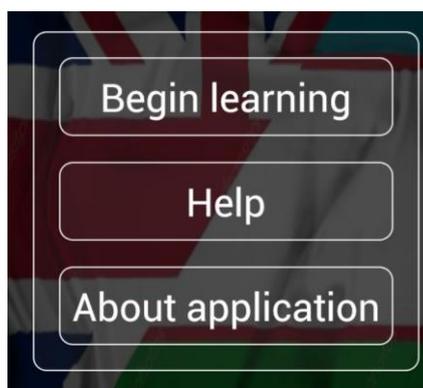
3.2. Figure 7. Main window.

After that just click the label which is the third one "About application".
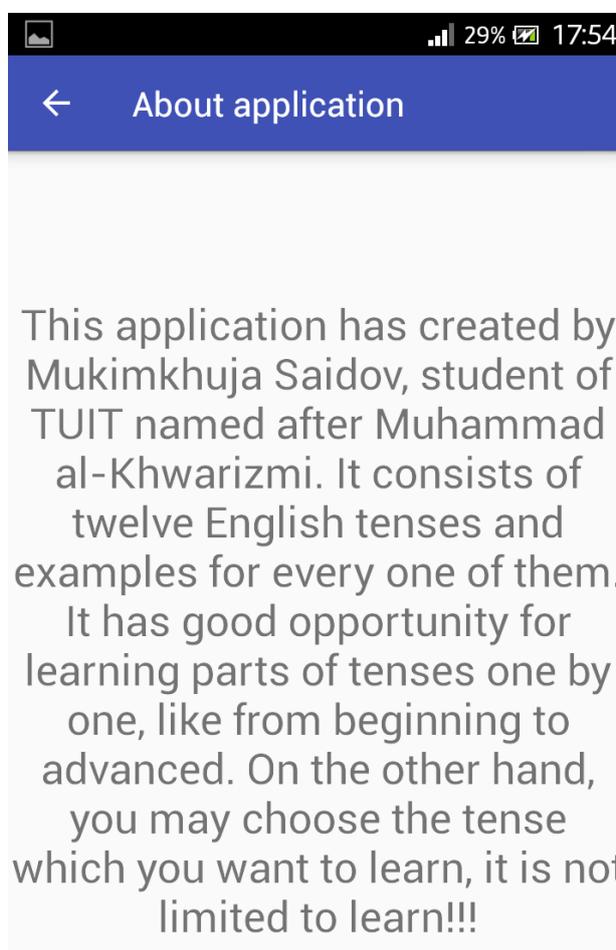
3.2. Figure 8. About application and its developer.

Every section of this program has attended to the easy learning, that's why every sentences have written clearly and understandable.

IV CHAPTER. LIFE ACTIVITIES SAFETY

4.1. Ergonomic Computer to improve Health and Safety

Computing with applying ergonomic principles is a great way to avoid discomfort, which will eventually lead to health problems as described above.

Here are some ways of work and workplace settings that will be able to keep you from the discomfort of computing. The following will discuss briefly on some things related to ergonomics, especially matters relating to the use of computers and other information technology.
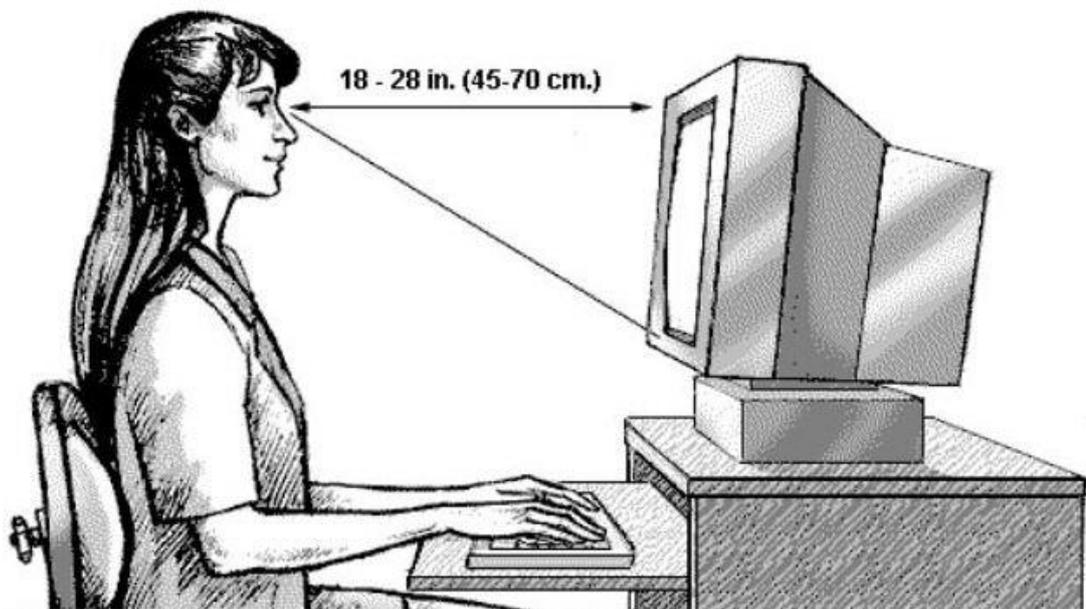
The Control and Display Settings.

