

# Design and Implementation of Tourism English Learning System Based on Android Platform

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**Abstract**—In the Internet age, in order to meet people's learning needs at any time and any place, online learning system is favored by people. Therefore, more and more colleges and universities are trying to develop online learning system of tourism English based on Android platform, which is convenient to improve the learning efficiency and interest of tourism English majors. Through online and offline teaching and its auxiliary tools, the coordinated development of tourism English teaching and ideological and political education can be achieved. Based on this, this paper introduces the common key technologies of mobile learning system, and introduces the design and implementation of online learning system of tourism English from the aspects of favorites module and audio playback module, so as to provide corresponding reference and help for the design of tourism English learning system in colleges and universities.

**Keywords**-Android; Tourism English; University education; Learning system

## 1 Introduction

With the continuous development of mobile terminal and mobile Internet technology, the price of Android-based mobile terminal is reduced, and the charges of WIFI wireless network and mobile network are reduced, which makes mobile Internet 4G fully integrated into people's lives. In order to effectively improve students' learning efficiency, more and more colleges and universities begin to introduce mobile Internet technology into daily teaching work [1]. In the teaching of tourism English major in colleges and universities, the online tourism English learning system based on Android platform can also be introduced, which enables students to study at any time and any place. China elements such as splendid China culture, excellent China tradition and great China spirit are added to the platform to help students establish a correct world outlook, outlook on life and values in a subtle and silent way, so as to maximize the invisible ideological and political function of the course, realize full-time, full-course and all-round education, and thus improve the overall learning efficiency of students. Therefore, how to design and implement the tourism English learning system based on Android platform has become the focus of many scholars.

At present, the development speed of mobile Internet has obviously accelerated, and the production of intelligent terminal equipment has increased significantly. In 2016, the global sales of smart phones reached 1.47 billion units, up 2.3% year-on-year, and the proportion of devices using Android system reached 76%. The large-scale development of intelligent devices has laid a good foundation for mobile learning and promoted the development and progress of

mobile learning [2]. In addition, the mobile Internet has also changed the interaction mode between people. Reasonable application of multimedia English teaching resources and interactive knowledge transfer methods can effectively stimulate students' learning enthusiasm. Tourism has a strong professionalism, which not only has many technical terms, but also involves many aspects of knowledge such as culture, geography and social context. This requires teachers to not only impart students' professional knowledge, but also enrich students' horizons. Therefore, more and more scholars begin to discuss online English learning methods to improve students' overall learning efficiency [3].

On mobile language learning, domestic and foreign scholars have carried out active research. The foreign Stanford experimental group has carried out a series of research projects on mobile education. In this project, two methods, cell phone call and email transmission, were used to teach Portuguese, which was successfully realized. The SMS Learning project launched by Thornton, a scholar, indicates that classroom knowledge points can be transmitted to students' mobile devices by short messages. Scholars Peterson and David Tiny put forward the teaching method of mobile blog, saying that students in different time and space can enjoy the same resources by using blog system. Domestic scholars have also conducted in-depth research. Scholar Zhang Xianzhen tried to study the application of Android platform English learning system in primary school English teaching, believing that it can effectively stimulate students' learning enthusiasm and improve students' learning efficiency. Scholars Li Xiangdong believe that online mobile learning system can break the limitations of traditional education in terms of region and time, so that students can get learning experience anytime and anywhere, which is of positive significance to complete lifelong learning. It can be seen that the mobile learning system based on Android platform really helps to improve the personal knowledge level of tourism English majors.

## **2 Key technologies of mobile learning system development based on Android platform**

### **2.1 OAUTH technology**

OAUTH technology is a relatively safe, open and convenient user resource authorization protocol, and all Internet companies can provide OAUTH authentication services. The mobile learning system is authenticated by OAUTH, and has the right to browse the resources authorized by users. It is relatively convenient, and it can ensure that the user information will not be leaked, so it has high security.

### **2.2 J2ME technology**

This system is developed by J2ME technology, which is a technology developed by applying Java to mobile communication devices, embedded devices or consumer appliances [4]. Because the technology is open and the source code is open, the system can be completed across platforms. The research and development of mobile learning system based on Android platform is more suitable for J2ME technology, which is easy to migrate to other platforms such as WindowsPhone. At the same time, it can apply local protocol as soon as possible to call the information data stored in the client for users to consult, and download all kinds of information data through the Internet when the system needs, which can save traffic and bandwidth.

