

# Cloud Based Novel Approach for Higher Educational Institutions Students Fees Management System

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**Abstract** — A higher education institution's fee management system automates the collecting of student fees. The system manages tuition fees, project fees, and other payments for student services because it is an online platform. It can control budgets, payroll, other outlays, fees and offers total transparency and insight on fee-related transactions. All documentation is available online via the fee management system, making the procedure paperless. Alerts about upcoming fee payments can be sent through SMS or email to students and parents. The system has taken the place of all these time-consuming procedures. Parents may simply manage admissions for their kids with the aid of a system that includes integrated fee management system. Mobile phone fee management systems are very adaptable and it has no negative environmental effects. The system must be able to supply information to outside processes that need it for reporting. Such data paths ought to be present in an ERP system. The management of individual and general user accounts is made simple by the use of fee management system. Most importantly, the system makes sure that fees are paid on time, saving the time, money, effort, and resources on tracking fee payments.

**Keywords:** Higher Education Institution; Fee management System; Cloud based ERP.

## 1. Introduction

Education has been impacted by changes in information and communication technologies (ICTs) across all societal sectors [5]. All facets of society have been impacted by the considerable advancements in information and communication technologies, including institutional payments administration [5]. This has resulted in the growth of multiple online apps with a wide range of features, including the maintenance of company records, health records, registration processes, and much more [5]. The use of ICTs in the form of eLearning is transforming how learning and teaching are done in higher education.

One of the most important aspects of handling funds in any organization is accounting [5]. Fee is the term used to describe recurring payments made to a school or other similar organization for ongoing services. Simply described, a departmental fee is a set amount paid at regular intervals to the department by a student(s) in exchange for their continuous enrollment in the school and the efficient operation of the department [10]. Today's students pay all of their tuition to their universities by bank draughts, electronic funds transfers, UPI payments, or cash deposits to the university's account at particular bank branches. These approaches have been shown to be ineffective [11].

## 2. Literature Survey

Yeboah Asuamah Samuel (2012) et.al., evaluating students' attitudes towards paying tuition fees in order to further knowledge in the field of educational finance. For a sample of 149, they were chosen using the convenience

sample approach. Scholarships and remittances from parents, friends, and relatives were the two main sources of finance for students' education. According to the research, students have little awareness of tuition and other costs; they struggle to pay for their education, and this causes them to worry, which makes it difficult for them to concentrate while they are learning.

Kartiki Datarkar (2016) et.al., offers a straightforward user interface for maintaining student information. All types of student information, academic reports, college information, course information, curriculum, batch information, placement information, and other resource information are all dealt with by the student information system. Additionally, it will include information about the faculty, batch execution, students, and any updates to the college administration's various academic announcements to the staff and students.

Vedant Banait (2019) et.al., described in their article that, E-challan with Student Database was a web-based programme that has been utilized on college campuses and is accessible to any registered user. The suggested programme features a web-based user interface (UI) that is simple to comprehend and use by any user, uses the least amount of human work possible, and avoids human errors.

Juhriyansyah Dalle (2021) et.al., aims to develop a web-based STF payment system that makes use of statistical, probability, and Naive Bayes techniques to make it simple for students to understand how much a school's tuition will cost them. With 83.3%, the outcome demonstrated that the predicted cost of STF payments was appropriate.

Ajay Verma (2021) et.al., states as a result, many students who attend colleges pay their tuition in full by making cash deposits, transferring money electronically, or writing checks to the colleges' designated bank branches. These payment methods have not proven to be effective enough, particularly during test and exam times when the majority of students must pay fees in order to fulfill requirements for admission to testing facilities. Long lines, excessive student waiting time, and crowding at the banks where payments are made all contribute to the fee payment procedure' negative attributes. The majority of students, according to the findings, are dissatisfied with the ways in which they are now required to pay their tuition fees to the university and believe that the procedure may be improved by an online system for doing so.

### 3. Research Model

A higher education institution's fee management system automates the collecting of student fees. The system manages tuition fees, project fees, and other payments for student services because it is an online platform. The system is available as a standalone module or as a component of a larger ERP system. The system may produce transaction receipts, refunds, reminders, tokens, and can also cancel transactions. The option of adjusting fees in accordance with the quantity of instruction hours taken is also available.

Parents, teachers, students, and various other participants in the process have access to the data. Parents and kids do not have to wait in queue at the fee counters to pay fees online. All documentation is available online via the fee management system, making the procedure paperless. There are no processing charges. Transparency in all transactions is guaranteed by the electronic generation and distribution of receipts. There is no set time window during which transactions can be completed; the system is accessible at all times. The following figure 1 illustrates that the Use-case diagram for students' fee management system.

