Development of Higher Vocational Ideological and Political Education Resource Platform Based on Mobile Platform

Wen Tang(✉) and Yanfa Chen(✉)

JiangXi Tourism and Commerce Vocational College, Nanchang 330000, Jiangxi, China
20616604@qq.com, qgjxzbt@163.com

Abstract. Ideological and political education resources are an important part of teaching. A sufficient teaching resource database can help students to quickly find the corresponding learning materials and conduct targeted learning. There are a large number of ideological and political teaching resources on the Internet today, but there is not a complete database. With the support of cloud computing technology, mobile platform, MySQL and other technologies, this study adopts a three-level architecture to build a platform for integrating ideological and political teaching resources. In the educational resource platform built in this article, users can quickly search with keywords and call teaching resources to meet the needs of college students in learning ideology and politics.

Keywords: Mobile Platform · Ideological and Political Education · Resource Platform

1 Introduction

Nowadays, most of the ideological and political education in Chinese colleges and universities uses traditional teaching methods. Teachers give lectures in classrooms and students listen to lectures on desks. This old educational method is no longer suitable for current students. Today's college students grew up in the Internet age [12], and they prefer to find answers to their questions on the Internet. There are many ideological and political education resources on the Internet today, but ideological and political theories will continue to change over time. The quality of Internet ideological and political teaching resources is uneven. In order to ensure that students can access the correct teaching concepts when they study on the Internet and facilitate students to access materials, colleges and universities urgently need a resource platform that collects a large number of ideological and political education resources. From this perspective, this paper builds an ideological and political education resource platform that can be consulted on a variety of mobile terminals [16].

C. F. Peng et al. (Eds.): EIMT 2022, AHSSEH 3, pp. 206–213, 2023.
https://doi.org/10.2991/978-94-6463-012-1_23

2 Related Technical Theories

2.1 MySQL

MySQL is a data management system that allows applications to access data in different ways through a storage engine, and can provide different functions for different applications. MySQL adopts component-based modular design in software design and is developed using C language or C++. The modular development method is simpler for the overall development of the system, and can be divided into layers to facilitate the loading and removal of storage engines. Most subsystems in the MySQL system depend on some common low-level libraries (Fig. 1).

The MySQL system can provide different storage engines to define the persistence and query of different characteristics of the information. Developers can mix multiple storage engines in a single database schema in MySQL, increasing complexity [1].

2.2 PHP

PHP is a server, cross-platform, HTML-embedded scripting language. PHP can run on Linux systems, UNIX, or Windows systems. You can simply embed PHP into ordinary HTML pages by simply adding PHP code to the HTML. The amount of information and data of ideological and political education resources is huge [7], and the caching technology possessed by PHP can reduce the pressure on the database. PHP can store server-side Sessions in a file, database, or in-memory cache. When the user operates, the client can extract the data in the cache at any time to ensure the user's continuous session and provide the user with a good experience [5] (Fig. 2).