### **2.3 RSS technology and SAX technology**

RSS is a data exchange rule for sharing news and other Web content, which originated from the "PUSH" technology developed by Netscape Communications. By using RSS technology, the related content subscribed by the client can be directly transmitted to the client of the mobile learning system. The XML transmitted by RSS can be parsed by SAX technology, which is the most convenient and lightweight way to read and manipulate XML information data.

### **2.4 Android background Service technology**

Service is a service that runs in the background and is not used by users interactively. Service can't run independently and actively, but it must be called through Activity or other Context targets, and the Service should be driven by Context.startService in certain learning clients. The student Android client running in the background service can be started quickly, while ensuring that the pushed information data can be obtained at the first time.

## **3 Implementation of key modules of tourism English learning system based on Android platform**

### **3.1 Implementation of favorite module**

The Favorites module should have the following functions: collecting lists, deleting collections and refreshing favorites, etc. Students can directly save the relevant knowledge of tourism English that they are interested in in their favorites, so as to facilitate repeated learning afterwards, including the translation of some national places of interest and famous places, proper nouns, etc. Delete options need to be added to all lists, and users are allowed to facilitate the title and content of articles [5]. Because it is necessary to design the click event response for all delete options in the list, and the default listviewwidget provided by Android system cannot respond to the click event of internal control files in the list. Therefore, to realize the control event in the ListView, it must inherit the BaseAdapter to complete its own customized Adapter, apply this Adapter to associate with the layout and data of all list items, and associate it with a defined listview, which can be directly displayed on the screen.

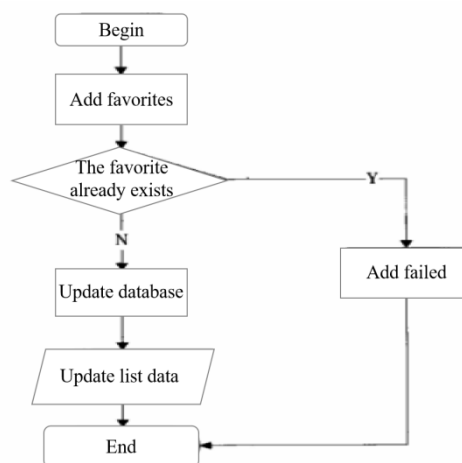
The layout code of favorites is mainly stored in the showlist\_listview.xml file, and its definition includes the necessary controls for displaying the contents of list Item: the title of the article is represented by TextView, the content of the article is represented by TextView, the delete button is displayed by ImageButton control, and the custom Adapter is associated with ListView. In addition, the layout file defines the refresh button and refreshes auxiliary contents such as progress bar.

The realization of favorites function focuses on the interaction with the database. The information data added by the user is placed in the data table tb\_Favourite. By adding favorites, the basic information in blog posts can be saved in the data table. By deleting, the corresponding entries in the data table can be deleted, and the display status of favorites list can be updated in time. Because the titles of all appearances are unique, you can delete them by using the search title. In the process of confirming the addition of favorites, in order to ensure the immediacy of the collection, only the title, introduction and audio name of the article are saved in the database,

instead of downloading the audio and all the original texts at the same time. When students open the favorites list, they should also get the original texts and audio materials through the network [6].

Favorites interface is placed in the main interface, because favorites can't be updated in time, but they are easy to access. Therefore, during the development period, in order to minimize the time spent in the interaction between the application and the database, favorites interface is designed to be updated automatically, instead, students are reminded to update manually after being updated. In addition, it is necessary to define a flag bit in the main interface. When adding or deleting favorites in the main interface, the flag will be set to true, and the favorites will be automatically updated in the process of opening the favorites interface.

In the process of deleting favorites, in order to avoid the problem of students' non-operation, the interface needs to be designed with a prompt box. After the AlertDialog target is defined, the deletion can be performed only after the students confirm it. Add collection flow chart is as follows:



**Figure 1** Diagram of adding collection process

### 3.2 Implementation of the audio playback module

The audio playing module is an important module of the system, it can provide users with various audio-visual materials, which is convenient for students to learn, such as videos of tour guides introducing local attractions and micro-lessons made by teachers [7]. The specific implementation mode is as follows:

The audio playing function can be realized in the PlayAudio class, which inherits the Activity class to display a brand-new interface. After the Activity is created, the original address and audio address of the previous Activity are transmitted by Extras, and the original address is collected to form a connection with the corresponding webpage, so as to obtain an Html file. The original content is retrieved from the Html file and displayed in the TextView in the layout, and the audio address is combined to connect with the audio file. The playback is performed by buffering and playing at the same time. In the process of network connection, jsoup class library

is used. jsoup is a Javahtml parsing device, which can directly obtain HTML text content. At the same time, it provides a set of convenient API for developers to apply the content in HTML files. And the local code contents of all the original texts are as follows:

```
docText=Jsoup.connect(mTextLink).get();
esTitle=docText.select(".pod_title");
esDate=docText.select(".date-header");
textBrief=findBrief(docText.html(),"AudioIndex:","pod_body","</span>")[0];
textTitle=esTitle.get(0).text()+"<br/>"+esDate.get(0).text();
```

The method of audio file connection is consistent with the above method. After audio connection, all functions in the process of audio playback are realized by using Media Player API supplied by Android system. Media category provides audio preparation, pause and retrieval, and also provides supervision events of preparation status, playing and buffering progress, which facilitates audio processing. Audio playback and retrieval methods are as follows:

```
mMediaPlayer = new MediaPlayer(); /Build a MediaPlayer object
mMediaPlayer. setDataSource(mAudioName);Complete the media file path initialization
mMediaPlayer.prepare0; /Prepare audio
mMediaPlayer.start();Start and continue to play
mMediaPlayer.seekTo(int)(pbTimeProgress.getProgress()* 1.0/
pbTimerogress.getMax0 * mMediaPlaye.getDuration0)); /Search for the playback progress
```

The playing time should be displayed dynamically, so that students can retrieve the target playing progress in time. Therefore, the current playing progress of the audio should be retrieved in all 1s in the thread and updated in the UI. Because UI changes can't be designed and changed in other threads except the main thread, it's necessary to apply the message transmission system, and use the Handler target to handle the information sent by the new thread on the handleMessage () interface.

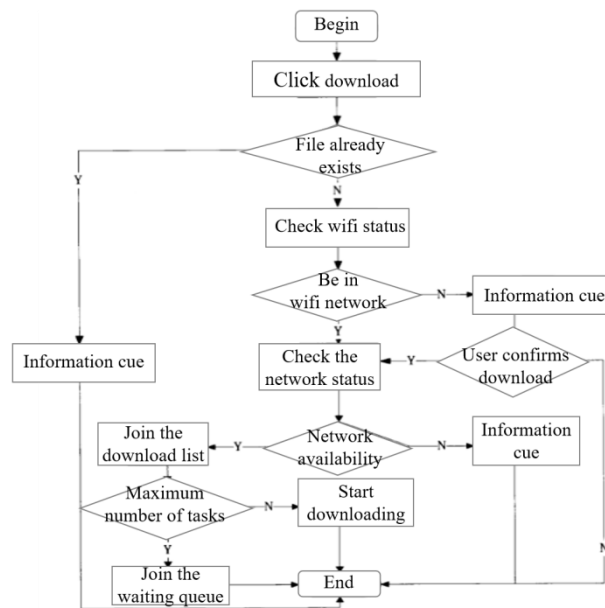
In order to ensure the efficiency of program implementation and the friendly interface of students, when implementing some relatively time-consuming operations, the time-consuming operations should be carried out in new threads as far as possible without affecting the program logic.

### **3.3 Implementation of download module function**

The downloading of files is completed by RandomAccessFile, which supports random reading and editing of information data, so you can specify any location of files to carry out reading and editing operations. Compared with the sequential access of FileInputStream and FileOutputStream, it is a cursor, which can also be called a file pointer, and can specify the cursor position to locate and obtain the necessary information data as soon as possible. Listen to the network download audio and get the specified URL network information data stream, and edit and save it in SD card.

In order to complete the multi-thread and multi-point download, several threads are used to complete the download task, and the download task is allocated to each thread equally. All threads use the above random reading method to realize the download, and the download task is also completed after all threads download.

In addition, the download length of all threads in the task must be saved immediately, and all information data should be saved in tb\_filedownload data table, which contains the name of the downloaded file, thread id, downloaded length, etc. After the program has been avoided to quit or the network is suddenly abnormal, the download breakpoint cannot be saved in time, so that after the program is started subsequently, the system can obtain the corresponding breakpoint from the database and continue downloading. The audio download process is as follows:



**Figure 2** The program flow of downloading audio

## 4 Conclusion

At present, the development of Internet economy has obviously accelerated, and various mobile terminals are used more frequently, which also provides many conveniences for the teaching of tourism major in colleges and universities. Therefore, all colleges and universities should attach importance to the research and development of tourism English teaching system based on Android, which will provide convenience for the comparison teaching and further improve the quality of tourism English teaching in colleges and universities.

**Acknowledgments.** At present, the development of Internet economy has.

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