Improper control and display control will result in inefficiency and frustration for the user especially if the user is in great pressure and faced with a large number of controls and displays. Organizing controls and displays depends on the domain and application created, but will include,

Functionally, controls and displays are arranged so that they are functionally connected to each other;

Sequential; control and display are organized by showing the sequence of their use in a particular application;

Frequencies; controls and displays are placed according to their frequency of use, with the most frequently used functions being placed in easily accessible

locations. In addition to control and display settings, the entire interface must be arranged in such a way that it is appropriate to the user's position.

The Physical Environment of the Interaction

Ergonomics also pay attention to the design of the system work environment such as where the machine is implemented, who uses it, how the user operates it, and so on. The physical environment of this system affects the user's acceptance of the system and even the health and safety aspects of the user. Therefore, it should be considered in the design of interactive systems. One consideration that is also related to the physical environment is the physical size of the user. Any system should be easy to reach by users with small body sizes including those who use wheelchairs, and vice versa users with large physical size are not pinched in system settings. In particular, users should feel comfortable and secure.

Health Issues

Although computer work is not a dangerous thing, it must also be thought of as an impact of the design of interactive systems created on the health and safety of users.

There are several physical environmental factors that directly affect the quality of user interaction and performance;

Physical position, the user must be able to reach all the controls comfortably and can see the whole display, do not have to stand for a long period of time, and so on;

Temperature; temperatures that are too hot or cold will affect performance and health. Research shows that a person's performance will decrease at high or low temperatures due to loss of concentration;

Lighting; the level of illumination must be adjusted to the work environment. Sufficient lighting with the right position should be provided to allow users to see the screen;

Sound or noise; excessive sound can endanger health. Sound or noise levels should be maintained at appropriate or convenient levels as sound can be a stimulus to the user and a confirmation of system activity;

Time; the time that the user needs to access the system must also be considered. There are some hardware that endanger health if accessed in a long time as CRT display is not good for pregnant women. Intensive use of computer technology can lead to various health problems such as stress, hand and neck muscle damage, eyestrain, exposure to radiation, even accidental deaths caused by computers. The people sitting in front of the PC or visual display terminal(VDT) in high-speed jobs for repeated typing will suffer health problems, commonly called cumulative trauma disorder or cumulative trauma disorder (CTD). The fingers, wrists, neck, and back can become weak and sore so they can not work.

The Use of Color

The colors used on the display should be indistinguishable and do not affect the contrast. If color is used as an indicator, it must include other information. Colors are also related to the general agreement and according to user expectations, such as red is used to mark the warning, green for a system that is running normally, and so on.

The Type of Interaction

Choosing the right type of interaction can have a good effect on the dialogue between the user and the computer so that the purpose of the interaction between the user and the computer can be achieved. There are several commonly used types of interactions:

Command Line Interface (CLI) is the first form of interactive dialogue and is still in use today. With CLI, the user provides direct instruction to the computer using function keys, single character, short or long commands;

Menus are located on the menu-driven interface, a set of options available to the user is displayed on the screen and can be selected using the mouse or numeric or alphabetic keys;

Natural language, is an attractive mechanism komunikai. Natural language can understand written input, and voice. However, there are still many shortcomings in terms of ambiguity in the aspects of syntax and semantics;

Q/A & Query dialogue the mechanism is that the user is given a series of questions in the form of yes or no answers, multiple or coded choices and guided step by step during the interaction process;

Form-fills and spreadsheets are generally used for data entry and retrieval applications. Form-fill is a display that resembles a piece of paper with several fields to fill. Spreadsheets are variations of form-fill;

WMP Interface (Windows, Icons, Menu, Pouinters) is the default interface for most interactive computer systems used today especially on PC and desktop workstations. Interactions involve at least 2 participants, ie users and systems. Both have complex and different characteristics in communicating and perceiving tasks and domains. Therefore, the interface must effectively translate the communication between them so that the interaction works.

In order to achieve health and safety and comfort in work then every computer user should pay more attention to and care about the human and ergonomic factors of using the computer itself. In addition, the design and development of computer technology products should be more emphasis on social and ergonomic factors that can provide security and safety for its users.

