# Scores Query System of English Grade Test Based on Android Platform

Hongxia Bian

College of Foreign Languages, Bohai University, Jinzhou, 121013, China

hollybian2011@163.com

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**Abstract.** English grade test is a nationwide test of testing English proficiency, scores query after the test has become the most concerned issues for candidates. In order to facilitate the candidates query test scores, download exam transcripts at anytime and anywhere; by contrast with previous test scores, rationally determine their own English level. This paper designed a scores query system of English grade test based on Android platform, to lay a good foundation for the subsequent software development. This system adopts B/S development mode technology architecture, mainly from five aspects of Android introduction, B/S development mode, summary design, system process design and database design describes and designs the system. The system makes use of the characteristic of Android system, uses B/S development mode, with the Internet as the medium, the examinee can query test scores at any time, any place. The research contents of this paper have important reference values to promote the convenience of candidates query test scores and other aspects.

## Introduction

The Android system is made up of Google company independent researches and developments, which is based on the Linux operating system, it is the most common that an open source mobile operating system, which is the first truly open and completed mobile terminal operating system. There are not any proprietary obstacles that hinder mobile innovation, with the standardized platform, users who are customizable and the services which are free of charge and other characteristics [1]. It is a mobile phone operating system which is fully open to the third party software.

Public English test system is sponsored by the education ministry, test center of the education ministry designs, developments, and it is responsible for the implementation of the national English level test [2]. Which provides a public English test system to the society, and provides the candidates with a platform of testing and proving their English level, to provide a reference factor for the candidate's study, work, the progress of life [3]. Querying scores after the test has become the most concerned issues for the candidates, which is also an important way of distinguishing the certificate which is true or false for the enterprises and institutions. At present, for the candidates methods of querying scores usually use desktop or laptop computer to login system official website to query, which is subject to the restrictions of time and place, inconveniences the candidates. In order to facilitate the candidates query test scores at any time and place, this paper designs a scores query system of English grade test based on Android platform which adopts B/S development mode, this system can greatly improve the efficiency of the candidates query test scores, it has important significance for promoting the convenience of the candidates query test scores.

 

## Android Introduction

Android system architecture is generally divided into four layers from top to bottom, respectively, the application layer, application framework layer, system runtime layer, the Linux kernel layer [4,5], support the user free development. Android system architecture is mainly composed of the application layer (Application), the application framework layer (Application Framework), function library and runtime (Libraries, Android Runtime), the Linux kernel (Linux Kernel). Among them, the application layer includes system and users installed applications, both can use the API provided by the system; application framework layer provides the API for the application layer; libraries provide the application framework layer with C/C++ class library, Android runtime provides the application framework layer with Dalvik virtual machine and the core library collection of the system; the Linux kernel provides system with the core system services of memory management, process management, security mechanism, display driver and others. The specific architecture is shown in Fig. 1 [6,7].

