Design of Dual-Terminal Combined Learning and Education Management System Based on Cloud Development

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Abstract. With the large-scale use of QQ and WeChat users, WeChat mini-programs have also followed, gradually entering our field of vision, and the benefits brought by cloud technology have made the development of mini-programs more active. In the face of an era full of information, computer technology is constantly being updated and upgraded, and it is also faced with insufficient technology, too single system, and reduced learning effect. Taking the knowledge system as an example, the advanced cloud development technology is integrated with the learning and education management system to discover the goals and functions of learning and education, so that users can get a good sense of use, effectively absorb experience, communicate with others, and accumulate learning experience. Limited space for functions such as experience and gathering information.

Keywords: Learning education · cloud development · applet · mobile learning

1 Introduction

A series of problems existing in the traditional learning and education management system are as follows:

Most of the traditional learning and education management systems use the APP mode. Compared with small programs, problems such as running on various types of mobile phones are likely to cause high development costs.

There are also many businesses that lead to commercial interests for publicity, and seriously leave the principle of learning and education, which is easy for users to fail to adapt [1].

The traditional APP adopts the tandem collaborative development model, which greatly increases the cost and difficulty, and is not conducive to the development and adaptation of related systems.

It is difficult for traditional APPs to have a perfect and developed ecology, and it is difficult to compare with the increasingly active WeChat mini-programs. They require a lot of manpower and financial resources in the later stage to be able to be widely promoted [2].

First of all, the development of small programs is a wise choice for the new era, and it has a lot of resources. Because of the support of WeChat, it is convenient for us to use

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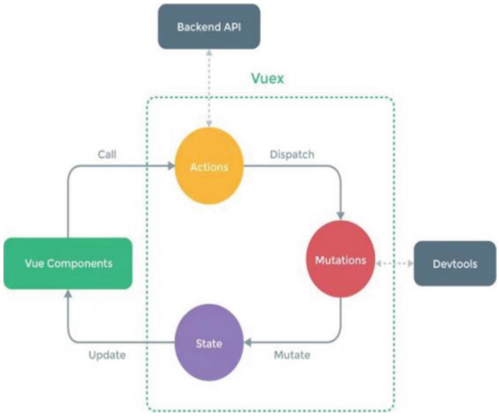

Fig. 1. Learning management system function module

more power [3]. Such as real-time information, real-time positioning, real-time calls, etc. are the foundations accumulated by a large number of users. In order to improve the existence of users, WeChat mini-programs will also improve their own conditions [4].

Thanks to the cloud services provided by cloud development, this series does not need the support of the back-end and front-end, and try not to be related to the related series, which is also very clear. For the cloud development platform, it mainly brings daily monitoring and work arrangement to learning and education, which ensures the operation of the entire operating system and the arrangement of work.

United Cloud Development co-invented a small program lab device management system for learning, which does not require the purchase of any other equipment and does not require the registration of a domain name; Developers only need to be familiar with some front-end development technology to complete, do not worry about too much trouble with the software and hardware security series of problems, the operation of the system depends on WeChat, WeChat platform can not have other problems, relying on WeChat can provide contact between teachers and students, promote the rapid and effective development between them [5]. The system will also have some advantages of low cost, short formation cycle, easy maintenance and promotion. See Fig. 1.

2 Embodiment of Double-Ended Binding

A double-end combination achieved by the WeChat applet side and the cloud development technology side through a small program that accesses the basic database. In this way, the degree of fusion between the two ends can be eliminated, but their safety and connection are guaranteed, as shown in Fig. 1.

The advantage of double-end combination It considers how to reduce the front-end method through the content stored in the server, and only needs to complete the algorithm of the relevant functions of the applet and give the corresponding Web end.

The administrators of this system on the PC Web side will target some killers on the Internet through speeches and comments, delete them or send such information to the official and then give opinions and feedback [6].