The law relating to health and safety issues for work with computers is contained in the Health and Safety (Display Screen Equipment) Regulations 1992, which define a 'user' as an employee who habitually uses display screen equipment as a significant part of their normal work.

Though education staff are not usually working at a computer all day, the introduction of planning, preparation and assessment (PPA) time and the electronic marking of examinations have resulted in increased use of computers.

There are health problems associated with working with computers, which include repetitive strain injury, eye strain, back pain and stress.

Risk assessment

The regulations require employers to carry out a risk assessment of users' workstations, which should consider the entire workstation, including equipment and furniture, as well as the work environment, eg lighting, temperature and leg room. The tasks that are being performed at the work station should be considered as should any special needs of individual staff.

Display screen equipment (DSE) risk assessments should also consider those factors that may contribute to repetitive strain injuries such as:

- sitting in the same position for a long period

- awkward positioning of the wrist and hand in relation to the keyboard

- high workload for a prolonged period of time

- excessive use of the mouse.

Checklist for workstations

The DSE Regulations detail the minimum standards for workstations, which are summarised below.

The display screen

This should:

- display well-defined characters of adequate size and spacing

- have a stable image

- have easily adjustable brightness and contrast

- tilt and swivel easily to suit the user

- be free from glare and reflections

- use a separate base for the screen, or an adjustable table.

The keyboard

This should:

- be tiltable and separate from the screen to allow the user to adopt a comfortable working position

- have a space in front to provide support for the hands or arms of the user

- have a matt surface

- have clearly legible symbols on the keys.

The work surface

The work surface should:

- provide adequate space for the user

- have a low reflective surface

- be of adequate size to allow the screen, keyboard, etc to be flexibly arranged

- have a stable, adjustment document holder, which should be at the same level as the screen and at the same viewing distance.

The work chair

This should have a seat that is adjustable in height, with a seat back adjustable in height and tilt. A footrest should be available.

The workstation/environment

The workstation must do the following:

- provide sufficient space for the user or the operator to alter position comfortably lighting must be adequate with suitable contrast between the screen and background glare and reflections on the screen should be avoided windows should be fitted with adjustable coverings to alter the daylight level.

When a workstation is shared by more than one person, it should be assessed in respect of each person.

Schools and colleges should consult their safety reps on all matters concerning work with computers.

Training in using computers

Employers are obliged to provide information and training on the health and safety aspects of working with computers. This should cover:

- the importance of good posture, changing position and good keyboard technique

- how to avoid glare or bright reflections in the screen

- cleaning and adjusting the screen

- the importance of frequent short breaks

- using a mouse

- health risks

- who to report symptoms to or to contact for help

- information about the right to eyesight tests.

Eye tests

Under the regulations, users have a right to eye sight tests upon starting computer work and at regular intervals thereafter, at the employer's expense. Where tests show that the user requires special spectacles/lenses for computer work, the employer must pay for the cost of a basic pair.

4.2. Promotion of occupational safety and health

The promotion of occupational safety and health is an organizational investment for the future: enterprises will benefit from promoting health in the workplace in the form of lower sickness-related costs and higher productivity. Consequently, OSH promotion in the workplace could be regarded as a modern corporate strategy which aims at preventing ill health at work (including work-related diseases, accidents, injuries, occupational diseases and stress) and enhancing the potential and well-being of the workforce. As part of national OSH promotional activities, some countries organize annual awards based on certain criteria, including the number of accidents submitted for compensation claims, and continuous inspection and monitoring of hazards by the individual workplace. Companies that have kept good safety records are given awards in recognition of their efforts and to encourage others to emulate them. However, mechanisms for ensuring honesty and preventing under-reporting or inaccurate declaration should be put in place and enforced. In other instances, health promotion items, including hazard-monitoring equipment, safety devices, training manuals, and information packages on occupational safety and health are displayed at big annual events such as international trade fairs. Similar activities can be organized at the enterprise level to promote awareness about safety and health. Such activities could include