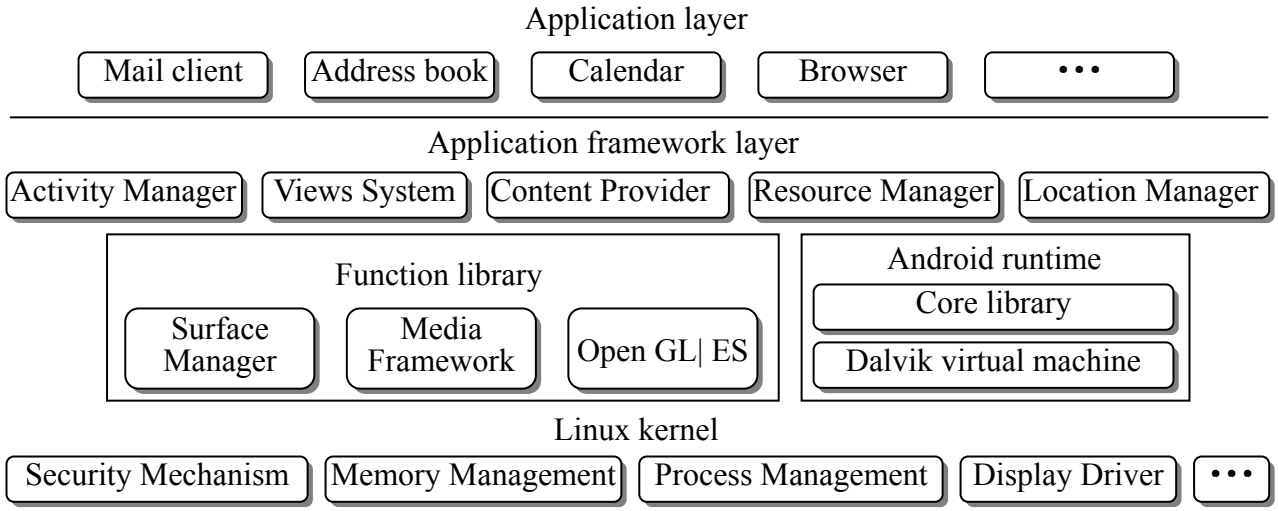


Fig. 1. Android system architecture

Android system features: (1) Open, Android system is made up of Google company independent research and development, based on the Linux operating system, it is the most common that an open source mobile operating system, since its launch, with its open source code of system is conducive to upgrading and marketing which is in favor of all walks of life [8]. The system released by now, Android has been supported by most of the mobile phone maker, and makes in constant the update of system version and the improvement of the system itself; (2) Mobility, Mobile phone users of Android system can anytime and anywhere through the device's mobile data or wireless network connection mode to realize the connection of the network; (3) Get rid of the limits of mobile phone operators: With the emergence of the Android system, greatly reduces the extent of mobile operators limit mobile phone users to connect the network; mobile phone users have achieved to connect to the Internet at anytime and anywhere, network connection is faster. Based on Android above three characteristics, this paper designs a scores query system of English grade test based on Android platform B/S development mode.

## B/S Development Mode

With the rapid development of network technology, B/S mode has already become the mainstream of system development mode, B/S mode is a type of three layers C/S structure, which is based on C/S mode, through the Server provides the Web Server, the users only need through a Web browser website to log in to the system website, visit the corresponding system webpage can complete the specific operations [9]. The database server of the system includes the system server and data server. An important part of the system server is calculation and judgment, the main task of the data server

is to query and store data. Users through the browser sends the service request instructions, when receives the instructions from the browser parses, the system server will query and calculate the corresponding data in the data server, and then the query and calculated results in a timely manner through the browser parses present to the user, while the data server saves the queried and calculated data.

If the system uses C/S mode, each user accessing to the system for the first time installs the system software on the mobile devices, users not only make daily managements and update version of the system software, and software development and technical personnel needs sophisticated technology and a large number of investment cost, volume, high cost of system maintenance; And the use of B/S mode, mobile phone users only need into Web browser, log in system website, access to the corresponding system webpage, can do the operations of modifying account password, querying test scores and downloading test transcripts, without the need for maintenance of system software. Based on this characteristic, This paper designs a scores query system of English grade test based on Android platform which adopts B/S development mode. The specific system structure is shown in Fig. 2.

