

ADVANTAGES OF USING THE MIT APP INVENTOR PLATFORM FOR CREATING MOBILE APPLICATIONS

Dilsuz Bakhadirovna Khujamkulova

Student, Faculty of Exact Sciences, Jizzakh State Pedagogical University

Khurram Ergashevich Tangirov

*Associate Professor, Department of Technology and Information Systems, Jizzakh State
Pedagogical University*

Abstract: This article examines the challenges that arise in teaching mobile programming, as well as the advantages and methodological principles of using the MIT App Inventor platform to overcome them. MIT App Inventor is an intuitive visual programming environment that allows anyone, even children, to create fully functional apps for Android phones, iPhones, and Android/iOS tablets.

Keywords: MIT App Inventor, mobile programming, innovative technologies, programming education, visual interface, blocks.

INTRODUCTION

In the current digital age, mobile applications have become an integral part of human life. The need to use mobile applications in various areas of daily life - education, healthcare, trade, transportation, social networks, etc. is increasing. At the same time, the study and application of mobile application development technologies is also becoming popular among the general public. The App Inventor platform created by MIT (Massachusetts Institute of Technology) has made creating a mobile application a simple, fast and convenient process.

This article will consider the main features and advantages of the MIT App Inventor platform, the convenience of its use, and the aspects that create a comfortable environment for learning it.

Digital technologies are rapidly advancing these days. Mobile apps have become an integral part of people's lives. They are widely used in many areas, including healthcare, education, services, retail, and personal needs. While mobile app development was once considered the preserve of professional programmers, today even inquisitive students can bring their ideas to life. However, many young people find this process difficult and are intimidated by the idea of programming. As a result, their interest in programming declines, and their opportunities for practical experience are limited.

MATERIALS AND METHODS

Students initially believe they need to learn languages like Java or Kotlin to create a mobile app. Therefore, they are uninterested in learning programming. Some start with Python because it is syntactically simpler, but the capabilities of creating full-fledged mobile apps in Python are limited. This reduces their chances of achieving practical results.

At this stage, MIT App Inventor, thanks to its simplicity and intuitive interface, serves as an effective tool for introductory programming lessons. When teaching mobile programming, lessons often rely on theoretical knowledge or writing complex code. Students spend a lot of time learning programming languages. Creating an app requires steps such as learning syntax, designing an interface, and binding functions. Because this process is time-consuming, students become tired and lose interest. As a result, they have difficulty translating their ideas into practical applications or find programming difficult. MIT App Inventor simplifies this process and makes lessons more engaging. It eliminates the need to write code to create a mobile app; all actions are performed using blocks. Students can quickly create a game, quiz, or utility based on their own idea and test the results on their phone. This makes the lesson practical and interactive. Because students can immediately see the results of their work, their enthusiasm and interest are heightened. Thus, MIT App Inventor is a tool that makes the learning process fast, engaging, and effective.

Thus, we've analyzed the main challenges faced when teaching mobile programming and concluded that the MIT App Inventor platform can be an effective solution for each of them. Now let's take a closer look at the platform itself, its capabilities, and its role in the learning process.

MIT App Inventor is primarily intended for those who are just learning to program, especially schoolchildren, teachers, and students. One of its main advantages is its visual block programming environment. In this case, the user can create an application by combining various functions using blocks without writing code.

Through block programming, users: Understand the logic of the program without writing complex code; Detect errors faster; Have the opportunity to immediately test the created application.

These aspects are especially important in attracting young programmers to programming.

MIT App Inventor allows the user to quickly turn their idea into a prototype. This is very useful for startup projects or teaching processes.

The platform offers the following advantages:

Real-time testing: The edited application can be viewed and tested immediately on the phone.

Drag-and-drop interface: The programmer can easily create a user interface.

Online work environment: The programmer can work only via the Internet, without installing any programs on the computer.

This not only saves time, but also allows you to try new features based on experience.

RESULTS AND DISCUSSION

The MIT App Inventor platform is a very effective tool for educational processes. It can be used in schools, colleges and universities for the following purposes: Formation of algorithmic thinking; Teaching programming through practical exercises; Use for developing and presenting student projects.