an annual safety festival. Workers' lifestyles, including diet, exercise, and smoking and drinking habits, are a key factor in health. Health education designed to promote good lifestyles and discourage those detrimental to health should be introduced into the workplace as part of the programme of OSH activities. OSH promotion covers a wide range of measures aimed at increasing interest in a safe and healthy working life. It includes: • a comprehensive system of information dissemination; • targeted campaigns for the different sectors of occupational safety and health; and • safety promotion activities, for example an annual safety week all over the country, featuring events centred on safety themes and culminating in a safety awards ceremony. The OSH programme should include strategies to promote wider awareness of the social and economic importance of improving working conditions and the environment. An OSH awareness campaign is aimed at acquainting both management and workers with hazards in their workplaces and their role and obligations in the prevention of occupational accidents, injuries and diseases. It fosters improved communication and work relationships at all levels of the business enterprise, including top management, supervisors and workers on the shop floor. It helps a company to achieve the key objective ofo a good safety and health record. Education in the context of occupational safety and health is designed to communicate a combination of knowledge, understanding and skills that will enable managers and workers in an enterprise to recognize risk factors contributing to occupational accidents, injuries and diseases, and be ready and able to prevent these factors occurring in their own work environment. OSH education is thus intended to foster the awareness and positive attitudes which are conducive to safety and health at work. Education includes training, which is a process of helping others to acquire skills necessary for good performance in a given job. Training is therefore a narrower concept than education. Training, as opposed to full education, may be the only option where workers have limited academic background (and hence their comprehension is likely to be limited), or time is scarce.

Education and training provide individuals with the basic theoretical and practical knowledge required for the successful exercise of their chosen occupation or trade. Education and training must therefore also cover the prevention of accidents and injury to health arising out of or linked with or occurring in the course of work. There should be special emphasis on training, including necessary further training. In addition, attention should be paid to the qualifications and motivations of individuals involved, in one capacity or another, in the achievement of adequate levels of safety and health. Where there are health hazards associated with hazardous materials, the competent authority should make appropriate arrangements, in consultation and collaboration with the most representative organizations of employers and workers concerned: • to promote the dissemination of information on hazards and on methods of prevention and control; and • to educate all concerned about the hazards and about methods of prevention and control.

4.3. General fire safety hazards

Fires need three things to start – a source of ignition (heat), a source of fuel (something that burns) and oxygen:

- sources of ignition include heaters, lighting, naked flames, electrical equipment, smokers' materials (cigarettes, matches etc), and anything else that can get very hot or cause sparks

- sources of fuel include wood, paper, plastic, rubber or foam, loose packaging materials, waste rubbish and furniture

- sources of oxygen include the air around us

Employers (and/or building owners or occupiers) must carry out a fire safety risk assessment and keep it up to date. This shares the same approach as health and safety risk assessments and can be carried out either as part of an overall risk assessment or as a separate exercise.

Based on the findings of the assessment, employers need to ensure that adequate and appropriate fire safety measures are in place to minimise the risk of injury or loss of life in the event of a fire.

To help prevent fire in the workplace, your risk assessment should identify what could cause a fire to start, ie sources of ignition (heat or sparks) and substances that burn, and the people who may be at risk.

Once you have identified the risks, you can take appropriate action to control them. Consider whether you can avoid them altogether or, if this is not possible, how you can reduce the risks and manage them. Also consider how you will protect people if there is a fire.

- Carry out a fire safety risk assessment
- Keep sources of ignition and flammable substances apart
- Avoid accidental fires, eg make sure heaters cannot be knocked over
- Ensure good housekeeping at all times, eg avoid build-up of rubbish that could burn
- Consider how to detect fires and how to warn people quickly if they start, eg installing smoke alarms and fire alarms or bells
- Have the correct fire-fighting equipment for putting a fire out quickly
- Keep fire exits and escape routes clearly marked and unobstructed at all times
- Ensure your workers receive appropriate training on procedures they need to follow, including fire drills
- Review and update your risk assessment regularly

Dangerous substances that cause fire and explosion

Work which involves the storage, use or creation of chemicals, vapours, dusts etc that can readily burn or explode is hazardous. Each year people are injured at work by flammable substances accidentally catching fire or exploding.

This section does not cover explosives – our website has more detailed information on explosives and similar substances. It also has information on gas safety.

Many substances found in the workplace can cause fires or explosions. These range from the obvious, eg flammable chemicals, petrol, cellulose paint thinners and welding gases, to the less obvious – engine oil, grease, packaging materials, dusts from wood, flour and sugar.

It is important to be aware of the risks and to control or get rid of them to prevent accidents.

To help prevent accidental fires or explosions, you first need to identify:

- what substances, materials, processes etc have the potential to cause such an event, ie substances that burn or can explode and what might set them alight

- the people who may be at risk/harmed

Once you have identified the risks, you should consider what measures are needed to reduce or remove the risk of people being harmed. This will include measures to prevent these incidents happening in the first place, as well as precautions that will protect people from harm if there is a fire or explosion.

