

**Design and Implementation of digital clearance system
based on the cloud**

Omar Talal Hamid, Shahad Fais Thabit

**Assist. Lec. Omar Talal Hamid
Al Turath University College
Computer Engineering technique department**

م.م عمر طلال حميد

كلية التراث الجامعة

قسم هندسة تقنيات الحاسوب

**omar.talal@turath.edu.iq
Assist. Lec. Shahad Fais Thabit
Diyala University**

م.م شهد فائز ثابت

جامعة ديالى - رئاسة الجامعة

shahad.fais.thabit@uodiyala.edu.iq

With the development of digital transformation in higher education in Iraq in recent years. There for many services was become do via internet (Online). In this paper a digital clearance system based on the cloud for students and other employees in the university. The main idea for this research is to provide a batter, fast and secure form to do a clearance rather than that current manual process. The system will help clearance officer to do their jobs more easily, fast because all the information they need it is available in their portal account. The system is connecting all departments in the university in cloud server and central secure database. Any department update any information the main database updated at the same time. The other department they can see all lates information such as (Registration, Financial and Library). The system is designed using PHP and MySQL database server. A registration department add the student's information to the system depend on the privileges. The financial department find the students information based on registration what they add and update the students finance info. The library page is responsible for update all information related to library. The last page is clearance page, in this page the clearance officer can search for any student or employ ID and see any information that related to this ID.

Keywords: Clearance System, Digital Transformation, Cloud Services

1 Introduction

The university contains many departments, centers, units, and includes a large number of affiliates. The university student is linked to the financial department, registration, the library, the department he is affiliated with, and others. For example, the release of the graduating student is linked to all those other departments. Departments in the university. In traditional offline processing procedures, the student will first receive a paper form to collect the stamps of success for graduation from the various departments, he must go to these departments. Only those who have obtained all success stamps from the departments can graduate and obtain the degree certificate ¹⁻³. According to statistics, we found that more than 95% of students have never been behind Graduation. However, the degree management staff cannot ascertain whether students have arrears, so Students still have to go to the Finance and other departments to get the Seal of Success. We can see that currently traditional Ineffective handling procedures. With the development of Internet technology, paperwork is completed online actions become possible. In this paper, a digital internet-based university management system is proposed, which is an integrated system that connects all university departments with affiliates, students and administrators, and whose programs have been developed in. Functional structure and main solution of the order is also discussed.

From now on, this university management system project in PHP mainly focuses on the digital transformation of the university, the system displays all available records of faculties and students, their available marks, etc. This project is divided into three categories: administrator, student, and university professor. In an overview of this web application, the administrator has all the major controls in the system which includes the management of all student property. In addition to monitoring all faculty members, associates and information about the university, managing all departments of the university, and collecting relevant information from all departments. Organizing and maintaining files, which are used to generate reports in various formats to measure individual performance and the overall performance of students and associates. This system will serve as a platform where users will be able to access the facilities The University is from anywhere using the internet, and the university management system stores and retrieves information online. The system is based on the principle of powers, as each department or manager has an authority related to his job position only. Only the master administrator of the system can have all the master and child rights and can distribute them to the administrators in the system. It can also download all student, faculty and administrative data in case of data backup. The purpose of the system deals with the maintenance of university and college information, faculty members, associates, students and students within the university. The automation project is included from the student's information and can be implemented in the departments of faculties and different departments. The project deals with data retrieval through the college interface or the electronic portal using the database. It collects relevant information from all departments of the organization and maintains files, which are used to generate reports in various formats to measure people, the overall performance of students and the administrative performance of the university and teachers. In the following sections, the part of this program will be clarified, which is the release of the university student, and a number of future research will be attached to the remaining parts of the system.