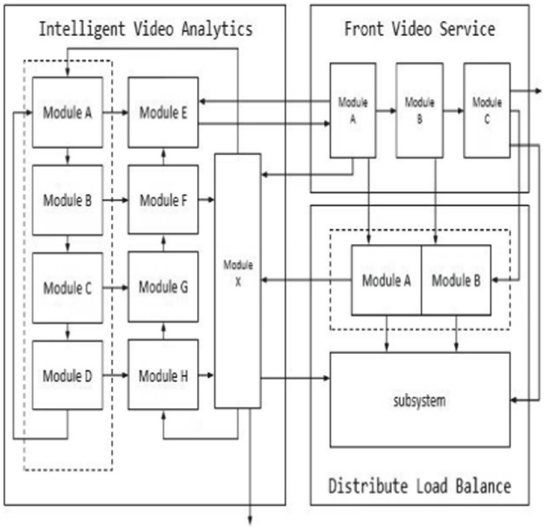

Fig. 2. Composition f double-ended binding

The WeChat applet system is developed based on the cloud, and it is also tailored for it. It has powerful information resources and better lays the foundation for the spread of culture. Its use is very simple. Users only need to scan the corresponding applet QR code to perform simple ordering services, and they can also use the QR code to share the function to open the relevant web pages you want. When the user logs in for the first time, the page will send some discount coupons from time to time, which you can check and use through the collection function and historical records. Go to the homepage to learn [7]. Those who need to review the course can understand in advance, and relevant knowledge points will be open. If users need to ask questions, they can go to the homepage square to conduct simple online communication with other companions, and support the search function to find their own feelings. Section of interest. See Fig. 2.

Mini Program Cloud Development provides a strong maintenance of the three basic foundations of cloud database, storage, and cloud functions [8]. Cloud database is a document-type database, including the combination of multiple subsystems, the document format in the array is sorted, cloud storage provides file storage mode for the cloud, cloud function as a set of operation ports, mini programs can easily operate data and file management files through cloud functions. Cloud storage, cloud databases, and cloud functions are all closely related to each other. We are provided with free database storage space and file storage space, based on the requirements of the user to manage the system for the students of the university, if the resources are damaged and can not meet the needs of the user, the user can apply for free space for storage [9].

3 Design and Implementation of Core Functions

The most important thing about the WeChat applet is that it can maintain the user's personal information and identification operations such as identity confirmation. When

Fig. 3. WeChat applet homepage

the user opens it, he can remember the password through the webpage to obtain the avatar and identity information [10]. At the same time, it has personalized functions that need to be implemented. See Fig. 3, the authorization can be run successfully, the authorization method is as follows:

```
authoization 01
wx.gelSetingl
  success :( res )=> I
  f ( res . authSettingl ' scope . userlnfo ]) их.
getlserlnfo [
  success :( res )=> I thissetData ((
  userlnfo : res . userlnfo
})
}})
 }else{
 this.setDatal(}
 showlogin : true
})
}}])
}
```

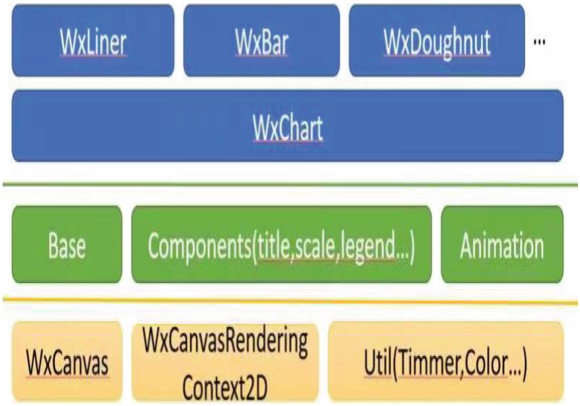

Fig. 4. Mini Program Composition Diagram

If the user's information is already logged in, authorization is not required for the next login. Topics posted by users in the discussion box will be automatically refreshed to this page through software reminders, allowing users to receive information as soon as possible, but with a large amount of topic data, the operation will not be simple. Every time a cloud function initiates a request, only the A small amount of information may result in users not being able to obtain all the information at the first time, so in the face of this situation, algorithms are used to complete it. The general idea of the algorithm is to use the characteristics of other functions. When each task is sent, there is no immediate response when it is received. It should be stored in a data set cache and then returned, and it will be requested if it is returned [11].

The data is then eliminated by the judgment of the number of times to record the limit of the total number. The specific limit algorithm finally realized is as follows:

```
app .Γ outer ' detail ', async ( ctx , next )=>{
let blogId = event . blogId
  let detail = await blogCollection . where ({_ id : blogId )). get (). then
( res =>{
  return res.data
})
const total = countResult . total let commentlist = {
  data :[]
  if (total >0){
  const batchTimes = Math.ceil( total / MAX_LIMIT )
```

```
        const tasks = []
          for ( let i =0; i < batchTimes ; i ++){
          let promise = db . collection(' blog - comment ')
        . skip (¡* MAX _ LI M IT )
        .limit(MAX_LIMIT)
        . where ( l
          bogld
        })
        .orderBy(' createTime ',' desc *).get()
        tasks .
        }
          push (promise)
          if(tasks.length > 0)
        commentList =( await Promise . all ( tasks ).
    reducel ( ace , cur )=>{
    return (
      data : ace . data . concat ( cur . data )
    }})
    }
      ctx . body =(
      commentList ,
      Detail
    }}})
      },
      json: true // Automatically stringifies the body to
JSON
    }
    return await rp(options)
      .then((res) =>
    { return res
    })
    .catch(function (err)
      { }) }
    module.exports = callCloudFn
```

4 Demonstration of the Running Effect

The WeChat applet is shown in Fig. 2

The back-end front-end management system is shown in Fig. 4.

