

Research and Analysis of Digital Campus Card System and data integration solutions

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Abstract

Card management system is an important part of digital campus, which advance the pace of construction of University information technology. In this paper, the digital campus and data card management system integration were analyzed according to the principle of University data unified standard developed data standard card management system. Finally, the card management system and the digital campus of data integration building content, to a data integration solutions for data digital Campus card Management system and provides a means and method of integration.

Keywords

Card systems, digital campus, data integration, data sharing, data exchange.

1. Introduction

In recent years, colleges and universities of the rapid development of digital campus, digital business systems to the school management has brought great convenience, and promote the university digital and information technology continues to develop. What Digital Campus is it? Digital Campus is a digital information and campus network based on the use of advanced computer and network technology, advanced means of information and tools to achieve the teaching, research, management, and service for all information resources related to comprehensive digitization; and with science standardize the management of these information resources integration and integration with user management, resource management and rights constitute a unified control; construction of digital campus in the traditional campus based on the expansion of traditional business functions, improving education management level and efficiency, university comprehensive information.

Important information resources for operational subsystems universities have departments need these subsystems include Senate systems, card systems, personnel systems, scientific research systems, student systems, financial systems and other business systems, business systems closely linked with other business systems mutual access to data, in order to prevent "information island" phenomenon, in colleges and universities have established data sharing information platform, that is, data sharing center to prevent all business data isolated situation. In many business systems, digital campus card system is an important component sectors, and each of the teachers and students are closely linked, so data integration design and digital campus card system is also very important.

This paper describes the data card system and campus unified authentication platform, campus information portal platform and integrated data sharing center construction content.

2. Digital Campus Card System and data integration needs analysis

2.1 Introduction Card System

Campus card system is an important part of digital campus, providing comprehensive data collection platform for information technology. Campus Card is the most effective medium for the majority of

staff and students with digital campus organically linked together, to achieve a campus, "one card in hand, around the campus." Card system based on the campus network to induction video IC card for the media, providing comprehensive identification and electronic payment services system platform, card system consists of a variety of information systems platform and application system composed of two levels. Card System application system shown in Figure 1.

Campus card system for the majority of teachers and students to learn, work and life convenient, fast and safe service, set a variety of documents and a variety of wallets in a card, while the card system for the school to create a direct economic benefits, the integration of various resources of the school to improve the management and service levels, brought considerable indirect economic benefits.

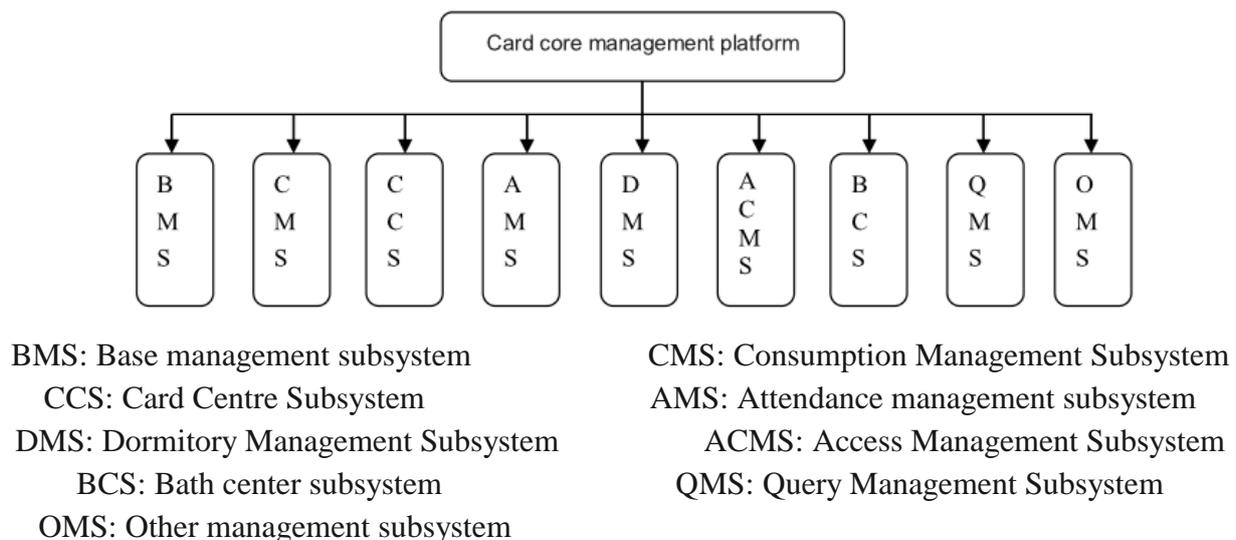


Figure 1. Campus Card System

2.2 integrated with Card Data Systems

Unified authentication and data integration: the authority to determine the user identity information unified identity authentication system, establish a unified authentication platform, achieve the card inquiry system and information portal platform single sign-on.