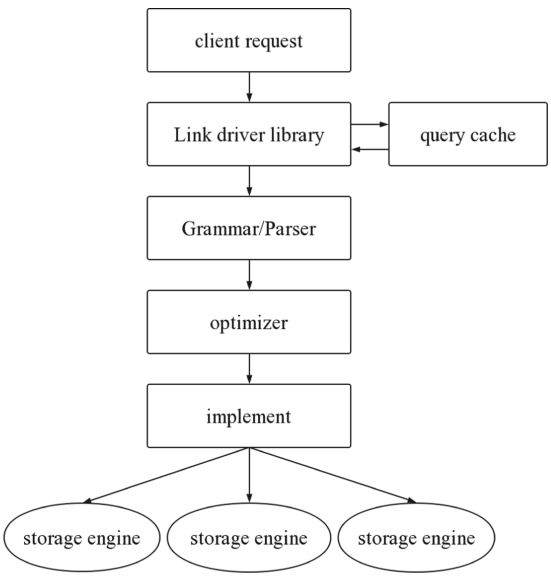

Fig. 1. Framework and subsystems of the MySQL database

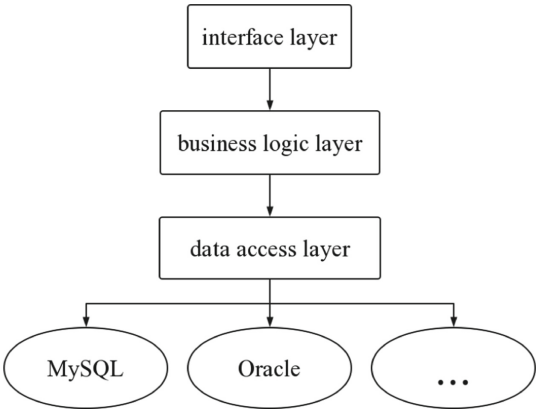

Fig. 2. Dynamic page requests using cache

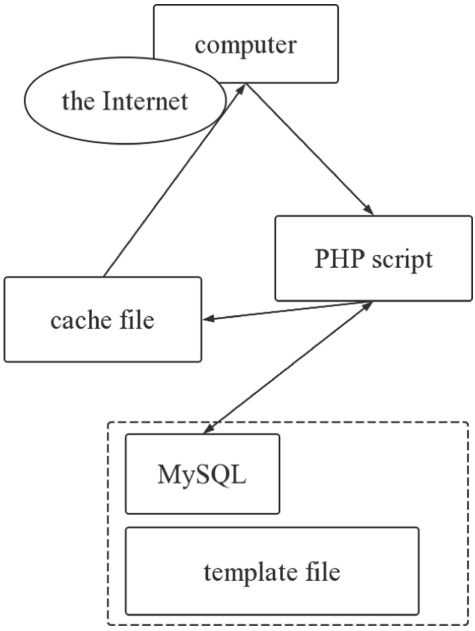

Fig. 3. Three-tier architecture

2.3 HTML

The HTML language is the foundation of the Web. HTML is a markup-based language suitable as a carrier of structured information. The specific object that interprets HTML is called a user agent. Our common user agent is a web browser.

2.4 Three-Tier Architecture

The three-tier architecture means that the system divides business applications into presentation layer, business logic layer and data access layer. The three-tier architecture enables high cohesion and low coupling [9]. The presentation layer in the three-tier architecture is the interface presented to the user. After the user performs the corresponding operation, the presentation layer can send the user operation request to the application server and feedback the result. The business logic layer provides connections to the presentation layer and the data access layer, implements business logic, and sends requests to the database. The data access layer is responsible for accepting the needs of users in the presentation layer, and realizing the access and operation of database data [4] (Fig. 3).

3 System Requirements Analysis

The development goal of the ideological and political teaching resource platform based on the mobile platform constructed in this research is to build a shared teaching resource platform, and the main service objects are teachers and students in colleges and universities [11]. The analysis of the system's requirements should start from the teaching point of view. This platform is mainly divided into four functional systems, namely resource learning management system, course teaching management system, course training system and user management system. The platform divides users into four types according to their different needs, namely school administrators, teachers, students and external users [8] (Fig. 4).

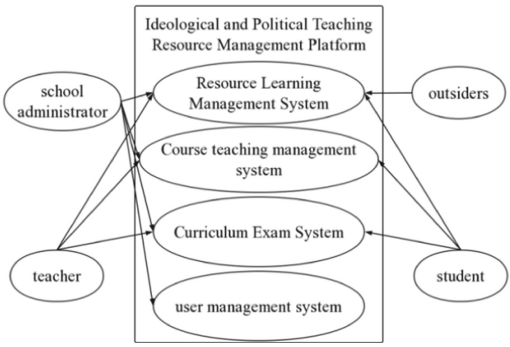

Fig. 4. System function modules

The resource learning management system is the central functional system of this platform, which can be provided to all users. Users can browse teaching resources, search for resources and download resources according to their needs. The teaching resources in the system include electronic courseware, electronic teaching materials, video courses and so on. The resource learning management system can realize the upload and download of resources to meet the needs of different users. The system needs to be able to support various resource formats, such as pictures [2], Word documents, PPT, PDF, videos, etc. These teaching resources need to have the function of online preview and playback. This system needs to have a real-time interactive function, so that users who log in can comment and discuss according to the content of teaching resources. The system also needs to update news information in real time, so that users can better understand the development of the world.

The users of the course teaching system and course training system are teachers and students, and the main goal is to improve teaching efficiency from the perspective of teaching design. Therefore, in the course teaching system [14], it is necessary to provide teachers with the function of lesson preparation, information sending, and classroom check-in. Students need course management features. The course training system mainly provides the function of examination for teachers and students. This system needs to realize intelligent correction and statistics of online test papers. The system should provide students with the functions of completing exams, submitting exam papers, and reporting exam error rates [3].

The user system is aimed at school administrators. In this system, school administrators can perform data management, teacher management, student management, and authority control operations [10].

4 Overall System Architecture

This platform uses the B/S structure, and uses the combination of DIV+CSS layout to design the page layout and then write the background code. This platform is developed and designed based on Apache2.4, PHP5.6 and My15.6 [3], and can run on server systems such as Linux. The basic layer service of teaching resources in this platform is the data distribution center of teaching resources. Based on structured data storage and unstructured data storage software, it constructs resource data collection, processing, storage, access, indexing, word segmentation, full-text retrieval, etc. The core function is to provide an open service framework for teaching resources to the outside world [13], and to realize the operation of resource data by the business application layer of teaching resources (Fig. 5).