Key points to remember

- Think about the risks of fire and explosions from the substances you use or create in your business and consider how you might remove or reduce the risks

- Use supplier safety data sheets as a source of information about which substances might be flammable

- Consider reducing the amount of flammable/explosive substances you store on site

- Keep sources of ignition (eg naked flames, sparks) and substances that burn (eg vapour, dusts) apart

- Get rid of flammable/explosive substances safely

- Review your risk assessment regularly

- Maintain good housekeeping, eg avoid build-up of rubbish, dust or grease that could start a fire or make one worse.

SUMMARY

One of the main problems in any learning process is to improve the apprenticeship of learners, understand what they are learning, understand how to memorize and reuse them.

As you know, most people get information through their eyesight, hearing, hearing, and rest. However, the information in life is not only acceptable, but also memorable. The memory occupies a leading position. When it comes to something more than what it has seen, it saves it more and more when it is created. In the course of this lesson, new information technologies are becoming an invaluable predictor.

The Graduation Qualification Project is the last stage of a four-year process that focuses on the University's vocational learning. Therefore, Graduation Qualification Project is a job that we have chosen independently of our chosen (based on state educational standards) production, technical and technological conditions, and to find solutions to the problem of production and to be able to independently evaluate the obtained results. In addition, my diploma work has been overseen by my university as part of the classroom learning process (especially in special subjects).

Of course, the diploma work involves the results of calculating the economic effectiveness of the results (positive only). The quality of the diploma work will be assessed based on the technology and the novelty of the topic solution.

The Graduation Qualification Project has allowed me to communicate the theoretical knowledge with certain technological or other related processes of production. The volume of the diploma work is defined and approved by the Council and the Chair of the University, taking into account the specifications of our profession, based on the requirements of state educational standards and standard programs.

That's why I studied the technological processes, scientific articles, foreign news and abilities, patent reviews, synopsis information, and technical literature

information, and I researched the results of these studies. This direction taught me to think creatively and to interpret the results even if it did not even see the technological process.

Today, the most popular theme is to create mobile applications. Here everyone can demonstrate his creative personality, intelligence, knowledge and subtle taste. Unfortunately, the Mobile Application is not ready for presentations and databases, but there are specific software programs that can study the processing technology and have multifunctional handling tools.

I've been working on a mobile application that trains the English Language Times for this Graduation Qualification Project. I tried to create a software product that created a dialog environment that ensured interactive communication between the user and the mobile device, allowing the user to interact with the program.

APPLICATION

Main Activity

```java
package com.example.asusx501a.englishtenses;

import android.app.AlertDialog;
import android.app.Dialog;
import android.content.DialogInterface;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;

import com.example.asusx501a.englishtenses.Information.About_App;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
    TextView beginLear, abAppl, helpBtn;
    private final int idd_text = 0;
    Intent intent;
    private Toast t;
    public int counter = 0;
    private long pressTime, pressCount;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        beginLear = findViewById(R.id.beginLearn);
        abAppl = findViewById(R.id.infoTxt);
        helpBtn = findViewById(R.id.helpBtn);
        beginLear.setOnClickListener(this);
        abAppl.setOnClickListener(this);
        helpBtn.setOnClickListener(this);
    }

    @Override
    public void onBackPressed() {
        if (pressCount++ >= 1 && System.currentTimeMillis() - pressTime <
2000) {
            super.onBackPressed();
            finish();
        } else {
            pressTime = System.currentTimeMillis();
            Toast.makeText(getApplicationContext(), "Double press for exit!",
Toast.LENGTH_SHORT).show();
        }
    }

    @Override
    public void onClick(View view) {
        switch (view.getId()) {
            case R.id.beginLearn:
                intent = new Intent("TensesList");
                startActivity(intent);
                Toast.makeText(this, "Choose one of the tenses!",
Toast.LENGTH_SHORT).show();
```

```java
                MainActivity.this.finish();
                break;
            case R.id.infoTxt:
                /*t = new Toast(MainActivity.this);
                t.makeText(MainActivity.this, getString(R.string.toast),
Toast.LENGTH SHORT).show();*/
                Intent intent1=new Intent(MainActivity.this,
About_App.class);
                startActivity(intent1);
                break;
            case R.id.helpBtn:
                showDialog(idd_text);
        }
    }

    @Override
    protected Dialog onCreateDialog(int id) {
        switch (id) {
            case idd_text:
                AlertDialog.Builder builder = new AlertDialog.Builder(this);
                builder.setMessage(R.string.dialogMsg);
                builder.setPositiveButton("I got it!", new
DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialogInterface, int
i) {
                        dialogInterface.cancel();
                    }
                });
                builder.setCancelable(false);
                return builder.create();
            default:
                return null;
        }
    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/bacxk"
    tools:context="com.example.asusx501a.englishtenses.MainActivity">

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="center"
        android:background="#c1000000">

        <LinearLayout
            android:id="@+id/linearLayout"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerInParent="true"
            android:layout_margin="25dp"
            android:background="@drawable/lay_fon"
            android:orientation="vertical"
```

```xml
                android:padding="10dp">

            <TextView
                android:id="@+id/beginLearn"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
                android:background="@drawable/back_fon"
                android:clickable="true"
                android:gravity="center"
                android:padding="10dp"
                android:text="Begin learning"
                android:textColor="#ffffff"
                android:textSize="30sp" />

            <TextView
                android:id="@+id/helpBtn"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
                android:background="@drawable/back_fon"
                android:clickable="true"
                android:gravity="center"
                android:padding="10dp"
                android:text="Help"
                android:textColor="#ffffff"
                android:textSize="30sp" />

            <TextView
                android:id="@+id/infoTxt"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_margin="10dp"
                android:background="@drawable/back_fon"
                android:clickable="true"
                android:gravity="center"
                android:padding="10dp"
                android:text="About application"
                android:textColor="#ffffff"
                android:textSize="30sp" />
        </LinearLayout>
    </RelativeLayout>
</FrameLayout>
```