2. The functional structure of system

The functional structure of the graduation management system is shown in Figure 1. The system was set up in a Browser/Cloud mode. Students, department staff and administrators can access the system via the Internet. They can Access the system anywhere. After passing the login information authentication platform, they can deal with Clearance procedures and inquiries about statistics and data in the system ⁴⁻⁷. The basic database that links the financial system and the registration system together is dealt with, the electronic student card database and the financial and registration system database are a unified and secured database on Google clouds. The list is the academic database. The data source for the study is the unified database for all systems. System integration has between the patent management system, the library system, the registration system and the financial system through the web service. The students the pass stamp can be obtained from the library through the Clearance Management System.

Figure 1. Functional structure of the patent management system. Students can complete the clearance procedure online in the clearance management system. If they have there is no arrears, they do not need to go to the financial department to get the traffic stamp.

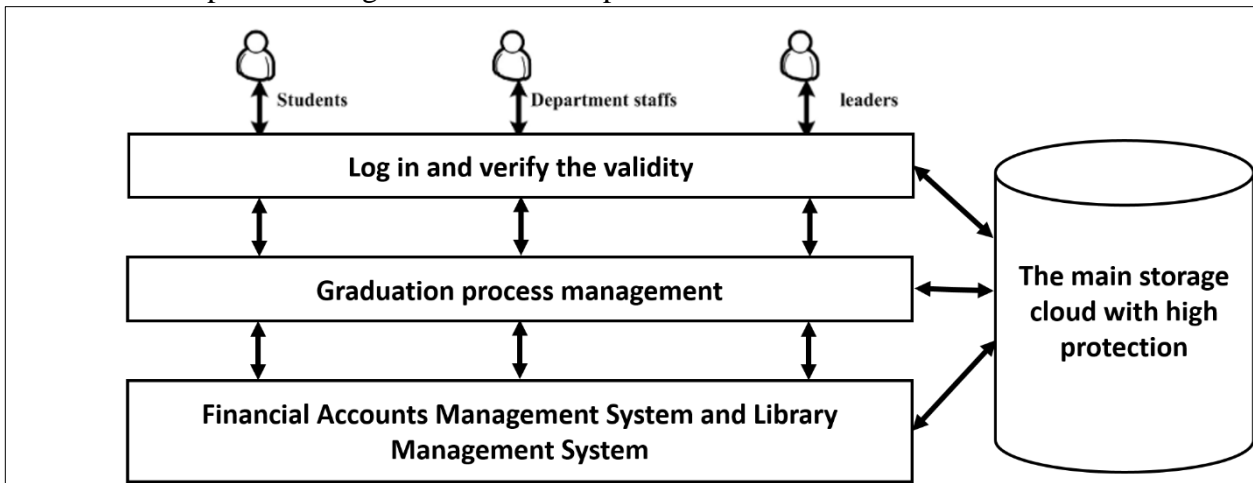


Figure 1. Functional structure of the patent management system.

The system will show that they have obtained the Traffic Seal from the Financial Department. If they don't borrow any books, they don't need to go to the library to get the pass stamp. The system will show that they have obtained the pass seal from the library. Department staff can check students' graduation qualifications online. Leaders can query a file Students clearance procedure statistics in real time to facilitate modification and publication related work. The system can show us in real time how many students have clearance qualifications.

3. The main solution for patent management system

3.1. The link between the financial system and the clearance system

The financial system in most systems is only authorized to access the private financial sector the network is not authorized to access the Internet. Therefore, the graduation management system cannot receive a file financial data directly. The traditional way to synchronize financial data is to import the financial data into a file Graduation management system by hand. The biggest problem with this solution is not able to achieve real time Synchronization of financial data. After the students pay the arrears, they can't get success right away a stamp from the Finance Department so that employees can manually update the financial statements. In order to solve the problem of putting unified data in one cloud secured in the cloud of Google. Figure 2 and Figure 3. The interface to the browser for financial data.

