

# The Design and Implementation of Mobile Learning System

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**Abstract.** With the continuous development of mobile Internet, mobile learning arises at the historic moment, learners can make use of the hands of the mobile terminal equipment at any time, anywhere. As a new type of mobile terminal equipment - the device, with its good characteristics such as portability, mobility, and completely touch screen, make mobile learning is simple and efficient. According to the characteristics of the device, designed and developed for the mobile learning system, designed to provide a reference for the construction of mobile learning system.

## The introduction

Along with the computer hardware technology, the mobile Internet and information communication technology development and integration of the mobile learning this new way of learning. , due to the different Angle of analysis of mobile learning and cause of mobile learning has a variety of different interpretation, by reference to a large number of relevant literature, the conclusion of the core idea for mobile learning is through the wireless mobile communication network, the use of wireless mobile terminal equipment for education information, resources and services, and other forms of content of a new type of learning.

## The Connotation of the Mobile Learning and Advantages

Mobile learning refers to the mobile computing devices, can be obtained at any time, any place in learning, mobile learning the use of mobile computing devices must have the ability to effectively present learning content, and provides a two-way communication between teachers and learners. The fundamental characteristic of it is learning behavior is no longer restricted by space-time. Learners, learning environment and resources can be arbitrary. It depends on the wireless communication technology, no longer dependent on traditional and fixed the PC and the cable network, is the main tool for the mobile terminal equipment, etc.

The advantages of mobile learning is mainly manifested in:

- 1.Mobility: The mobile terminal portable, lightweight, facilitate learners to carry, available, long distance journey of fragmented time to study.
- 2.High efficiency: Dominant in the learning process, learners can ask questions, select the resource, to interact with other participants.
- 3.Personalized: Learners according to their needs and interests learning plan, custom schedule, determine the location and time to study.
- 4.Generalized: The improvement of wireless communication technology and the development of handheld mobile terminal product promotion, for the masses of distance learning, lifelong learning, provides a possible.

## The System Design

This system mainly divided into the front desk user module and background management module. Front-end user query through the system module can be conveniently retrieved their content, the resource needed at the front desk at the same time users can collection sorting and review the content of the resources evaluation, and so on. Background users are mainly used for the platform system of internal resources to add, modify, delete, query and other operations; And administrators

can carry on the management, to the front desk user account to log in to the front desk users to manage resources evaluation, classification of resource management, etc. In order to guarantee the security of the system at the same time, the need for the background administrator user according to the permissions for the login operation.

**System Design.** This set of system will be at the front desk user proposed for high school students, the realization of the system is designed to offer high school students a free, free, personalized mobile learning platform, let the students preview and review the knowledge learned anywhere, anytime. The system is mainly for students at the front desk users browse, hot resources recommended, play resources, resource evaluation, resources collection, resources search, such as main content, can let the learners to make the fullest use of these video resources for mobile learning. Backstage users through PC login, classifying video resources and management such as add and delete. The function of the system module partition as shown in the figure below:

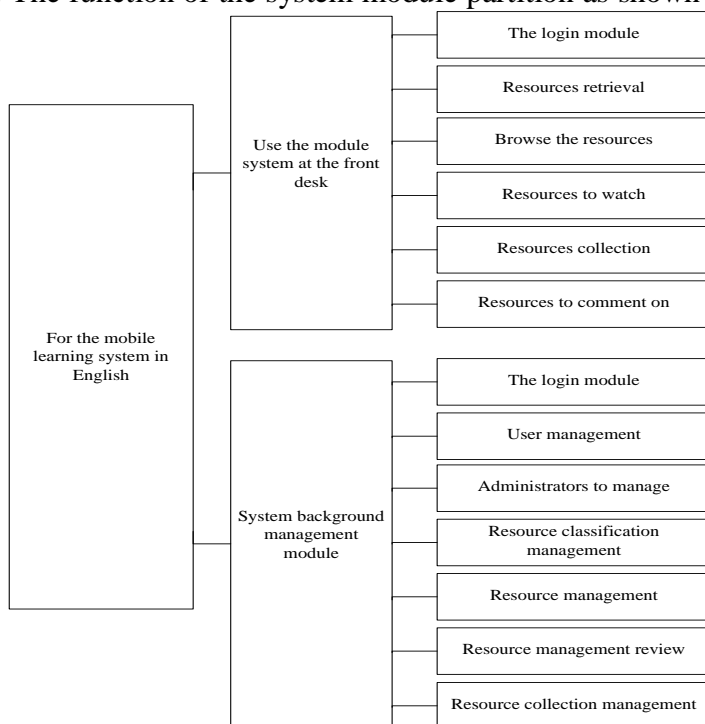


Figure 3-1 system function module division

This system based on B/S architecture, the system of server side includes web server, database server and streaming media server. Front desk users through the terminal after logging in, through, at the request of the related network protocol to the server through backend server program combining these three servers make specific response and handling, will feedback the results to the user of the terminal. The system architecture diagram as shown below:

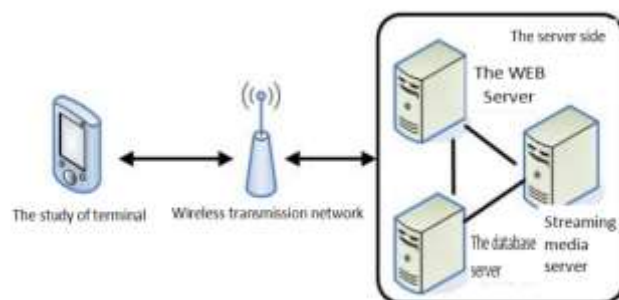


Figure 3-2 system B/S architecture

**Database Design.** Database design stage is mainly divided into the database logic design and physical design. In logical database design stage, the main demand analysis of the data storage requirements into with attributes of entity model, and by the entity model, and they constitute the

relationship between the entity - relationship model, that is the e-r diagram. By demand shows the e-r diagram of this system as shown in the figure below:

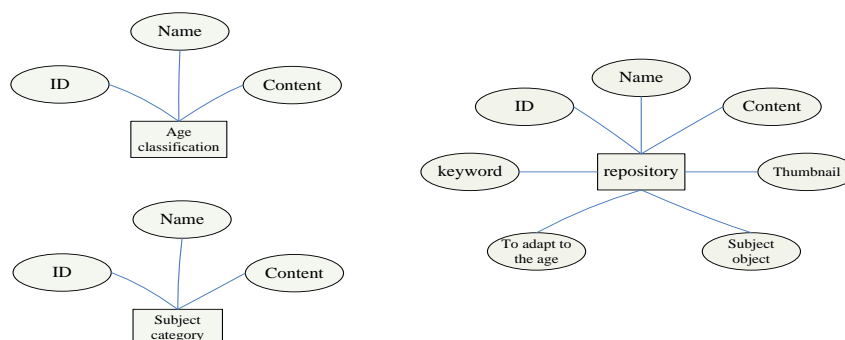


Figure 3-3 system main entities and attributes figure

Database of physical design phase, mainly for system is the choice of DBMS, the database logic design stage of converting entity table structure, transform entity attribute for the table properties, to complete the physical structure of the database design. Including grade classification, subject classification and resource table, including the classification, grade basic structure as shown in table 2-1 (other) :

Table 3-1 grade classification

Name	Type	Length	Allow empty	A primary key	Instructions
Id	Int	11	No	Yes	ID
Sortid	Int	11	No		The primary classification
Classtab	Varchar	255	Yes		Classification number
Classname	Varchar	255	Yes		Category name

## The Design and Implementation of the System

**The Realization of the Front Desk Module.** First show is system users on the home page. At the bottom of the interface is divided into the top navigation bar, navigation and display section in the middle. Due to program the carrier for the large screen of mobile devices, so the system using the navigation at the top of the display on UI design, at the bottom of the display information. Navigation have popup form or drop-down menu style design, more in line with the use of the mobile user habits.

In order to improve the system security, the front desk system in learners did not use the user name and password to log in, the "I" in the navigation bar drop-down menu item for the "login" and "registration" option, and only in the system user login, this item will become a "my collection", "my comment" and "exit" three menu options. This way is by setting the server Session for implementation. First determines whether the user to register in the Session, if the unregistered prompt login information, in the same way when the user logged on, need to destroy the registered information Session.

After the user login, can choose the "hot spot" resources in the menu bar "grade classification" and "subject classification", etc. The "hot spot" resources will all video resource information in the database, in accordance with the clicks way displayed in reverse chronological order. Because the paging mechanism has universality, and usually the development framework of paging encapsulated into class, in the process of instantiating the calling.

Through detailed list click into the resources information content, the upper part of the title of the resources for this page at this time, the upload time, amount of clicks and collection. But the lower part of the page to the front desk study users submit comment dialog box, and other resources comment content. User can submit completed review content, and show to comment on the list. Similarly, to unite a beautiful page, list the user comments here also USES the paging mechanism to display all the users' comments. Video of the area of the video playback, can use full-screen playback manner.

"Grade classification" and "subject classification" can be achieved in the classification of resources by the user to choose its own resources retrieval function. And "resource search" is more able to resource the keyword to retrieve resources.

In "my collection", save the user when watching video collection of basic information, the more interested in video so that the user at any time by browsing the content of this item for your collection; "My comments" column, the user can see users to participate in the review video information and content.

**The background module implementation.** Management background mainly realize the classification and management of resources, as well as the user account information, user reviews and collection management. So we need according to the characteristics of the desktop UI design for the user interface. This system adopts the form of the frame, the background management interface menu and operation page using nested iframe.

To ensure the security of user background, also banned irregular channels into the background page visitors for any operation. Realizing the function of the method is consistent with the front desk user login method, using the session for judgment. Resource content management mainly based on the resource information in the database table. In order to convenient to add the part content of video resources, here in the resource information table content attribute to add and modify the process of using the Ueditor online editor to edit the invocation of the process to complete complex video code.

Backend application at the same time also supports to the front desk users manage to submit comments, the main operating review table in the database, modify its contents, and delete operations.

This system through a series of tests, completed the requirement analysis phase of the proposed various demand, can run online.

## Conclusion

A hurry, the system design also should be to improve and in some aspects, such as the mechanism of the front desk users communicate with each other, at present only in the formal review video, can also designed a similar class students to ask questions to teachers, teachers give answer mode, at the same time can also provide students with online discussion mode. These can be used in the system in the process of gradually improve, make the system become a real sense of learning and communication platform.

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