

Research Article**Recognition System of Herbal Medicine on Mobile Terminal Based on Android Platform****Jinxin Pan¹, Xizheng Bao¹, Baobao Chai¹, Ruixue Song¹, Yingjie Liu^{1,2}, Yuan Li¹, Wenwen Zhang¹, Ju Huang¹, Chen Yuan¹, Lanhua Zhang^{1*}**¹Department of Information and Engineering, Taishan Medical University, Taian Shandong, China²Logistics School, Beijing Wuzi University, Beijing, 101149, China***Corresponding Author:**

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Abstract: In order to recognize the Chinese herbal medicine our side and to provide the help for the Chinese herbal medicine lovers, we design a kind of recognition system of herbal medicine by our mobile terminal based on the Android platform. By the application software in our mobile terminal we achieve the Chinese herbal medicine recognition application to meet the requirements of Chinese herbal medicine. The application is focus the functions on storing the information of Chinese herbal medicine by database and querying the information from the database so as to recognize the Chinese herbal medicine by comparison. The system is accomplished with Android platform and Java programming. By the application, we can recognize the Chinese herbal medicine our side by our mobile terminals conveniently.**Keywords:** Chinese herbal medicine; Android platform; Recognition; Database; Algorithm and programming

INTRODUCTION

With the development of social economy and science and technology, all kinds of mobile terminals went into our lives. By the mobile terminals such as portable computer, mobile phone, tablets PC and so on, we can convenient communicate and learn. On the mobile terminals all kinds of software are installed in the devices so as to achieve many functions for us. Recently, with the emergence of intelligent mobile terminal products, smart software platform applications have been the chasing hot spots in our lives for the smart mobile terminals [1]. By the intelligent applications, we can get many mobile application services [2], which are for mobile phones connected to the Internet business or wireless network card business. With the wide application of mobile intelligent terminal, the mobile terminal is to enhance the function, multi-mode, customized and open the direction of the platform [3].

Meanwhile, with the development of society and the improvement of people's living standard, the increase in leisure time, the universal implementation of paid holidays, the change of tourism conditions, the impact of the international tourism industry on the domestic tourism industry, the enthusiasm of the people will further glow [2,4]. In the tourism, the majority of the tourists want to return to nature and enjoy the beauty of nature, including the wilderness scenery, the natural geographical and cultural needs because the development of the tourist attractions not only enable the broad masses of the people return to nature, but also

meet the natural desire and greatly enrich their cultural life [5].

Chinese herbal medicine is a unique drug used in the prevention and treatment of diseases [6]. China is the birthplace of Chinese herbal medicine, where are more than ten thousand species of medicinal plants in China. Chinese people has experienced several thousand years of history on the exploration of Chinese herbal medicine. Today the efficacy of Chinese herbal medicine draws more and more attention in the world [7], such as Chinese acupuncture and Chinese herbal medicine boiling, all of which go deep into the world, and the Chinese medicine can be studied to give us a lot of different plasticity [8]. In the tourism, many people can find all kinds of Chinese herbal medicines in our sides. If we recognize it and know some knowledge about it, we can get it and sometimes it can be used in the emergency situations. The recognitions is a kind of professional knowledge and technology for us. How can we recognize it simply and conveniently?

In this paper, we provide a method to solve above question by our intelligent mobile terminals. Based on popular intelligent mobile terminal and Android system in it, we design a recognition system to recognize the Chinese herbal medicine.

METHODS

Software engineering is a subject that studies engineering methods to construct and maintain effective,

practical and high quality software [9]. In general, it involves programming language, database, software development tools, system platform, standards, design mode, code programming and so on [10]. The object of software engineering is to make the system and applications systematic, standardized and quantitative running for the requirements of people. Recognition system is one of application software which should be accordance with the methods and theory of software engineering. In software engineering [11], the system evolves the analysis, design and accomplishment. System analysis is the basic method to research and consult [12], by which we can pass a complex consulting projects to become a systems engineering. Through the analysis of the target system, factor analysis, analysis of environmental systems, system resource analysis and management system analysis, we can accurately diagnose problem, profoundly reveal the cause of the problem, effectively put forward solutions and to meet customer demand. Based on the analysis of the system [9], the process of designing a system that can meet the intended target is designed. System design content mainly includes the determination of the design principle and method. On the basis of system analysis and design [12], system implement is the process that the result of structural system design can be turned into practical operation system. System to achieve the main work includes the personnel training, system platform establishing, database establishment, application program design and coding, program testing and system debugging, commissioning, organization adjustment system switches, documentation and approval and so on.