Also, the partial translation of the platform into Uzbek reduces the language barrier in teaching. Teachers can create interactive lessons on various topics and involve students in creative work.

The number of MIT App Inventor users is in the millions. The platform has a large community, where users: Share experiences with each other; Collaborate on various projects; Use ready-made blocks and components.

There is also a wide range of opportunities to continue learning through the official MIT website, YouTube channel, forums and open tutorials. This encourages the user to work independently.

Although MIT App Inventor seems simple in terms of programming capabilities, it also has advanced capabilities: Work with the Firebase database; Work with sensors (GPS, accelerometer, camera); Processing multimedia, network and user data.

Also, since the platform is open-source, advanced users can customize the system or create new components.

MIT App Inventor is an online platform that allows anyone to create mobile apps without knowledge of complex programming languages. MIT App Inventor was originally created by Google in 2007, and in 2012 the project was transferred to the Massachusetts Institute of Technology (MIT). The platform was designed to simplify the process of creating mobile apps.

The main advantage of MIT App Inventor is that the programming process is visual. Instead of writing code, users connect blocks of different colors to create the application logic. This approach simplifies programming and develops logical thinking in students.

You can access MIT App Inventor through the official website. MIT App Inventor can be used not only on a computer but also on a mobile phone, making project creation convenient

for students anywhere. You can also download the platform to your mobile phone and use it offline. The MIT App Inventor platform consists of two main parts:

In the designer window, the user places the app's visual elements, such as buttons, text fields, images, and other elements. This process is performed using the standard drag-and-drop method, so no coding is required.

In the blocks window, the user defines how the app will work. Here, blocks of different colors are connected to each other, forming the app's logic. For example, pressing a button can perform a specific action or change text.

After completing the app creation process, the finished app is downloaded via a QR code and immediately tested. These conveniences make MIT App Inventor a simple, fast, and effective tool for teachers and students.

Apps created with MIT App Inventor can be useful not only in the educational process but also in everyday life. For example, you can create a calculator, a quiz creator, or gamified educational programs. Therefore, this platform provides excellent opportunities not only for learning but also for developing creativity.

Using MIT App Inventor to effectively teach mobile programming is important for developing students' practical skills. When organizing the lesson, special attention is paid to students' interests, their level of preparation, and a focus on practical activities.

First, students are given an overview of a mobile app, its importance in everyday life, and its application areas. Then, they are introduced to the MIT App Inventor environment and its main elements—the Designer and Blocks windows. Each new topic is reinforced with practical exercises.

Initially, students work on simple projects: for example, creating a computing program, a clock, a test, or a simple game. These projects gradually increase in complexity. This approach develops students' independent work and problem-solving skills.

With an interactive lesson structure, students exchange ideas, collaborate, and generate creative ideas. The student participates in this process as a mentor and consultant.

The assessment considers the completeness of the student's project implementation, the originality of the idea, design, and functionality. Most importantly, the student will be able to present their application and defend their work.

Training in MIT App Inventor thus allows students not only to master programming but also to develop creativity, analytical thinking, and the practical application of digital technologies. In other words, in the modern digital age, teaching mobile programming is becoming an important aspect of the educational process. Effective organization of these classes

requires the use of convenient, simple, and understandable tools. MIT App Inventor is one such tool that fosters students' hands-on activities, independent thinking, and technological creativity.

CONCLUSION

Using the platform, students can turn their ideas into a tangible product—a mobile app. This makes the learning process not only engaging but also results-oriented. For educators, MIT App Inventor allows them to simplify and convey complex programming concepts. Overall, integrating MIT App Inventor into the educational process will foster new approaches to teaching mobile programming, improve students' digital literacy, and prepare them for their future careers.

MIT App Inventor is a simple, interactive, and innovative tool for building mobile apps, especially for beginners and students. It allows you to create useful, interactive, and aesthetically pleasing apps without having to know programming.

The platform's ease of use, visual interface, real-time testing capabilities, large community, and openness make it a great choice for both education and practice. Anyone who wants to learn how to build mobile apps can start with MIT App Inventor.

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