Online Bookstore Management System Based on Android

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***Abstract*—This system is an e-commerce platform, and it is an APP developed on the basis of Android. Android Studio and cloud service platform Bmob are used as tools to develop. When you read a good book, you can see others and see yourself, and you can get a lot of insights every time. Reading is a very popular thing to do. No matter how busy a job is, people will spend a certain amount of time buying books and reading books. The APP design page is beautiful, friendly user interface, high user experience, on the online bookstore APP, buyers and bookstore managers can achieve their own needs. Book purchasers can quickly buy their favorite books. Bookstore administrators can deal with orders formed after book buyers' books in the first time and update books in bookstores in time. The development of such APP is of great significance for economic development, and much more convenient for consumers to use.**

Keywords- Online bookstore; Android Studio; Cloud service Bmob

I. INTRODUCTION

Ten years ago, people had to do everything in their own business, and ten years later, the Internet made people do not need anything to do, only to pick up a mobile phone, and to choose items to make payment online. Nowadays, people do not need to worry about going shopping anymore. They can move their fingers and the what you want to buy can be sent to the door. When reading a good book, you can see the character of others and yourself, and you can get a lot of insights every time. Reading is a great thing people are keen to do. People want to read a good book, soar in the vast blue sky of the book, enrich themselves and understand the wider world. But in real life, the life rhythm makes people eager to accomplish anything quickly and accomplish as many things as possible in the shortest possible time. Online bookstores provide people with a wider network environment: people don't have to consider whether they have time or not, do not have to think about the convenience of travel, do not have to endure the overzealous or overly cold of the shop assistants, as long as they move their fingers, they can buy their favorite books. For commercially, there is a wider market: the Internet has interconnected the world. Bookstores do not have to worry about the location of the bookstores and the expensive rent, which greatly reduces the cost of business, makes the book price more favorable, the book buyers are more inclined to the superior quality, and the books with relatively favorable prices have been stimulated. Consumption has improved the interoperability of the economy.

II. PRESENT SITUATION AT HOME AND ABROAD

A. Domestic status

In China, the Internet economy has greatly improved people's quality of life. Domestic biggest is the e-commerce platform Alibaba Tmall every year to hold a double eleven activities, 2016 data show that double eleven day trading volume has exceeded one hundred billion yuan. Cheap and saving time are the two advantages of the Internet economy. In the big wave of online shopping, the demand for books is up to 30% of the demand for all consumer goods, so the development of the online bookstore APP has a huge market and potential.

B. Foreign status

In foreign countries, such as North America and Europe, e-commerce based on the Internet has been more than ten years ahead of China, and is gradually improving. In the United States, e-commerce is developing rapidly along with the rapid development of Internet. Amazon is almost synonymous with global e-commerce. The Internet giant named after the longest river in the world has got rid of the old framework of retail enterprises. It can be seen from the development history of Amazon that its development speed is fast and its momentum is fierce, and its capital consumption is fast and fast. In 1995, Amazon was founded to usher in its first guest. After just three years of development, it has become the largest online bookstore in the world. It has nearly thirteen million guests and has become the leader of online retailing. In 2000, sales amounted to US $8 billion, leading to the global online shopping revolution. From the huge scale of the online bookstore, we can see that the development of online bookstores abroad is quite mature.

Today, the Android system is growing very rapidly. The operating system of smart phones in the hands of more than half of the smartphone users abroad is the Android system. Nowadays, many mobile phones all over the world are carrying out Android business, such as MOTOROLA, SAMSUNG, and mobile, Unicom, telecom, HUAWEI, ZTE and Lenovo in China. Now, the market share of the Android system in foreign countries is higher than the market share of the IOS system. In the current development trend, Android is the dominant position in the mobile Internet market, not an impossible task.