الرقم الجامعي	الاسم	قناة القبول
2111	علي حسين عبد الكريم	قناة عامة
القسم	المرحلة	الدراسة
الهندسة المعمارية	الاولى	صباحي
القسط الكلي	نسبة التخفيض	القسط بعد التخفيض
2250000	%0	2250000
المبلغ الواصل	نسبة التحصيل	المبلغ المتبقي
1873000	%83.244444444444	377000

نوع الوصل للسنة الدراسية 2021-2022

الرجاء قسم بأختيار نوع الوصل

مبلغ التسديد الحالي

ملاحظات

تسديد

Figure 2: The interface to the browser for financial data In the case of the student a financial amount is required

الرقم الجامعي	الاسم	قناة القبول
2111	علي حسين عبد الكريم	قناة عامة
القسم	المرحلة	الدراسة
الهندسة المعمارية	الاولى	صباحي
القسط الكلي	نسبة التخفيض	القسط بعد التخفيض
2250000	%0	2250000
المبلغ الواصل	نسبة التحصيل	المبلغ المتبقي
2250000	%100	0

نوع الوصل للسنة الدراسية 2021-2022

الرجاء قسم بأختيار نوع الوصل

مبلغ التسديد الحالي

ملاحظات

تسديد

Figure ٣: The interface to the browser for financial data in the event that the student is not required to pay a sum of money

In the financial system, the data appears in detail for everyone who has financial relationships and those who do not have any financial relationships. It also enables them to update the information immediately and from anywhere as soon as they connect to the Internet. Officials authorized to access information and data related to the financial system have specific powers from the main administrator of the system, and all their movements in the system are monitored and recorded. The figure shows the schematic diagram of the patent system related to the financial system. When a student who is in arrears pays tuition fees, the financial database will generate new payment data. The new Payment data will first be transferred to the master

database. When the main database receives a file Payment data, the data will be transferred instantly to the clearance database. Finally, the financial statements Synchronous from the financial database to the real-time patent disclosure database 8,9 . After students with arrears paying the tuition fee, they can get the pass stamp from the financial department in the system. The result will be displayed in the graduation system. The degree department staff will know that this student is not in arrears.

3.2 Online self-service for library patent administration students

In the traditional process, all students' library accounts will be canceled at the same time before graduation, Students must go to the library to get the Seal of Success. In fact, before the students in to study for the next stages they are not leaving the university soon, and they still need to borrow books from the library. However, after Library accounts have been cancelled, and they do not have permission to borrow any books. On the other hand, even if it Students did not borrow any books, they also had to go to the library to get the stamp of success. We often see a lot Students line up at the library. Students spend a lot of time lining up, and they all feel very bad. From the students' perspective, we should allow them to cancel library accounts based on their plan. In the same time, there is no need to ask non-borrowing students to go to the library to get the stamp of success. If the student He did not borrow any books, the system should automatically give him the pass stamp. In order to solve this the problem is, we designed a web service based solution .The solution is shown in the Figure 4.

براءة الذمة المكتبية

أدخل الرقم الجامعي للطالب او للمنتسب

بحث

تاريخ الاستعادة	تاريخ الاستعارة	عنوان الكتاب	
2022-07-31	2022-07-31	مصادر المعلومات في دول الخليج العربي	1
2022-07-31	2022-07-31	الاعلام صناعة العقول	2
استعادة	2022-07-31	فن الصحافة	3

Figure 4: The interface to the browser for library data.

