Design and Research of Classroom Interaction System based on Cloud API

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ABSTRACT

With the popularization of mobile devices, it is inevitable for intelligent devices to participate in classroom education. Classroom interaction systems based on mobile intelligent devices are also emerging. This paper presents a design scheme of classroom interaction system of Open Cloud Based on API, using the characteristics of open data storage and interface Open Cloud API, development and implementation of classroom interaction system with public network based on mobile devices.

KEYWORDS
Cloud API; classroom interactive; mobile devices.

INTRODUCTION

With the rapid development of mobile Internet, PC traditional Web applications are gradually being Android, apple and other smart devices replaced by smart devices has become a major force in the classroom interaction[1], the interactive software development mode based on there are many, but because the system is not compatible with the platform, the data processing is not unified, the need for different the system design and development in the process of development. In addition, for non-commercial interactive software, the data storage equipment, server equipment is also a lot of investment headaches, the use of Open Cloud API is one of the better solutions.

BACKGROUND AND RELATED TECHNOLOGIES

Background

In the classroom teaching practice, the interaction between teachers and students is the core of the teaching effect. At present, the research of classroom interaction practice based on the traditional projector and interactive whiteboard is more common, but the practice research of interactive classroom based on mobile intelligent terminal is relatively few. At the same time, along with the extensive application of smart mobile devices, as college students to accept new things most of the young people are not far from the teacher lectures, often appear in the teaching process, students play down the phenomenon of mobile phone. If you take advantage of students' interest in smart devices, you will greatly improve classroom efficiency. Because of the popularity of smart devices such as mobile phones, smart devices such as mobile...
phones have become one of the main factors that distract the students' concentration in the traditional classroom teaching mode. Although the school can be controlled through strengthening the management of students use the mobile phone in the classroom and other equipment, but a better approach is to let these devices become the object of class participation, guide the students to use the mobile phone to facilitate learning.

Introduction of cloud API

Cloud API, which is mainly described in the Internet era, the package of Web services into a series of computer easily identifiable data interface, open for the use of third party developers. A command or action that enables an operating system to execute complex, pre written applications by invoking the operating system's API. Through the cloud API, the site through its own services packaged, open to users to provide a window service, that is, site services will only through an entrance to complete the functions required by users[2]. This entry is similar to the API in the operating system, which is called cloud API. Compared with native interactive software development, the development based on Open Cloud API has the following characteristics and advantages:

Mobile device environment: cloud API is fully developed to accommodate mobile devices and systems, and simplifies the application development technology by adopting an integrated cloud based online development model. Lifecycle Management: Open Cloud API platform all aggregated from the development, testing, release, to the various stages required for operation and management of interaction in the process of software development, can do most of the work in the life cycle of interactive software development.

System architecture and design

To construct a system of interactive software developed by the general construction mainly includes four parts, the first layer is the application layer for interactive software, program layer of the system[3]; the second layer is the Framework layer for application interactive software, application framework of the system; the third layer is Libraries layer and environment layer, core library system, which is limited to the environment of the system, often need to different operating system custom development.

DESIGN BASED ON CLOUD API SOFTWARE ARCHITECTURE

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Cloud API has the operating system platform independence, we can directly call the SDK interface provided by its API for data processing, and only need to select the
corresponding mobile operating system environment when the installation package is finally generated[4]. The basic architecture based on the open cloud API is shown in Figure 1 below:

**Open interactive software development under cloud API**

As is known to all, in the development process of classroom interactive software, the main design issues are interactive UI design and data processing. UI interface design is the mainstream of the current basic DIV plus CSS layout, the main requirements are beautiful, user-friendly interface, etc., and the conventional interactive software development is not much difference, here do not do too much tired. Data processing is divided into local and remote data processing, we look at the key data processing in the cloud API data processing, and API calls, here to the author of the third party cloud API platform APICLOUD as an example.

First of all, we need to deploy the SDK development environment provided by the cloud platform to prepare for the introduction of the cloud API module.

**THE INTRODUCTION AND USE OF MODULES**

There are a large number of modules available in the APICLOUD module store, which we can introduce directly into the HTML: adding pages to modules that need to be used:

Var obj = api.require (module name);

Then refer to the use of the corresponding module. If you use the function of a module frequently in a page, you'd better declare it as a global variable.

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**Figure 1.** An interactive software architecture diagram based on the open cloud API.
In the process of APICLOUD based development, data clouds are concepts that need to be understood. It is a cloud database provided by the open cloud API service provider to developers, and we can use it to store and read data. We can create various tables according to their own needs, by adding columns to their table field, according to their own needs set the type of field, for data table operation, say simple point is additions and deletions to change. The use of data clouds, in the document which corresponds (MCM), we through the model module to achieve the operation of data clouds, first introduced and configured under the model module:

```javascript
VAR model = api.require('model');
Model.config({
    Interactive software Key:'A991A337-0212-A29D-0C9C-A518E39FXXXX',
    Host:'https://d.APICLOUD.Com'
});
```

The data in APICLOUD is very diverse, the above data and cloud own server is two, there are also H5 local save, read and write file mode, set preferences, etc. In the development environment packaging tools, you can choose the corresponding platform for cloud compilation, generate corresponding Android or IOS installation package.

**CONCLUDING REMARKS AND ACKNOWLEDGMENTS**

This article is the result of the research project on Educational Technology in Zhejiang Province. Thanks to the Education Department of Zhejiang. This paper explores the process of designing interactive software based on Open Cloud API and analyzes its advantages over common interactive software development. With the popularity of Internet based mobile applications, more companies are willing to open their own resources to developers. They provide cloud API calls and data cloud storage allows developers to get a convenient condition for development, make stronger connections between users and developers and service providers, and open platform for the system is credible and reliable, provide a guarantee of expansion.

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**REFERENCES**