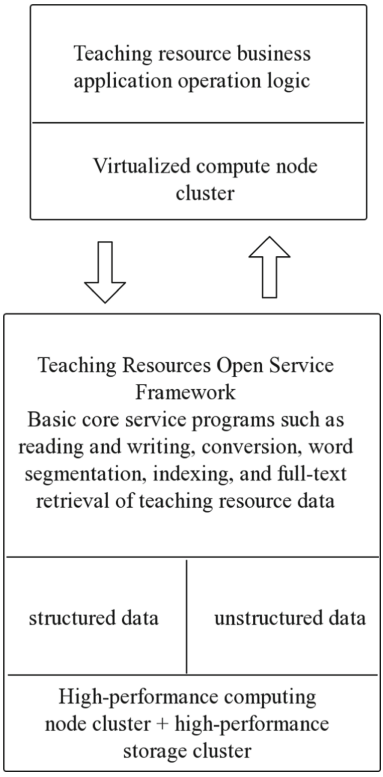

Fig. 5. Platform Deployment Structure

5 Conclusions

Strengthening the application of computer technology in college education is the trend of the current era, and it is also an important method to improve the effectiveness of college education. The ideological and political teaching resource sharing platform constructed in this paper can be provided to users who need ideological and political knowledge. School teachers and students can also use this platform to complete lesson preparation, preview, and exams in teaching [6]. This platform has strong applicability and is very practical for ideological and political education.

Acknowledgment. Fund Project: The Specific Project on Ideological and Political Theory Courses in Colleges and Universities by the Social Science Foundation of Jiangxi Province.

Project title: The Research on promoting the Substantial Results of the Ideological and Political Theory Courses in Vocational Colleges.

Subject No: 20SZ19.

References

1. Rachel, Bosch. 2021. Development and implementation of virtual field teaching resources: two karst geomorphology modules and three virtual capstone pathways. *Geoscience Communication*, 4(2).
2. Cheng, Peng, Dayang Ming, Xiaoni Man, and Donghui Dai. 2021. Optimized allocation of tennis teaching resources based on big data. *Journal of Physics: Conference Series*, 1744(4).
3. Gao, Meiyun, Jun Xing, Chengbo Yin, and Linlinm Dai. 2021. Personalized recommendation method for English teaching resources based on artificial intelligence technology. *Journal of Physics: Conference Series*, 1757(1).
4. Geng, Chuanwei, Jian Zhang, and Lianzheng Guan. 2021. A recommendation method of teaching resources based on similarity and ALS. *Journal of Physics: Conference Series*, 1865(4).
5. Halim, A., Soewarno, E. Yani, Elisa, E. Mahzum, A. Farhan, and I. Irwandi. 2021. Relationship between the use of the internet as a learning resource and physics learning outcomes. *Journal of Physics: Conference Series*, 1882(1).
6. Yuan, Qinying. 2020. Network education recommendation and teaching resource sharing based on improved neural network. *Journal of Intelligent & Fuzzy Systems*, 39(4).
7. Ramoutar, Shivani. 2021. *Open education resources: Supporting diversity and sharing in education.* TechTrends, (prepublish).
8. Tan, Qingyan, and Xiurong Shao. 2021. Construction of college English teaching resource database under the background of Big Data. *Journal of Physics: Conference Series*, 1744(3).
9. Gu, Weibin, and Yan Sun. 2021. A review of emotional design of online education resources. *Journal of Educational Research and Policies*, 3(3).
10. Yang, Xiaohua. 2020. Research on integration method of AI teaching resources based on learning behaviour data analysis. *International Journal of Continuing Engineering Education and Life Long Learning*, 30(4).
11. Xie, Xuelin, Meimei, Xiao, and Jingfang Shen. 2021. Optimization of wisdom classroom teaching resources based on visualization software. *Journal of Physics: Conference Series*, 1881(3).
12. Zhang, Xiu-fang. 2021. Research on teaching resource integration model of private higher vocational colleges based on cloud computing. *Vocational Education*, 10(03).
13. Bai, Xueer. 2020. On the development and integration of online music education resources. *International Journal of Education and Economics*, 3(3).
14. Wang, Zheng, Muthu Bala Anand, and Kadry Seifedine Nimer. 2021. Research on the design of analytical communication and information model for teaching resources with cloud-sharing platform. *Computer Applications in Engineering Education*, 29(2).
15. Cao, Zhongqiu. 2020. Classification of digital teaching resources based on data mining. *Ingénierie des Systèmes d'Information*, 25(4).
16. Dan, Zou, Dezhi Wang, and Wenbin Xiao. 2021. Research on teaching resource sharing mechanism based on blockchain. *Innovative Education Research*, 09(04).