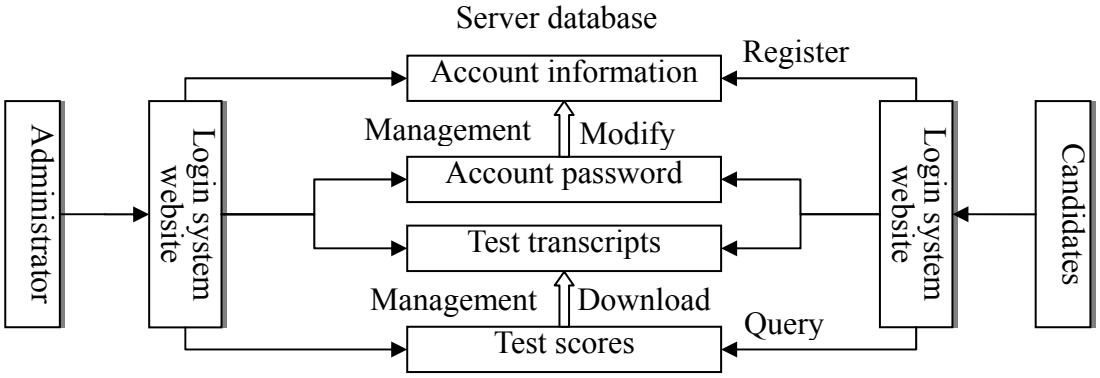


Fig. 2. System structure

**Summary Design**

In this paper, design of system function structure diagram is shown in Fig. 3. The top with the name of the system of "scores query system of English grade test based on Android platform," says. The second layer is divided into two modules of client and management client, each module represents a user; client module said "candidates", management module said "administrator". The third layer is expressed with the specific function of each module, among them, "candidates" user features include registered individual account, modify the account password, test scores query, download test transcripts; "Administrator" user functions including account information management, test scores management, test transcripts management, system maintenance.

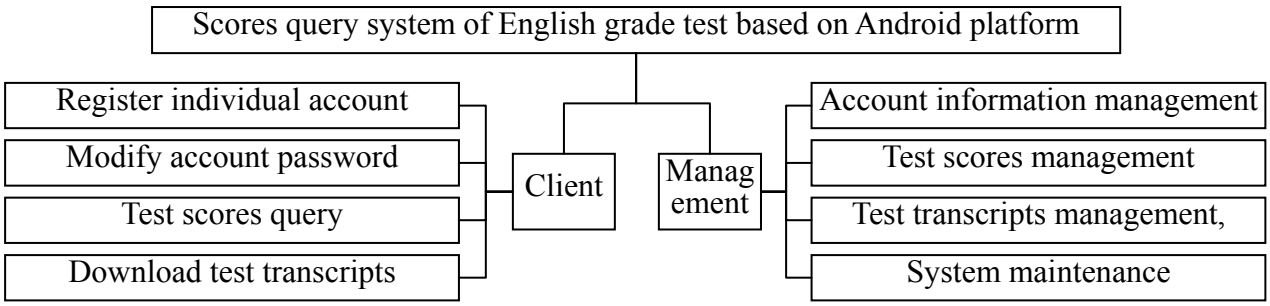


Fig. 3. System function design

In each module, the definition of each specific function has its specific meaning. For example, in the client module, test scores query said the candidates can detailed query on the previous any test scores, which can also be used to query on a recent test scores; in the management module, scores test report card management said administrator saves and monitors candidates' all of the scores test report card data, which is to prevent data loss and leak.

## System Process Design

System processes can be indicated of system flow chart. System flow chart is the traditional tools of drawing system physical model, which expresses the flow of the system components, rather than the control process of information processing [10]. Score query system is designed with "candidates" and "administrator" two kinds of users, setting "candidates" users access to the system as an example, the design of overall process the users access to the system, as shown in Fig. 4.

