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Designing the electronic payment system for the UOITC university using Zain Cash wallet

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ABSTRACT

The payment system is a suggested project that will construct an adequate information management system, for the University of Information Technology and Communication . The proposed system will be sufficient for documenting cash payments of university fees, and eliminating mistakes caused by the manual approach of collecting student payment information. The main objective of this project is to design and implement an electronic payment system(EPS). allows students of private government University in addition evening students at the university, to pay tuition fees using the electronic payment system through the Zain Cash Wallet service. The computer-based payment documentation system of the UOITC was implemented using PHP languages, MYSQL database. Results indicate that the design of an efficient system enhances the payment system of the UOITC; the work satisfied all the objectives intended.

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1. Introduction

The desire for new payment methods is being sparked by the phenomenal expansion of globally interconnected computer networks and the prevalent commercial tendency of leveraging the networks is being viewed as a new arena for corporate operations. The three widely utilized electronic payment These new approaches must achieve hitherto excellent levels of globalization, decentralization, privacy, and speed for consumers and businesses. [1]

Although the claim may not always hold, Electronics checking and EPS are often used interchangeably by many end users. Electronic checking makes the most of the current financial system by eliminating paper checks. Electronic checking and electronic fund transfers are interchangeable terms[2]

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2. Related Work

A number of previous scholars have studied about electronic payments. In 2019, B Kurniawan¹, et al. adopted smart cards, which are cards with embedded computer chips that contain many bank accounts and personal data. The card owned by Unicom students can be used as a student signature card, ATM card, attendance card, and other purposes. In addition, digital payment (electronic payment) is a transaction using an Account and secure information is kept in an electronic wallet(EW), which is typically in the form of a smart card. [3] In 2020, Nasr, Mohamed Hassan, Mohamed Hassan Farrag, and Mona Nasr as well as DI Cendana and TD Palaoag presented the possibilities of implementing and approving a digital payment framework created for Philippine higher education institutions to enhance payment services, take advantage of student identity, and address students' behavioral issues with tuition payments by transforming the student ID into a smart ID. The information and findings were presented using a combination of quantitative and qualitative techniques. Data were gathered using a pre-tested questionnaire, and 288 participants were selected among the registered pupils by using targeted snowball selection. A total of 9% of the 6,596 registered students had a credit left over at the end of the semester, according to the findings. However, in other responsibilities, (66%) of scholars reported failing to pay their fees on time. Also, (75%) of working parents abroad recommended the use of a smart card for payment to ensure that tuition funds are spent as intended. Furthermore, the system was utilized to assess uptake and acceptance, yielding a favorable perception of smartness in a university setting of 91.5%. [4,5] In 2020, Nyondo, M., and Lameck, N suggested that students go through a detailed clearance process to determine whether they owe the school anything, such as unpaid fees, mattresses, books, and many other similar items to effectively disengage. A clearance form is supplied to such students, and all parties represented on the form are required to clear the student up to the final authority, who is usually the School Head Teacher. This process is typical among students who have completed their academic requirements and return to their former secondary schools to obtain their statements of results or school certificates. The procedure of student clearance involves various parties, such as faculty, bursary, library, sports, and examinations, after which the students are allowed to collect their school certificate or provided a permit to transfer for those who intend to transfer to other schools. An increasing interest is evident in automating the payment process using centralized matching methods that integrate efficient algorithms for SSPS given the high number of learners often involved in such challenges. Several educational institutions have similar automated systems in place. As a result of technological advancements in recent years, we have entered a new era of web-based systems[6]. In 2021, Gloria Marbun, Julian to Agung Saputro, and Haryono Subiyakto introduced methods that were used in a survey utilizing Google forms; questionnaires were distributed as part of the survey procedure. With requirements that the subject is a current student and uses a virtual account-based tuition payment system, (185) respondents with a strata-1 education level made up the study's sample. According to the study's findings, initial trust reduces the impact of Responsibilities of performance, effort, and social factors on behavior intention. Subsequently, Supportive variables and behavioral goals affect user behavior. In addition, initial trust cannot control the effect of self-efficacy on the behavior intention of a computer.

Several payment system barriers are identified; thus, universities must enhance their system performance as service providers to increase customer confidence. Consequently, interest in implementing a system for online tuition payments via virtual accounts has increased. [7] In 2022, Eko Susanto, Ikin Solikin, and Budi Supriatono Purnomo presented an examination of numerous articles from Asian countries in order to get a general idea of the factors affecting the acceptance of digital payments. Many mobile payment articles were examined. discovered to be the most generally found theories to greatly alter user intent and even the continuous digital payment use. In the adoption of electronic payments, several user-related factors, including trust, risk perception, comfort, secure and societal effects. Interestingly, several indicators were inconsequential due to variances in EP of goods. Numerous studies have examined different types of the PE, such as mobile payments, payment applications, QR Codes, internet banking, card-with digital payment, and the acceptability of EP in various Asian nations. [8].

