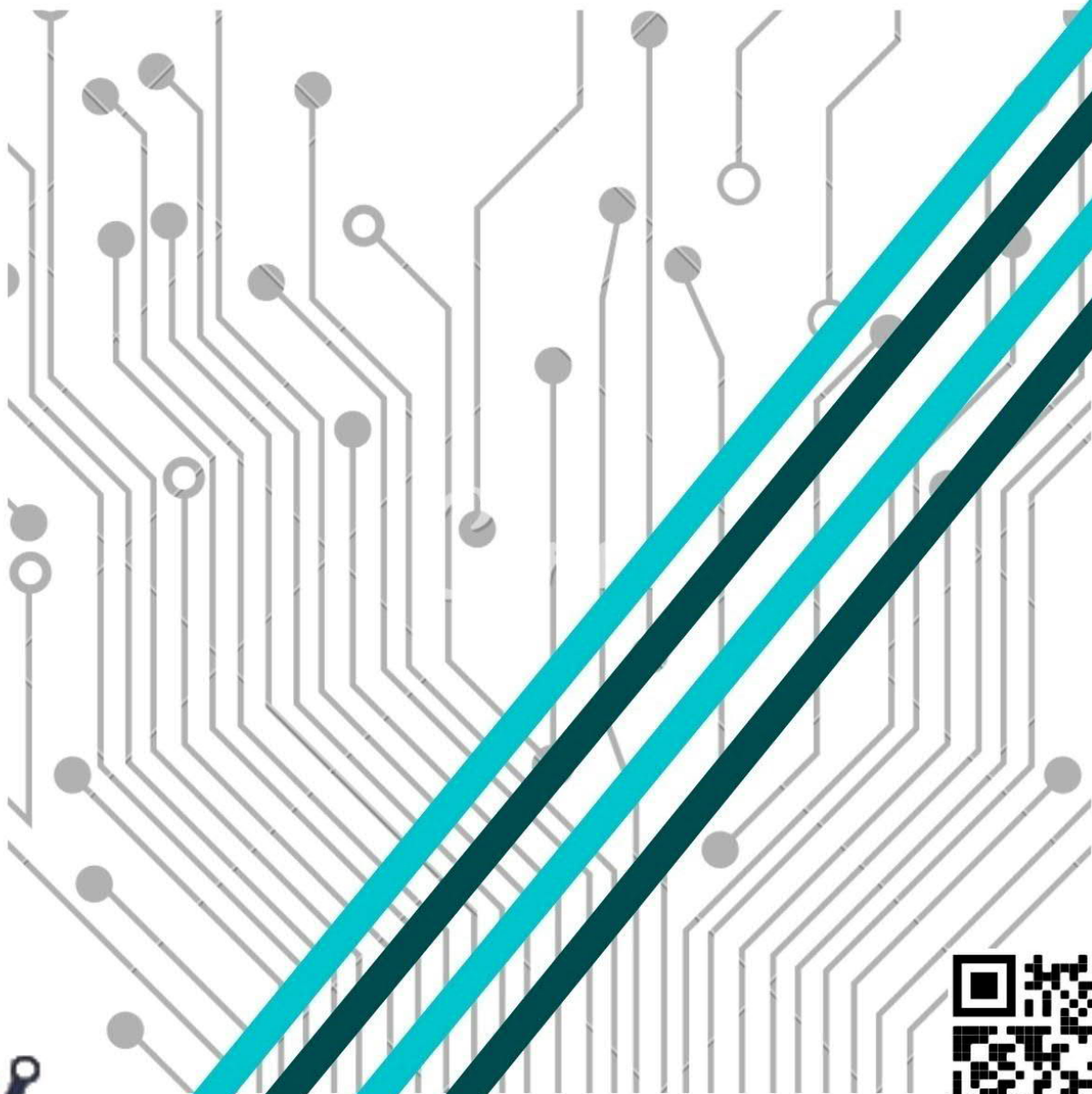


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## IRON DEFICIENCY ANEMIA MED ANDROID APP OPERATING TECHNOLOGY

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**Abstract.** This application helps to predict, analyze and get information about Iron Deficiency Anemia MED android app with performance technology. The working technology of the developed mobile application was created in the Kotlin programming language and the UI part in the XML markup language. The application takes the amount of hemoglobin in the blood, the number of erythrocytes as information, and when a special button is pressed, it automatically determines the result of the color index and makes a tentative diagnosis of iron deficiency anemia.