Tenses activity

```java
package com.example.asusx501a.englishtenses.Tenses_List;

import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.support.v7.widget.DefaultItemAnimator;
import android.support.v7.widget.GridLayoutManager;
import android.support.v7.widget.RecyclerView;
import android.util.Log;
import android.view.MenuItem;
import android.view.View;

import com.example.asusx501a.englishtenses.ExternalDbOpenHelper;
import com.example.asusx501a.englishtenses.MainActivity;
```

```java
import com.example.asusx501a.englishtenses.R;

import java.util.ArrayList;
import java.util.List;

public class Tenses_Activity extends AppCompatActivity {
    static final String Database_Name = "Tenses";
    private SQLiteDatabase database;
    private ArrayList<String> tense_name;
    private ArrayList<Integer> idTense;

    public int[] images = new int[]{R.drawable.present_simple,
R.drawable.simple_past, R.drawable.future_simple,
            R.drawable.present_continuous1, R.drawable.past_continuous,
R.drawable.future_continuous,
            R.drawable.present_perfect, R.drawable.past_perfect,
R.drawable.future_perfect,
            R.drawable.present_perfect_continuous,
R.drawable.past_perfect_continious, R.drawable.future_perfect_continuous};

    private List<Model> modelList = new ArrayList<>();
    private RecyclerView recyclerView;
    private RecyclerAdapter recyclerAdapter;
    public Intent intent;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_tenses);
        recyclerView = findViewById(R.id.recyclerView);
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);

        idTense = new ArrayList<>();
        tense_name = new ArrayList<>();

        RecyclerView.LayoutManager manager = new
GridLayoutManager(getApplicationContext(), 2);
        recyclerView.setLayoutManager(manager);
        recyclerView.setItemAnimator(new DefaultItemAnimator());
        recyclerView.setHasFixedSize(true);

        ExternalDbOpenHelper dbOpenHelper = new ExternalDbOpenHelper(this,
Database_Name);
        database = dbOpenHelper.openDataBase();
        Log.i("English tenses", "It is working");

        Cursor cursor = database.query("Names", new String[]{"id", "Name"},
                null, null, null, null, null);
        cursor.moveToFirst();
        if (!cursor.isAfterLast()) {
            do {
                int idt = cursor.getInt(0);
                idTense.add(idt);

                String nameT = cursor.getString(1);
                tense_name.add(nameT);
            } while (cursor.moveToNext());
        }
        cursor.close();
        for (int i = 0; i < 12; i++) {
            modelList.add(new Model(tense_name.get(i), images[i % 12]));
        }
        recyclerAdapter = new RecyclerAdapter(modelList);
```

```java
        recyclerView.setAdapter(recyclerAdapter);

        recyclerAdapter.setOnItemClickListener(new
RecyclerAdapter.OnItemClickListener() {
            @Override
            public void onItemClick(View itemView, int position) {
                intent = new Intent("Tense_Information");
                intent.putExtra("tenseId", idTense.get(position));
                intent.putExtra("tenseName", tense_name.get(position));
                startActivity(intent);
            }
        });
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        int num = item.getItemId();
        if (num == android.R.id.home) {
            Intent intent1=new Intent(this, MainActivity.class);
            startActivity(intent1);
            finish();
        }
        return super.onOptionsItemSelected(item);
    }
}
```

activity_tenses.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"

tools:context="com.example.asusx501a.englishtenses.Tenses_List.Tenses_Activity">

    <android.support.v7.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scrollbars="vertical" />