A database is a collection of related data together where the data is structured [13, 14]. It can provide no harmful or unnecessary redundancy and for a variety of application services where the data storage is independent on the use of the program. With the database we can insert new data, modify and retrieve the original data which are in a common and controlled way. Database design is to construct the optimal database model for a given application environment. By the establishment of database and its application system [15], we can effectively store data and meet the application requirements of various information requirements and processing requirements. The design of database includes three steps, conceptual structure design, logic structure design and physical structure design.

The computer algorithm is a step by step way to describe in detail how the computer can be input into the required output process, that is, the algorithm is to perform on the computer of the specific description of the process [16]. Algorithm design is the step to solve the problem by computer programming language [17]. Efficient program design is based on good information organization and excellent algorithm, and all the problem solving process is the process of effective data

organization which is to find, design and implementation of the algorithm process.

Programming is always related to the programming software and language. Programming is the process of solving the specific problem [18], and it is an important part of software construction activities. Programming is often a programming language as a tool and will be given the language of the program. The program design process should include different stages of analysis, design, testing, debugging, encoding etc.

RESULTS

With the attention for health, for Chinese herbal medicine recognition and traditional Chinese medicine market development, people go in for the travel and Chinese herbal medicine in thermal expansion, but the identification of Chinese herbal medicine has become the biggest obstacle [6-8]. Based on people's demand on the identification of Chinese herbal medicine and the popular states of Android smartphones, we put forward to set up the recognition system for Chinese herbal medicine phone based on Android platform to help people to identify the Chinese herbal medicine on our sides.

The system is based on the Android system and uses J2ME language platform for the development of Chinese herbal medicine identification mobile phone application software [2, 19, 20]. According to the characteristics of the plants, growth habit and growth area we design the system to identify the Chinese herbal medicine by mobile phone software. The features include plant shape, flower color, odor, leaf and fruit characteristics [6-8]. The main idea is to input similarity search keywords in the mobile phone software. By the retrieval results [21], the system returns significant characteristics of plant growth, external, specific medicinal value of some of the relevant information which provides the pictures or the corresponding introduction. Combining with the comparison of physical we can achieve the purpose of identification of Chinese herbal medicine.

The establishment of the database of Chinese herbal medicine is a key step in the Android application [13]. So we first create a database, and then create the tables, indexes, at last fill the data input the database. The implementation of Android technology is to use four layers of layered framework [21]. The functions of the system mainly include the query according to the plant morphological identification and verification by the name of the herb and the role, the keyword searching in the name of the herb and the role, and the input condition retrieving in the treatment of the diseases related to Chinese herbal medicine information.

Chinese herbal medicine resources can be found by Chinese herbal medicine phone recognition system

database which is convenient and quick to identify the Chinese herbal medicine, meanwhile some related knowledge of Chinese herbal medicine. By the system we can achieve the purpose of the study and close to nature at the same time. The system not only can use side of outdoor adventurers and accidental injuries for help, but also for herbs and herbal acquisition personnel help to bring positive effect and benefit.

CONCLUSION

With people's attention to health and Chinese herbal medicine, in order to meet people on the identification of Chinese herbal medicine demand, based on the popularity of Android smartphones, we design an Android Chinese herbal medicine phone recognition system to help people the recognition of Chinese herbal medicine in travel or go out. The system is mainly through the J2ME platform and Android mobile phone application software. By the system, we can input the similarity search keywords to query the plant itself characteristics, growth habit and regional growth condition identification of Chinese herbal medicine so that we can identify the Chinese herbal medicine. The system provides both convenient and quick identification of Chinese herbal medicine and the related knowledge of Chinese herbal medicine.

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