**Keywords:** Android application "Iron deficiency anemia MED", Kotlin programming language, BackEnd part, UI part in XML markup language, hemoglobin count, red blood cell count, iron deficiency anemia.

Today, there is rapid development in every field around the world. A clear example of how important information technology is today is the fact that every industry continues its work using the perspectives of the IT "Ayti" industry in this tense process, that is, industries are trying to digitize themselves. Including in the field of Medicine, efforts are being made to digitize this field not only in the world, but also in Uzbekistan. Several of the applications developed and won in the "mGovAward" competition held in our country were intended for the digitization of certain services in the field of medicine.

In July 2011, JetBrains introduced Project Kotlin, a new language for the JVM that had been in development for a year. Dmitry Jemerov, head of JetBrains, said that most languages, except for Scala, do not have the features they are looking for. However, he cited Scala's slow compile time as a drawback. One of Kotlin's stated goals is to compile as fast as Java. In February 2012, JetBrains open sourced the project under the Apache 2 license [1-4]. The name comes from Kotlin Island near St. Petersburg. Andrey Breslav mentioned that the team decided to name it after the island, just as Java is named after the Indonesian island of Java (although the Java programming language is named after coffee, not the island). JetBrains hopes that the new language will boost sales of IntelliJ IDEA. The first commit to the Kotlin Git repository was on November 8, 2010. Kotlin 1.0 was released on February 15, 2016.



Fig 1. Application IDAMED

This is considered the first official stable release, and JetBrains has committed to long-term backwards compatibility starting with this release. At Google I/O 2017, Google announced first-class support for Kotlin on Android. Kotlin 1.2 was released on November 28, 2017. New in this release is the ability to share code between JVM and JavaScript platforms (an alpha feature upgraded from cross-platform programming "experimental" from version 1.4).

Created a full-stack demo with the new Kotlin/JS Gradle plugin. Kotlin 1.3 was released on October 29, 2018 and brought coroutines for asynchronous programming. On May 7, 2019,

Google announced that the Kotlin programming language is now the preferred language for Android app developers. Kotlin 1.4 was released in August 2020, with minor changes to support for Apple platforms such as Objective-C/Swift interop [5-8].

Kotlin is a cross-platform, statically typed, general-purpose programming language with type inference. Kotlin is designed to be fully interoperable with Java, and the JVM version of the Kotlin standard library depends on the Java class library, but type inference allows its syntax to be more compact. Kotlin primarily targets the JVM, but compiles JavaScript (for example, for frontend web applications using React) or native code via LLVM (for example, for native iOS applications that share business logic with Android applications).



Fig 2. Application IDAMED

The cost of language development is covered by JetBrains, while the Kotlin Foundation protects the Kotlin trademark. On May 7, 2019, Google announced that the Kotlin programming language is now the preferred language for Android app developers. Since the release of Android Studio 3.0 in October 2017, Kotlin has been included as an alternative to the default Java compiler. The Android Kotlin compiler produces Java 8 bytecode by default (which will run on any later JVM), but allows the developer to target Java 9 to 18 for optimization, or allows more features;

Introduced in Java 16, it supports two-way interop for the JVM, which is considered stable in Kotlin 1.5.

Kotlin supports the web; By compiling to JavaScript (ie, the classic backend Kotlin/JS has been declared stable since version 1.3), while the new (IR -based) Kotlin/JS is in beta since version 1.5.30. Kotlin/Native (ie: Apple silicon support) is beta since version 1.3. "We looked at all the available JVM languages and none of them met our needs. Scala has the right features, but its most obvious shortcoming is that it compiles very slowly," said Dmitry Jemerov, head of development at JetBrains. "Other languages don't meet some of our feature set requirements. Additionally, Kotlin's early adoption shows that the community trusts JetBrains and expects it to do well in terms of language implementation and tooling support.