</android.support.constraint.ConstraintLayout>
```

RecyclerAdapter

```java
package com.example.asusx501a.englishtenses.Tenses_List;

import android.support.v7.widget.CardView;
import android.support.v7.widget.RecyclerView;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;

import com.example.asusx501a.englishtenses.R;
```

```java
import java.util.List;

public class RecyclerAdapter extends
RecyclerView.Adapter<RecyclerAdapter.MyViewHolder> {

    private List<Model> modelList;
    private static OnItemClickListener listener;

    public interface OnItemClickListener {
        void onItemClick(View itemView, int position);
    }

    public void setOnItemClickListener(OnItemClickListener listener) {
        this.listener = listener;
    }

    public class MyViewHolder extends RecyclerView.ViewHolder {
        public TextView name;
        public ImageView photo;
        public CardView cardView;

        public MyViewHolder(final View itemView) {
            super(itemView);
            cardView = itemView.findViewById(R.id.cardv);
            name = itemView.findViewById(R.id.textV);
            photo = itemView.findViewById(R.id.imgV);

            itemView.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view) {
                    if (listener != null)
                        listener.onItemClick(itemView, getLayoutPosition());
                }
            });
        }
    }

    @Override
    public MyViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {
        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.item_card_view,
parent, false);
        return new MyViewHolder(view);
    }

    @Override
    public void onBindViewHolder(MyViewHolder holder, int position) {
        Model model = modelList.get(position);
        holder.name.setText(model.getName());
        holder.photo.setImageResource(model.getPhoto());
    }

    @Override
    public int getItemCount() {
        return modelList.size();
    }


    public RecyclerAdapter(List<Model> modelList) {
        this.modelList = modelList;
    }
}
```

Model

```java
package com.example.asusx501a.englishtenses.Tenses_List;

public class Model {
    public String name;
    public int photo;

    public Model() {
    }

    public String getName() {
        return name;
    }

    public int getPhoto() {
        return photo;
    }

    public Model(String name, int photo) {
        this.name = name;
        this.photo = photo;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void setPhoto(int photo) {
        this.photo = photo;
    }
}
```

item_card_view.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <android.support.v7.widget.CardView
        android:id="@+id/cardv"
        android:layout_width="match_parent"
        android:layout_height="150dp"
        android:layout_marginLeft="5dp"
        android:layout_marginRight="5dp"
        android:background="@drawable/lay_fon"
        android:layout_marginTop="5dp"
        android:padding="2dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical">

            <ImageView
                android:id="@+id/imgV"
                android:layout_width="match_parent"
                android:layout_height="0dp"
```

```xml
            android:layout_weight="4"
            android:scaleType="fitXY"
            android:src="@drawable/ic_launcher_background" />

        <TextView
            android:id="@+id/textV"
            android:layout_width="match_parent"
            android:layout_height="0dp"
            android:layout_gravity="bottom"
            android:layout_weight="1.5"
            android:background="#92000000"
            android:gravity="center"
            android:text="Hello"
            android:textColor="#ffffff"
            android:textStyle="italic" />
    </LinearLayout>

</android.support.v7.widget.CardView>

</android.support.constraint.ConstraintLayout>
```

Info_Activity

```java
package com.example.asusx501a.englishtenses.Information;

import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.widget.TextView;

import com.example.asusx501a.englishtenses.ExternalDbOpenHelper;
import com.example.asusx501a.englishtenses.R;

public class Info_Activity extends AppCompatActivity {
    Intent intqabul;
    String tenseName, definition, example, formula;
    public int idsi, a;
    static final String DatabaseName = "Tenses";
    private SQLiteDatabase database;
    TextView defin, exampleV, formulaV, TenseName;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_info);

        intqabul = getIntent();
        tenseName = intqabul.getStringExtra("tenseName");
        idsi = intqabul.getIntExtra("tenseId", 1);


        ExternalDbOpenHelper dbOpenHelper = new
ExternalDbOpenHelper(Info_Activity.this, DatabaseName);
        database = dbOpenHelper.openDataBase();
        Log.i("Information Activity", "working");
        Cursor cursor = database.query("Info",
                new String[]{"id", "id_name", "Definition", "Example",
"Formula"},
                "id_name=" + idsi, null, null, null, null);
```

```java
            cursor.moveToFirst();
            if (!cursor.isAfterLast()) {
                do {
//                    a=cursor.getInt(2);
                    definition = cursor.getString(2);
                    example = cursor.getString(3);
                    formula = cursor.getString(4);
                } while (cursor.moveToNext());
            }
            cursor.close();
            TenseName = findViewById(R.id.nameTense);
            TenseName.setText(tenseName);

            defin = findViewById(R.id.txtdef);
            defin.setText("Definition: " + definition);

            exampleV = findViewById(R.id.txtEg);
            exampleV.setText("Example: " + example);

            formulaV = findViewById(R.id.txtForm);
            formulaV.setText("Formula: " + formula);
        }
}
```

activity_info.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"

tools:context="com.example.asusx501a.englishtenses.Information.Info_Activity"
>

    <TextView
        android:id="@+id/nameTense"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="Name of the tense"
        android:textSize="15sp"
        android:textStyle="bold|italic" />