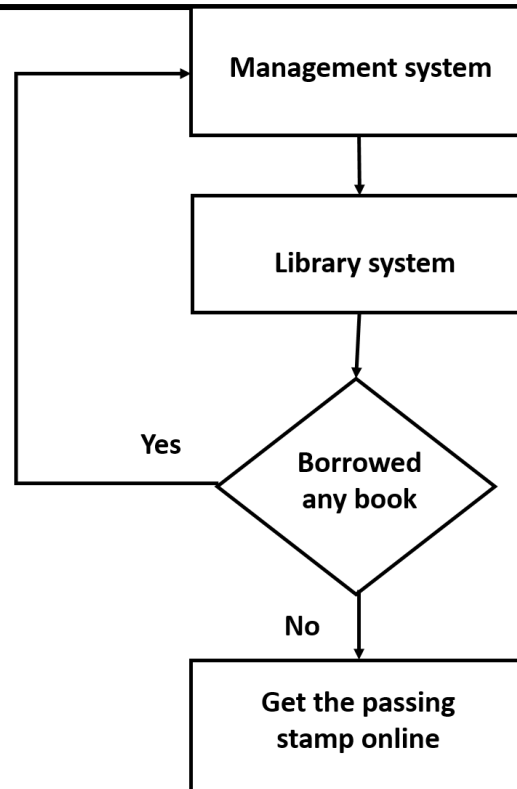


Figure 5: Process of the graduation management in the library.

The system integration is implemented based on the Web service 10 between the graduation management system and the library system. The system will automatically check whether a student has borrowed books. If there are borrowed books, the system will remind the student to return the books firstly. If there are no borrowed books, the system will he will get the passing stamp online from the library immediately. Figure 5. Process of the graduation management in the library.

4. Results

According to statistics, only 3% of students have arrears before graduation. Before starting to use the system, Regardless of whether the students were in arrears, they had to go to the financial department to get the stamp of success or the electronic payment. After the system is put into use, 97% of students without arrears will not have to go to finance Section for traffic notice. They will get the traffic notification in the system automatically. Reduce Workload for most students. They can get online traffic notification from the library instantly. They don't have to line up at the library. The digital clearance management system makes most students feel comfortable. If the administrator wants to know the student's current graduation statistics, he can log in to the Clearance Department verification system. The system can show us in real time how many students have completed the clearance process.

5. Conclusions

It adopts the online digital clearance system. The system will help reduce the workload of getting stamps of success for students, and it can help improve the efficiency of clearance management. With the development of Internet technology, we must serve students and associates with more digital applications. Only more applications of Internet technology can improve the efficiency of management at the university. This system was applied in one of the Iraqi universities.

References

1. Guo Qingshun, Yu Shanshan, He Haitao. Discussion on the Construction of New Generation of University Affairs Management Information System. China Education Network, 2012, 2:60-62.
2. Jiang Dongxing, Guo Dayong, Luo Nianlong, etc. Planning and Practice of New Generation Digital Campus in Tsinghua University. Journal of Xiamen University (Natural Science) ,2007, 46:173-178.
3. Yang Fan, Yang Jie, Li Yiming. Design and Implementation of Self - help Graduation Management System Based on SOA. Acta Scientiarum Naturalium Universitatis Sunyatseni, 2009, 48:210-212.

4. Tian Peng, Wu Qingjie, Chen Yi. Design and Implementation of a Management and Service System for Graduation Work Based on Data Integration. *Experimental Technology and Management*, 2011, 28 (5):308-311.
5. Jiang Dongxing, Yuan Xulei, Liu Qixin, etc. Exploration on University Information Architecture. *Experimental Technology and Management*, 2011, 28(5):7-11.
6. Guo Yue, Zhang Ming, Ye Aibing. Research and Development of Integration Heterogeneous Data in University Based On ODI. *Techniques of Automation & Applications*. 2011, 30 (6):24-27.
7. Yin Shixue, Chen Huaichu, Shen Xichen. Analysis of the Data Relationship of the Related System of Student School-leaving in Tsinghua University. *Acta Scientiarum Naturalium Universitatis Sunyatseni*, 2009, 48:120-123.
8. Liu Guobin, Wu Qi. Design and Implementation of the Real-time Financial Data Inquiry System in the Network Environment. *China Management Informationization*, 2006, 9(11):37-41.
9. Wang Yubiao, Rao Xiru, He Pan. Incremental database synchronization update mechanism under heterogeneous environment. *Computer Engineering and Design*, 2011, 32(3):948-951.
10. Miao Qing, Chen Gang. Application Integration Based on Web Service in Universities. *Computer Technology and Development*, 2008, 18(3):17-20.