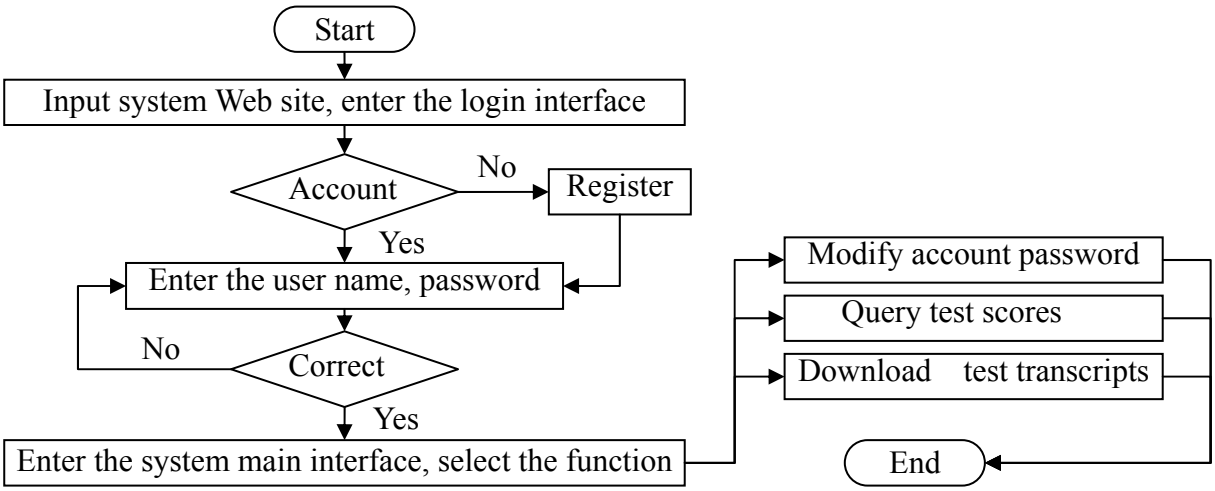


Fig. 4. Student user flow chart

System process design description: users connect to the Internet, input system web site, enter the login interface. For the first time when the user logins system, the system prompts the user whether to have accounts; If any, system prompts the user enter the account information; If not, the system prompts the user to register a account, after the success of the registration, the page automatically jump to the system login interface, at this point, the system prompts the user input before the registered user name and password. If the input is correct, the user enters the system main interface to select function, who can do the operations of modifying the account password, querying test scores and downloading test scores report; Otherwise, the user needs to enter again until the user input the correct user name and password. After the user executes the operations which are required, who can choose to exit system, the end.

## Database Design

(1) Database connection. Oracle database is the Oracle launched a relational database management system, which has the advantages of high availability, performance and strong expansion. The database has the advantage of good stability, the security of data stored in the database is higher. Just like other databases, the database can store large amounts of data, save the data for a long period of time, support the sharing of data, data saved in the database has strong reliability. As one of the most popular relational database management system at present, able to handle a variety of complex transactions, support various business forms, which is widely used. Considering the database of scores query system which is designed in this thesis saves candidates' real name, identity and personal photographs and other personal information, in order to strengthen the confidentiality and security of data, this paper uses the current relatively safe and stable Oracle database. The following mainly introduces the core code to achieve Oracle database connection.

```
Class.forName("oracle.jdbc.driver.OracleDriver");
String str = "jdbc:oracle:thin:@localhost:1521:db";
String username = "admin";
String password = "admin";
Connection conn = DriverManager.getConnection(str, username, password);
```

(2) Database table design. Based on the system module function designed in this paper, the information table in the database including account information table, test scores information table

and test transcripts information table. Among them, account information table includes the user registration system of personal information such as user name and password; Test information table includes the candidate's name, ticket number, identity number, test time, grade and scores aggregate information; Test report information table includes the candidate's name, ticket number, identity number, photo, test time, grade and report number. Sets test report information table as an example, designs the composition and structure of the data, the specific table structure is shown in Table 1.

Table 1. Test transcript information table

| No | Fields Name | Fields Type | Fields Width | Illustration |
|---|---|---|---|---|
| 1 | Reportnumber | Number | 15 | Transcripts number, primary key |
| 2 | Name | Varchar | 20 | Candidate's name |
| 3 | Ticketnumber | Number | 20 | Candidate's ticket number |
| 4 | Identitynumber | Number | 20 | Candidate's identity card number |
| 5 | Picture | Blob | 300K | Candidate’s personal photos |
| 6 | Time | Date | 20 | test time |
| 7 | Level | Number | 5 | test level |

## Conclusion

In this paper, combining with the characteristics of Android, designs a scores query system of English grade test based on the Android platform, takes full advantage of the characteristics of mobile terminal to realize the candidates query test scores at anytime and anywhere, efficient and convenient. By looking at the previous test scores, which is beneficial to candidates to clearly recognize their own English level, continuously strengthen learning English; help candidates improve their English level, it has important significance for promoting the convenience of candidates query test scores.

Because this article only makes the general design on the system, which not makes subsequent software developments to test the system whether is feasible; In the design process without considering the maximum load of the system, the time of the candidates query results waiting for the system responses, in the future we will make subsequent software developments based on the design of the system, verify the feasibility of the system; emphatically resolve the maximum load of the system, the time of the candidates query results waiting for the system responses.

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