User management. Administrators manage it based on the personal information of students on campus. After the teacher and student users log in on the system, the administrator user can transform, delete, reset the password and other operations on the teacher and student ends [14].

Device management. When adding additional devices, the administrator depends on where and the data are stored. The device administrator function uses two-dimensional code technology, which sets a corresponding two-dimensional code for each device, and the device administrator can edit device information and lock the device [12].

Appointment management. Users decide their own needs according to their own interests, check the status information of the equipment, and work on the equipment that is not working. The lab administrator can modify or reject the user's appointment. After processing, the system will make the first appointment request with the message of the module, notifying the user to pick up the device. The system also implements the functions of "scan code lending" and "scan code return". The administrator can click "Scan Code" to paste the QR code picture on the corresponding device, and the system will perform the return or loan operation according to the button of the reservation process [13].

Message management. During the account registration process, after the administrator reviews the message, the system will send the result to the user account in the form of a module. During the device reservation process, after the user's message is sent, the system will send an audit message to the administrator to facilitate accurate notification in place; After the administrator approves, the system will send the final result to the user as a module message. The module message will be displayed in the WeChat service notification to remind the user to be able to handle it in a timely manner. See Figs. 5 and 6.

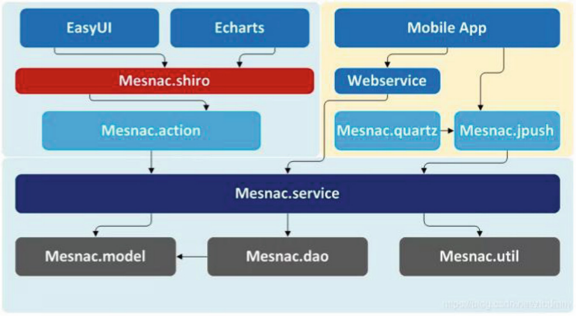

Fig. 5. Structure diagram of back-end front-end management system

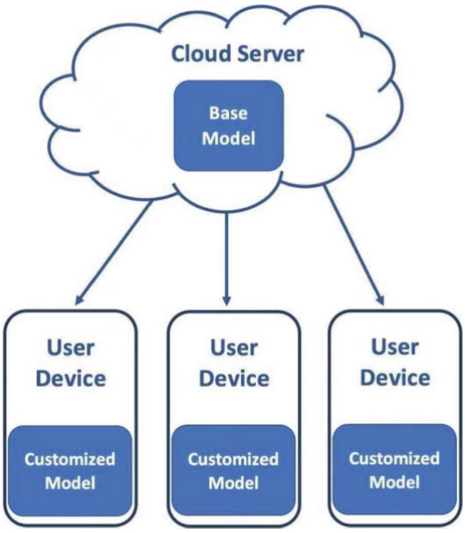

Fig. 6. Management structure diagram

5 Conclusion

While China encourages the development of online learning education, schools are also conscientiously improving each step to guide students to be interested in online education and adapt to such education. The majority of students through a variety of ways to achieve learning, the knowledge of solid learning, the learning attitude is correct, in the study of thinking and practice of their own learning ideas, in the struggle for education to practice the mission of the original intention [15].

With the rapid development of the network, the off-site office in the network era has become within reach, and the rapidity of the network means that the transmission speed is faster; The biggest gain in cloud development is the development of mini programs, developers do not need too much communication, can independently develop a new software. When schools use cloud development technology, they can speed up the research speed of developers, reduce the cost of expenses, and reduce the cost of fees for schools. Cloud development technology is bound to become the pillar of the future.

This system combines WeChat applet and PC Web terminal, and supports the database for cloud development services, which can reduce the burden for operators. The degree of difficulty has developed a new path for our education. Of course, our learning has been improved, and our learning career has been smooth sailing. The current research can not meet the collection of knowledge systems and the use of users. For problems such as being too simplistic, this system still needs to make a series of improvements.

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