    <ScrollView
        android:id="@+id/scrollV"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginLeft="5dp"
        android:layout_marginRight="10dp"
        android:layout_marginTop="15dp"
        android:orientation="vertical"
        android:paddingTop="5dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical">
```

```xml
        <TextView
            android:id="@+id/txtdef"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="5dp"
            android:text="definition"
            android:textSize="20sp" />

        <TextView
            android:id="@+id/txtEg"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="5dp"
            android:text="example"
            android:textSize="20sp" />

        <TextView
            android:id="@+id/txtForm"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="5dp"
            android:text="Formula"
            android:textSize="20sp" />
    </LinearLayout>
    </ScrollView>
</android.support.constraint.ConstraintLayout>
```

About_App

```java
package com.example.asusx501a.englishtenses.Information;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.MenuItem;

import com.example.asusx501a.englishtenses.R;

public class About_App extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_about__app);
        setTitle("About application");
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        int num = item.getItemId();
        if (num == android.R.id.home) {
            finish();
        }
        return super.onOptionsItemSelected(item);
    }
}
```

activity_about_app.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"

    tools:context="com.example.asusx501a.englishtenses.Information.About_App">

    <TextView
        android:id="@+id/textInfo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:gravity="center"
        android:text="@string/information_ab_app"
        android:justificationMode="inter_word"
        android:textAlignment="center"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</android.support.constraint.ConstraintLayout>
```

ExternalDbOpenHelper

```java
package com.example.asusx501a.englishtenses;

import android.content.Context;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStream;
import java.io.OutputStream;

public class ExternalDbOpenHelper extends SQLiteOpenHelper {


    public static String DB_PATH;

    public static String DB_NAME;
    public SQLiteDatabase database;
    public final Context context;

    public SQLiteDatabase getDb() {
        return database;
    }

    public ExternalDbOpenHelper(Context context, String databaseName) {
        super(context, databaseName, null, 1);
        this.context = context;

        String packageName = context.getPackageName();
        DB_PATH = String.format("//data//data//%s//databases//",
packageName);
        DB_NAME = databaseName;
        openDataBase();
    }
z
    public void createDataBase() {
        boolean dbExist = checkDataBase();
```

```java
        if (!dbExist) {
            this.getReadableDatabase();
            try {
                copyDataBase();
            } catch (IOException e) {
                Log.e(this.getClass().toString(), "Nusxalashda xatolik sodir
bo`ldi");

                throw new Error("Nusxalashda xatolik sodir bo`ldi!");
            }
        } else {
            Log.i(this.getClass().toString(), "Baza bor ekan");
        }
    }
    private boolean checkDataBase() {
        SQLiteDatabase checkDb = null;
        try {
            String path = DB_PATH + DB_NAME;
            checkDb = SQLiteDatabase.openDatabase(path, null,
                    SQLiteDatabase.OPEN_READONLY);
        } catch (SQLException e) {
            Log.e(this.getClass().toString(), "Bazani tekshirishda xatolik");
        }
        if (checkDb != null) {
            checkDb.close();
        }
        return checkDb != null;
    }
    private void copyDataBase() throws IOException {

        InputStream externalDbStream = context.getAssets().open(DB_NAME);

        String outFileName = DB_PATH + DB_NAME;

        OutputStream localDbStream = new FileOutputStream(outFileName);

        byte[] buffer = new byte[1024];
        int bytesRead;
        while ((bytesRead = externalDbStream.read(buffer)) > 0) {
            localDbStream.write(buffer, 0, bytesRead);
        }
        localDbStream.close();
        externalDbStream.close();

    }


    public SQLiteDatabase openDataBase() throws SQLException {
        String path = DB_PATH + DB_NAME;
        if (database == null) {
            createDataBase();
            database = SQLiteDatabase.openDatabase(path, null,
                    SQLiteDatabase.OPEN_READWRITE);
        }

        return database;
    }



    @Override
    public synchronized void close() {
        if (database != null) {
            database.close();
```

```java
        }
        super.close();
    }
    @Override
    public void onCreate(SQLiteDatabase db) {}
    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion)
{}
}
```