And information portal platform data integration: the card inquiry system based on the application can be released through information portal system for the majority of teachers and students to provide a unified, personalized information services.

Data integration and sharing of data centers: the use of public data sharing platform, to extract the data from the card need to share the system database, make data sharing center within the school to become the only source of comprehensive data, but also provide data for the card system, as carried out within the school data exchange, sharing, comprehensive data analysis services to provide a complete, effective, credible data base.

3. Information Standards

Universities will be according to the standard level of information management, in addition to the Ministry of Education, national standards, but also must complement their standard. Standard construction of university system must have a strong compatibility, usability, openness and manageability. Standard integrated role is to make the school have uniform standards and norms in data modeling, information collection, processing, data exchange process, each business school guidance system for scientific and effective construction, to ensure that the operational system data sharing .

Standard construction includes data standards, data exchange specification construction. Card Management System in reference digital campus information encoded on the basis of the standard, according to the relevant national standards, industry standards and the actual situation within the school, to develop information standards for schools themselves. Development of standards not only make work evidence-based, is more conducive to achieve between school and inter-school, and between foreign software standard versatility.

Card Management System standard construction include the following information.

Card management system developed data standards, and as part of the digital campus standards, data standards Reference GB - national standard codes, JB - Ministry of Education standard codes, HB - Higher Education industry standard codes, XB - school standard code.

Data exchange specification construction data exchange standards interfaces. Including the construction of data acquisition interface specifications, data transmission interface specification, a standard format to exchange data packets.

4. Integrated main content

Card System is a new business system, all users ranging from school staff, students and temporary staff in the school. Faculty and student user's login name is the only school uniform coding prepared.

4.1 unified authentication integration

Integration Requirements

Referring authentication interface card system of digital campus platform provides for authentication integrated development, to achieve a unified identity authentication integration. After integration, users log in directly through the card number information portal platform, through the rapid entrance card system without the need for secondary certification.

Integrated Principles

Unified authentication platform supports single sign-on between WEB application, when users need access to resources unified authentication platform, unified authentication platform provides the basis for certification if, when the user gets the information returned, direct access to multiple resources, not require secondary certification.

When the user accesses the Unified Authentication platform server, authentication, SSO platform will generate a session token, which records the identity of the user, while producing an associated random number, the random number is sent to the user's browser Save as a cookie.

When users need to log on to another server, the server reads the token information cooki, if not read, said not logged in, if there is an effective and proven, you can read about the identity of the current user, without requiring the user to re-authenticate themselves identity of.

4.2 Information Portal Integration

Add in the information portal platform for rapid entry column "card system" quick entry, click on the link (ie, authentication integrated address) into the card system, card system needs to provide a link address.



Figure 2 portal platform for rapid entry

4.3 Shared Data Integration

After the data integration, data sharing center periodically extracted from the card system-related data to the information card system as the authoritative data, information portal platform for data presentation use. Card system should be established in view of relevant information about data-sharing center for crawling.

5. Data interaction integration solutions

5.1 Integrated Programme

Option One: You can exchange platform ODI (Oracle Data Integrator) through automatic data extraction and data sides issued. Data extraction cycle may agree as follows: day night.

Option Two: If the two sides with the same type of database ORACLE, view open inquiry can establish the relevant privileges available to each other through the establishment of dblink mode, the data in real time to maintain consistency between the two sides.

5.2 required data interaction

Card System provides data: Card account information, personal transaction information, business information, business transaction reports, picked card management, did not receive subsidies.

Data Card system needs: a shared library will send the user data (faculty, the college students, graduate students, cadres appointment and removal of information) to the intermediate database card system, card system issued based on the information newly registered, modification and other operations personnel, card systems assign access permissions based on user data.

5.3 Security card data

Access to the user's card system is read-only, database security card system is not a risk. After the system data integration, no card system business process implications for the card to provide users with convenient, card users can log information portal, access to relevant information about, and you can log in directly to the card system without secondary certification.

6. Conclusion

Card System and Digital Campus Integration through data-sharing center card and other business subsystems business information were integrated effectively avoid the "information island" phenomenon, it is the key to digital campus in the effective use of campus card information resources to achieve. Data integration is the foundation of digital campus, in order to promote the development of digital campus, all subsystems have to do business data integration, data of the infrastructure to better serve students and teachers. Digital campus construction is a long and complex project, how to make this project efficiently, sustainable development needs to be further studied and discussed.

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