III. FUNCTIONAL REQUIREMENT ANALYSIS

The system is divided into two modules-foreground and background: foreground is for book buyers, and the background is for bookstore administrators. The functional design of the foreground is similar to the real bookstore in real life. The user can browse the hot books in the bookstore, click on the detailed information, select the books they like to see, and submit the order with the balance payment of the account. The shopping process of this system is that the new user first registered an account, then landed on the APP, and

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displayed the hot books on the home page. The users could search out the books they wanted to buy through the search bar, and then buy the books and generate the orders.

The background function design of the system is similar to the purchase and sale mechanism of the store. The bookstore administrator has his unique account number and password. He can successfully login the background management page with the correct password. Bookstore administrator can manage book information, provide the function of book information modification, delete and add, support the function of book cover picture uploading. This benefit is to enhance the visual effect of book browsing and improve the experience of book purchase users. Bookstore administrators can also add, delete, modify and view user information. Bookstore administrators can manage and process orders generated by books purchased by users. After the user submits the order, the name of the book, the picture of the book and the address of the user should not be corresponded.

IV. DEVELOPMENT TECHNOLOGY

To achieve the development of this APP, the use of IDE is Android Studio, the language is a powerful Java, the edition of JDK1.8, the database is a convenient, powerful Android to develop third party back end cloud service Bmob.

A. Android

Android Studio is a very practical IDE for Android development. Android Studio has many advantages than Eclipse: faster, UI smarter, integration of component tools, powerful UI editor, built-in terminal, perfect integrated version control system; colors and pictures can be previewed in real time in layout and code; string can be previewed in real time; multi-screen preview, screenshot with device boxes can be recorded at any time; the location of the file can be opened directly; cross project mobile, search, jump, save automatically, do not need to keep it all the time; even if the file is closed, N history can be receded; intelligent refactoring, intelligent prediction and error reporting; every line of file editing history can be traced back to people; a variety of plug-ins, such as ADB, .Gitignore, SQL, and markdown; pictures can be converted to a picture directly and with an editor.

B. Cloud service platform Bmob

The online bookstore APP database is applied to the back-end cloud service platform Bmob, Bmob is actually a network database. Developers can use Bmob to design storage frameworks, obtain application keys, Download SDK and embed applications, call the corresponding API, and view stored statistical analysis data after application release, the whole process can be implemented quickly, and the Bmob cloud service is free. Bmob can provide real-time data and file storage function, and easily realize the application of "cloud to end" data connectivity. In addition to regular application of text information storage, data storage can also store pictures, videos, audio, geographic location and other information.

Use the cloud service platform to register first, generate a project that specializes in this APP under the account, and after the only key of the Bmob official network, the SDK provided by the Bmob official network is loaded into the APP engineering package corresponding to the Android Studio according to key, and then the API of the Bmob provides can be invoked to create the table. On the other hand, it is very convenient to add and delete the form and check the form.

Bmob's quick introduction documentation is detailed, registered, new application, applied to key, Download SDK, loaded SDK into AS, configuring AndroidManifest.xml, initializing BmobSDK, adding a line of data, getting a line of data, modifying a row of data, deleting a line of data, from annotation accounts, deploying projects, and operating data, There are very detailed instructions for each step.

After successful deployment, it enters the development document of the Android module, the relationship between object, data type, class name and table name, data adding or deletion and modification, batch processing data, array, user management, file management, real-time synchronization of data, ACL and role, application security, error code list and so on. The Android backend data development document is very clear.

Bomb background operation interface is very beautiful, management data is very convenient. Bmob's API provides a data caching method, for example, users who have already logged in, user information has been cached in the Bmob database, and the next time it reenters the APP, it does not need to log in again. With the Bmob cloud service platform, you don't need to spend a lot of time to build a back-end server. You don't need to build a database platform to create a database form. It only needs to be done easily on the personal home page of the Bmob.

V. SYSTEM DESIGN

A. System structure diagram

The APP is divided into two main structures: Bookstore users buy books, bookstore managers manage books and orders. As shown in Figure 1.