3. PROPOSED SYSTEM

The proposed method and the techniques used for the payment mechanism of the University of Information Technology and Communications (UOITC) are described in the following section.

1.2 System requirements

The key requirements for the fee management the system can be classified into functional and non-functional requirements.

3.1.1 Functional requirements

- Allow administrators to add and remove students' records ,
- Allow the system administrator to add and manage tuition,
- Users(admin or student) can make payments, through traditional methods or using the Zain Cash wallet
- The system reported the unpaid invoices.

3.1.2 Nonfunctional requirements

- Usability is very important ; the user interface and environment must be friendly for a non-expert user.
- Accuracy is another important nonfunctional requirement for the fee management system. The fees calculated should be accurate, and consistent.
- Availability, the system should be available at least and make full system backups that include files related to web applications and database, and backups are supposed to be made periodically
- Maintainability, there may be a need to upgrade or add additional features to the EPS.

3.1.3 EPS Software Requirements

A running Windows server, PHP for processing ,Front-end interface (Html ,JavaScript) and back-end MySQL.

4. System Analysis

Figure 1 shows the analysis of the proposed system, which consists of the following:

- 1- Actor (administer)
- 2- Student

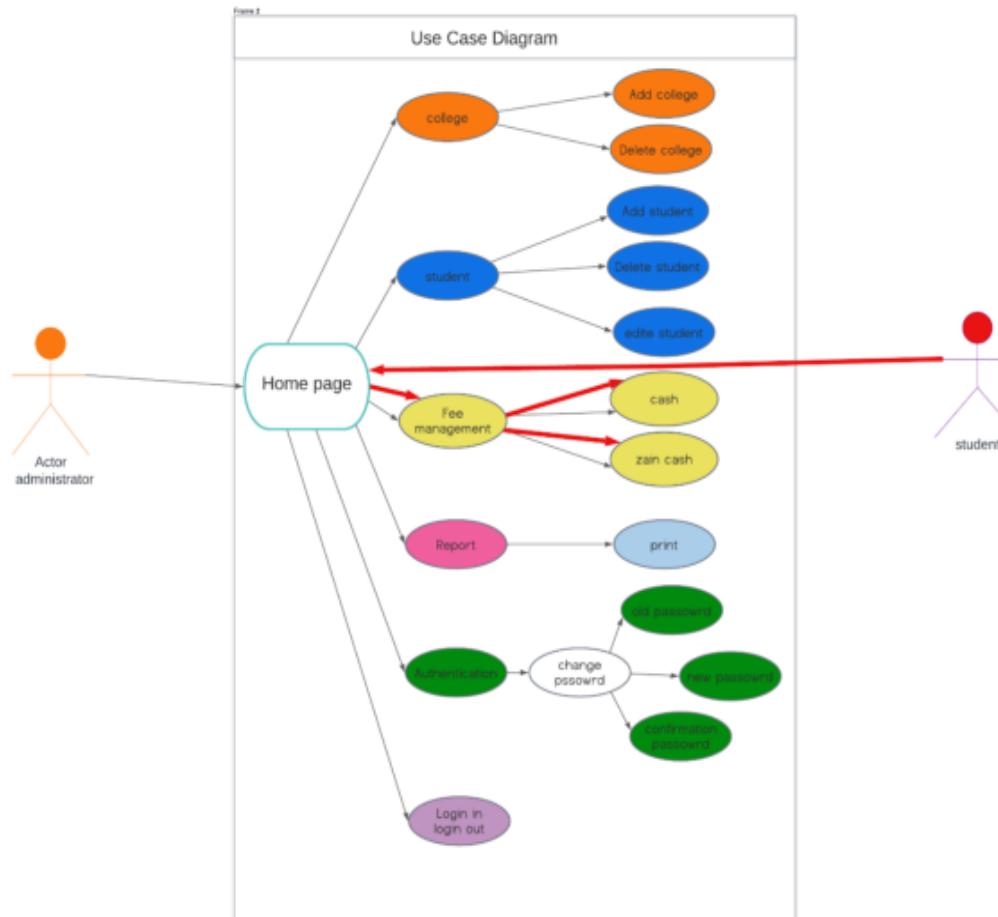


Fig 1 Use of case diagram system

The actor (admin) is responsible for managing the entire program, where he can add and remove colleges as well as add, remove, and modify student details and fee management, print reports, and be the only one allowed to log in.

5. Design of the Proposed System

These proposed systems have been created to understand the mechanism of the system’s operation. The design of the proposed system includes two types:

- 1- Design pages reduced with input system, which includes (page of college, page of the student, report ...).
- 2- Design of database programmed in MySQL language.

