

## Research on Software Development Method based on Android Platform

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**Abstract:** With the development of science and technology, smart phones have become an important means for people to obtain information by virtue of their powerful ability to acquire and process information anytime and anywhere. At present, the Android platform has become more and more open and convenient, which makes the Android platform adopting the Android platform gradually gain the favor and recognition of consumers, and it occupies an important position in the field of smart phones. The paper first expounds the characteristics of the Android application, then analyzes the key technical issues in the development process of the Android platform application software, and finally builds the Android platform software development environment for reference.

### 1. Introduction

With the rapid development of science and technology in the current social economy, smart phones have gradually occupied the mobile phone market and gained recognition from a large number of users. And its app is the most critical factor for Android phones to get users. For the entire Android application, it is mainly based on the development of the Android Framework level, and uses the Java programming language. Therefore, it is necessary to study the Android platform software development method. It can not only provide effective guidance for the development of mobile software in the future, but also help more software development to join the Android platform, thus expanding the development of the Android platform. space.

### 2. Android application features and analysis of key issues

Android applications have the following four features: In the default state, each program will run in the Linux process. When the application executes the code, Android will start a process until the system resources are insufficient. Android will only close this program when the code asks to exit; for each process, it will run in a separate Dalvik Virtual; also in the default state, each application will be given a Linux User ID, combined with this permission setting, ensures that only the program can access its own questionnaires; in some special cases, two programs can be used for a Linux User ID. Co-used to achieve mutual access to application files. In order to achieve effective savings on system resources, Android combines two applications into one application to share a VM.

When the Android system of the mobile phone is in a secure environment, if the settings in the system are the default settings, the application software on the platform does not have any authority on the information of the device holder, the operating system on the device, and the externally introduced application software. For example, the user browses webpage traces and the like. Therefore, in addition to artificially setting some permission settings, applications in the Android system will not interfere or deploy other applications. If the user wants to obtain permission, he should pay attention to the following points: 1 naming the privilege, in the Android application of the mobile phone, select a permission system associated with the device, in this environment, the device can be controlled and some operations are performed, usually in Add the <uses\_permission> tag to the AndroidManifest.xml file to declare permissions; 2 Select the permissions in the AndroidManifest.xml file that support native operations, in this case, re-apply the application and some action buttons on the phone. After setting, after the user wants an application or webpage, the related permissions can be declared in advance. The common permissions currently have Activity

permission and BroadcastReceiver permission.

The Android system also has problems with interface generation. Users are now getting more and more aesthetic requirements, and the quality of the Android interface is constantly improving. There are two main ways to generate Android interface. One is to use code generation directly, and the other is XML configuration generation. From the MVC selection generated by the Android system interface, the generation interface is to separate the UI from the program logic. The flight attendant generally chooses to define the UI interface in XML, and the obtained Android interface can be easily converted from one interface to another. The basic function of the application running in the Android system is Activity, which is not displayed on the interface. It is only designed when UI is generated when the interface is generated. The basic elements of the program are expressed on the Android platform, and the relationship between them is designed. In this way, the Activity function can be displayed on the interface. When solving the layout object problem, the main methods are linear layout, absolute layout, relative layout, and table layout.

### **3. Development technology based on Android platform**

**Interface Development Technology Terminology** The most basic type of technology in software development technology, which is used by most applications. Because the interface quality usually directly affects the user's intuitive visual experience, a good interface can effectively enhance the user's good experience, which in turn promotes the application of the software. Interface development in Android platform software development specifically includes XML file layout, creation of dynamic code, and self-draw. 1 Create dynamic code, in the actual development process, you need to create a corresponding dynamic spatial layout, specifically using LayoutInflater to achieve the purpose of dynamic interface creation. 2 XML file application is mainly used in Aetvity when the interface is developed. This type of software development technology is more common and the scope of use is very wide. When using XML files for software development, you must fully understand the degree of beautification of the interface, because some spaces in the system can not really meet the requirements of the software itself for interface beautification, so you need to use background addition and picture replacement to achieve the beautification effect of the interface. At the same time, you can directly construct the interface style required by the software in the Layout, and then directly load the whole process of loading the control and corresponding parameters with the actual interface requirements of the software. 3 interface draws by itself, this method is mainly used in game software development. It is generally directly inherited from SV to achieve drawing, and thus draws a specific scene interface in the game, which effectively improves the development quality of game software. .

At present, the mobile intelligent terminal under the Android platform has powerful voice recognition function, and many users only need to issue some simple language instructions to realize short message, email transmission, telephone dialing, and even navigation information in a simple language. Operation. Moreover, the games in some Android platforms can also be operated directly by means of speech recognition. It can be seen that this speech recognition technology has fundamentally and effectively improved the existing interaction behavior of human-machines and prompted the operation of users. More convenient. The speech recognition technology mainly uses the ReecognizerIntent to realize the recognition of the user's voice. Generally, some constants are used to express the mode of the voice. The speech recognition technology under the Android platform specifically includes the following aspects: 1 Intentgt is used to call the speech recognition program. After recording and recognizing, the recognized string is returned to the corresponding user program, thereby The process of making speech recognition is completed. 2 The application calls the recognition library by itself, and the program itself will obtain the final result of the recording in a loop form, and then recognize the string. 3 Call the voice Servicee to recognize it. After the recording is finally completed, it will be returned to the corresponding application through the Listener through the character string recognition, so as to ensure that it can truly meet the requirements of the relevant application.

The data storage technology in the Android platform is the whole process of processing and

invoking internal data. There are many types of data storage technologies in the Android platform, including internal data storage of mobile phones, external data storage of mobile phones, network data storage and SQLite. Data storage and more. Often users are familiar with internal data storage and external data storage, but in the Android platform software development process, the most used is SQLite data storage. Because this storage method is not cumbersome in itself, and the real creation process is very fast and simple, it is also very convenient to use. Compared with other types of storage methods, it is easier to realize exclusive access to the database. Specifically, the file storage of the Android platform is based on the Linux file system to create the corresponding private file type. This private file is usually only provided to the application for access, and the data is implemented on this basis. storage. The file itself can be saved on the internal memory as well as on an external memory card.

#### **4. Android development environment construction process**

From the above requirements, we can see that when the programmer officially designs and implements a certain software, he must first set up the Java runtime environment, install Eclipse and plug-in ADT, install the Android SDK, and configure Android AVD. This will be explained in detail below. 1 Set up the Java runtime environment, because the software development tool Eclipse programming language is Java, so before installing the Eclipse program, build the Java environment, ensure that the programming tool Eclipse can run safely, build the Java environment and install the latest program JDK, The program can set variables for Java; 2 install the program writing tool Eclipse, the program can be downloaded from its official website, install according to the software installation instructions, set some conditions, the conditions are determined according to the scope of work of the programmer, and finally To install the plug-in ADK; 3 install the Android SDK, the Android SDK is the resource data that may be used for the Android software development process, in the form of a collection package, is an important component in the Android software development process, download the Android SDK data on the official website. After the package, install, and set the relevant variables, connect the Android SDK and Eclipse two applications; 4 properly configured AndroidAVD, the program belongs to a simulator, the target must be developed before the application, there are two main types: platform and add-on, the former belongs to the Android platform target, while the latter belongs to the Android plugin target.

#### **5. Conclusion**

For the entire Android application, it is mainly based on the development of the Android Framework level, and uses the Java programming language, so it is necessary to study the Android platform software development method. This article has a certain guiding role based on the research and application of Android platform software development. It can not only provide effective guidance for the development of mobile software in the future, but also help more software development to join the Android platform. Taiwan's development and expansion space.

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