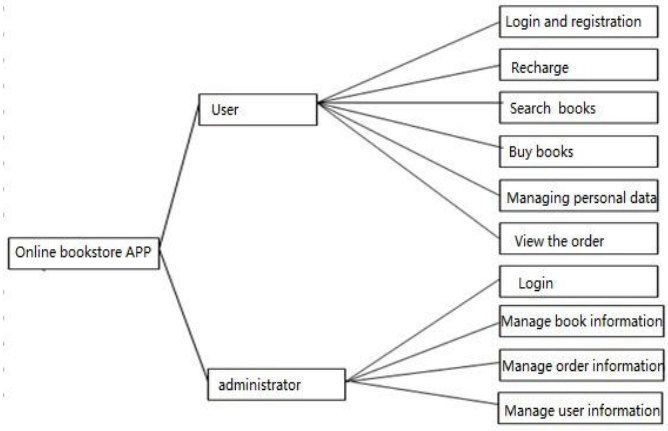

Figure 1. System structure diagram

B. System E-R diagram

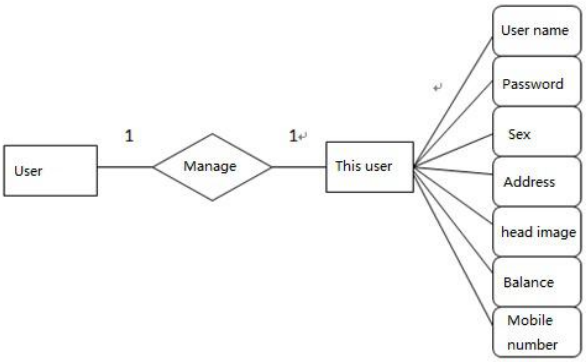

Figure 2. User module E-R diagram

C. Functional design

The APP is divided into two main structures: Bookstore users buy books, bookstore managers manage books and orders. The database uses the cloud service platform Bmob. The system includes user registration, user login, user purchase book, user view order, user recharge, modify information, forget password, bookstore administrator login, bookstore administrator to manage books and other functions.

D. Database design

The background database of this APP uses the cloud service Bmob, without installing any database management software such as SQL Server, MySQL, Oracle and so on. It is only necessary to create a data table in the Bmob background project. Create user information table _User, book information table BooksBean, order information table BooksBuyBean in Bmob.

E. System use case

1) User module

In the user module, users can manage their own user information, and user module use case diagram is shown in Figure 3.

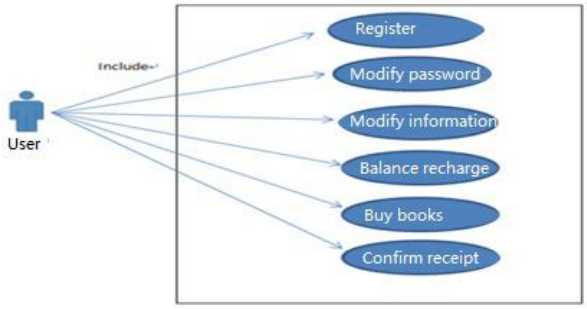

Figure 3. User module use case diagram

2) Administrator module

In the administrator module, you can manage book information, process orders, view user information, bookstore administrator module use case diagram as shown in Figure 4.

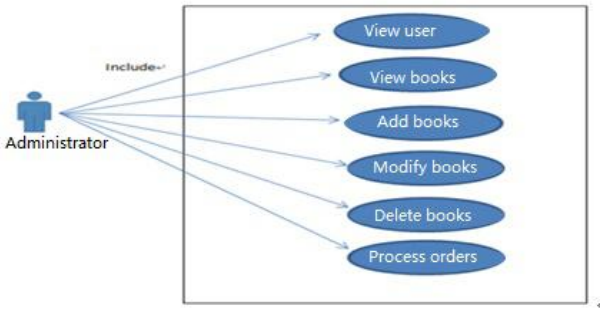

Figure 4. Administrator module use case diagram

VI. SYSTEM IMPLEMENTATION

A. User module implementation

User module functions include: user registration, user login, user purchase, check order, modify information, recharge, forget password.

B. Administrator module implementation

Administrator module functions include: login, manage books, process orders, manage users.

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