The company says in its Kotlin documentation that while it knows how good Java is, there are limitations and problems with the Java programming language that are either impossible or too difficult to solve due to backwards compatibility issues. JetBrains believes that the community can benefit from a new statically written JVM-targeted language that is free of legacy issues and has the features that developers really want. JetBrains wanted object-oriented Kotlin to be safer than Java, statically check for traps like null pointer changes, and be more compact than Java. Another goal is to make it simpler than its most mature competitor, Scala. Kotlin was praised by an analyst who questioned how many children he could adopt.

"Kotlin's goal is to fix some of the problems developers have with Java," said Forrester analyst John Rymer. Many of the features seem to be trying to simplify the creation of complex applications and pack more power into each line of code, which are useful goals, but I doubt many people will abandon Java and adopt Kotlin. i do Additionally, many of our customers have standards that prevent the adoption of new languages like Kotlin for many years [9-13].

Both the compiler for the language and the IntelliJ Idea plugin are available as open source under the Apache license. Kotlin libraries can also be developed. JetBrains plans to extend the language in several ways, from built-in functions to annotations, type loaders, and language quotes. The name "Kotlin" comes from an island near St.

Petersburg, Russia. JetBrains has research and development operations in the city. This article, "JetBrains prepares JVM-based language" was originally published on InfoWorld.com. Stay up-to-date with the latest developments in business technology news and receive a daily roundup of key events in the InfoWorld Daily newsletter. You can follow InfoWorld.com on Twitter for the latest developments in business technology news.

This is the origin of our small android application.

This application was developed with the support of our teacher Valijon Maksudov Gafurjanovich.

IDAMED – Iron Deficiency Anemia MED application is an android application that determines the level of Iron Deficiency Anemia based on several data. This application takes the amount of hemoglobin in the blood, the number of erythrocytes as information, and when a special button is pressed, it automatically determines the result of the color index and makes a tentative diagnosis of iron deficiency anemia, that is, filling out a specially indicated questionnaire and providing the necessary information. after entering the data, it will output something like below.

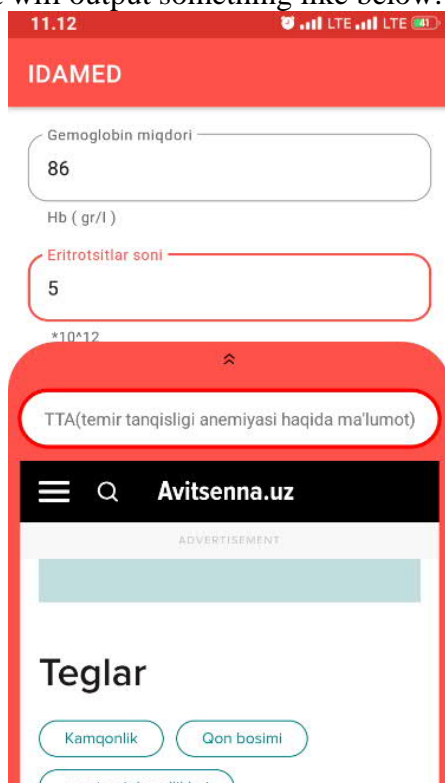


Fig 3. Application IDAMED

You have moderate hypochromic anemia, and the conditions observed in you such as "headache, weakness, dry mouth" may be caused by this disease. At the end of the program, information about this disease and preventive information will be shown, this information will be downloaded from a special site on the Internet.

Although this application is very small. Wrote some code for development. The application was created in the Android Studio programming environment in the Kotlin programming language and the UI part in the XML markup language. Codes were written for a month based on certain algorithms. The size of the program was 6 MB, mainly the animations used in the program (downloaded from the Lottifiles network) and images occupied more space than the written codes. Below are examples of code used in our program written in the Kotlin programming language.

**In conclusion**, it should be noted that the above codes are part of the codes that work in our program. The main goal of the project is to digitize a part of the medical field, that is, to create innovation for the user through digitalization. Even now, activities are being carried out to expand the facilities of the project.

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