5.1 System Architecture

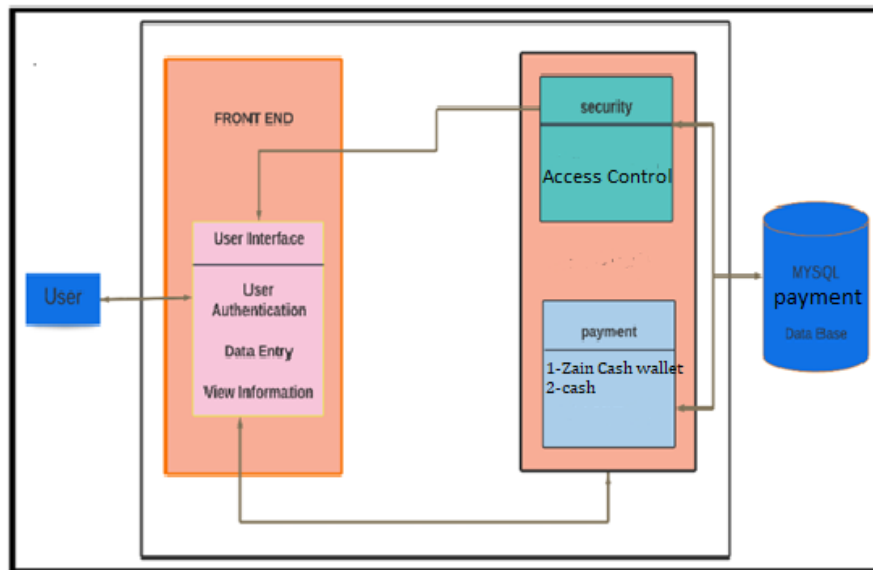


Fig 2 System Architecture

The system is based on two user classes:

- Student: A university fee payment form allows the students to pay university fees through the Zain Cash service.
- Administrator: A login form requires a username and password. After login, a form that allows the admin to create student profiles is provided. It can also update university fees.

In Figure .2 The suggested system is based on its concept and functions by allowing users to log in using a web browser from any device, such as a computer, a mobile phone, or a desktop computer. While the middle ware which

serves as a bridge between a web browser and a database will be created using the PHP programming language. and payment databases handle information about student university tuition. The proposed work includes the *form adding the college name* , where the students are enrolled, list store the student’s information, such as the name, phone number, total fees, amount paid, outstanding balance, and the date the fees were paid.

الاجور

بحث
حذف

الكلية

تاريخ التسجيل

الاسم

ادارة المدفوعات

الاجراءات	تاريخ الدفع	الكلية	المتبقى	الاجور	الاسم/رقم الهوية
الرجوع الدفع	02 Aug 22	bit	1500000	3000000	wail 0781187564

First Previous 1 Next Last

Fig.3 Fee Form

Tuition fees are paid by pressing the Payment button at the bottom of the list, where two payment methods appear (Cash or Zain Cash). We can also inquire about the details of the total fees through the Fees button in the list. Moreover, through this list, we can query, search, and delete information through the delete and search buttons. Students are searched using the student’s name, the name of the college, and the date of the student’s registration in the system.

**** * 13

Expiry date: 2/16

Name: wail

طرق الدفع

cash

الملخص

الحساب الكلي: الاسم الطالب

المبلغ: المبلغ البراد دفعه

ارسال

Fig.4 Zain payment Report

Admin can permanently delete the student profile from the system by selecting the delete button, the send button is selected to save the student in the database as shown in Figure 4.

Here, cash payments are accepted, and system require the student's name and the payment amount. A summary of the procedure is displayed in the following section as shown in figure 5.

Fig .5 cash payments

In addition, payment is made by card or wallet Zain Cash, and the number (wallet or card) is requested, as well as the number of the sender (student), the number of the recipient (university), and the amount to be paid. Then, the payment button is selected, and the information is saved in the system as shown in Figure .6.

Fig 6. From of add information

When the user selects the fees button in the list of procedures, he will be transferred to this list (the list of fees), which includes the name of the student, the mobile number, the total amount of payment, the amount paid, the outstanding balance, and the payment date.

معلومات الطالب			
الاسم	رقم الهاتف	التاريخ	الكلية
الاسم	0781187564	02-08-2022	كلية التربية

معلومات الاجر		
التاريخ	الاجر	ملاحظات
02-08-2022	1500000	

المبلغ الاجمالي 3000000
 الاجر الاجمالي 1500000
 المستحق 1500000

Fig.7 Report of fees

The fee report as shown in figure .7 , is divided into two parts: student information (student name, college name, mobile number, and payment date) and fee (total fee) details (total fees, fees paid, and unpaid fees).

6. Conclusions

The fee management project aims to improve storage of tuition fee data of the students of the UOITC. The process of entering, retrieving, and updating tuition information is very simple and convenient, and the number of suggestions per person is less than manual registration and storage. An electronic payment system is proposed for automating and improving the tuition fee payment process. Access to and retrieval of stored data are simplified, and payment receipts are automatically generated. The two methods to make payments in the proposed system include electronic payment (Zain Cash) and cash payment.

7. Future Work

The system can be developed by connecting it to a mobile application, and payments are made via mobile phone. The system can be improved by incorporating new payment methods, such as MasterCard and Visa cards. The institution can open a bank account to enable the students to use ATMs to pay for tuition with a credit card.

(1)

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