A fee management system offers total transparency and insight on fee-related transactions. For data redundancy, each receipt is created, noted, logged, and replicated in a single database. Data corruption and sabotage are not a possibility. Utilising cutting-edge security methods, data is encrypted and secured. Transparency of transactions is ensured by all of this. There is no room for oversight or theft. Manual entry errors are not possible. Administrators are able to retrieve all management records for use in reporting. Each student will have their own unique account. Individual accounts are accessible to both parents and students. Data and information specific to individual student will be available in an account. They can access

information regarding their academic programme, electives, competitions, dorm fees, meal costs, and other fees.

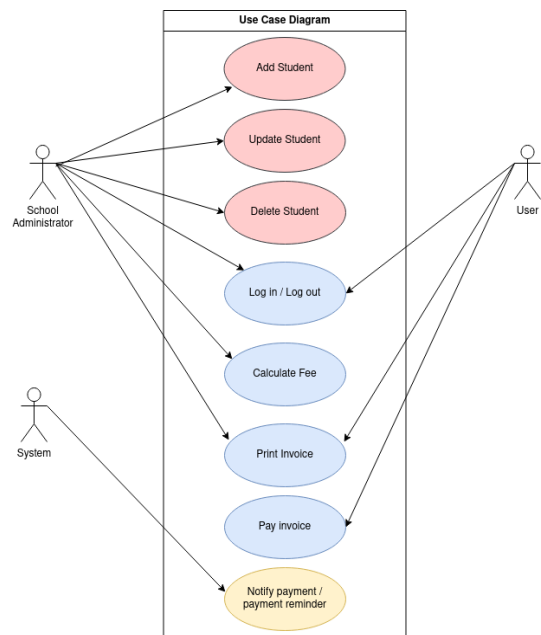


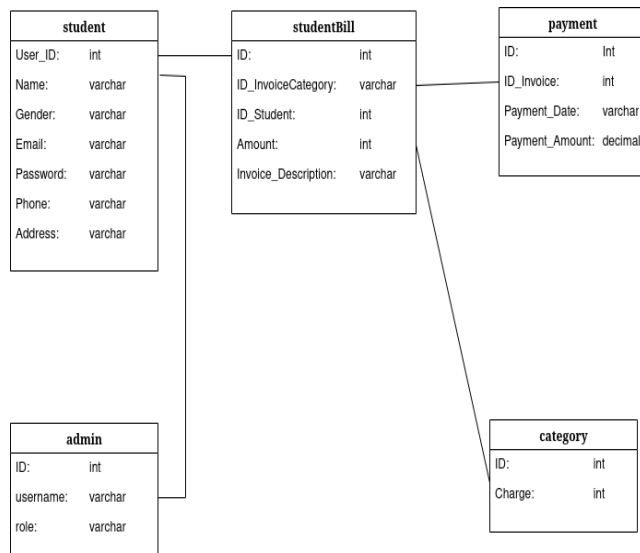
Fig. 1: Use-case diagram for students' fee management system

The dashboard of the school fee management software system also displays any fees that must be paid for additional assignments, help, and tuition. Other forms of information, such as learning opportunities, virtual classrooms, guest teacher visits, etc., can also be displayed on the account dashboard.

Alerts about upcoming fee payments can be sent through SMS or email to students and parents. They can be reminded of additional payments, such as those for taking specialized classes, in addition to tuition. Additionally, they can be informed about complimentary virtual classrooms by visiting subject-matter experts or substitute teachers. Notifications make sure that parents and students don't forget to make critical payments. Additionally, it guarantees that students can benefit from specialized programmes, learning opportunities, and outside providers of learning services.

The higher education institutions' fee management system can control budgets, payroll, other outlays, and fees. All payments can be made online rather than at actual point-of-contact counters. Even gifts made to a organization's trust fund can be received online, and the data is clearly documented. Through the fees management system, the institution can also set up a recurring gift programme from alumni and the general public. A central account can receive the funds that have been gathered.

Admission to a higher educational institution used to be a laborious procedure. It has strict paperwork requirements. Because there was still paper used, it was typical to see students and their parents running around with a lot of paper and pens. The fee management system has taken the place of all these time-consuming procedures. Parents may simply manage admissions for their kids with the aid of a system that includes integrated fee management system.



**Fig.2: Data design for students' fee management system**

Mobile phone fee management systems are very adaptable. Parents of students can handle all fee-related transactions via their smart phones using the iOS and Android fee management systems. Considering the rise in the use of smart phones for financial transactions, mobile applications are extremely helpful. The student can use it as a smart card to enter exam rooms by using a fee management mobile app. They can use the mobile app to scan QR codes. Like they do with the desktop software, consumers can handle all of their daily spending requirements with the mobile app. The above figure 2 illustrates that the data design for students fee management system.

## 4. Result & Discussion

An excellent fee management system is cloud-based and has the capacity to handle numerous requests at once. A system like this is perfect for institutions with large student populations from many regions. Any volume of transactions can be handled by the cloud-based solution. All desktop and mobile applications sync with the cloud-based data backup. Additionally, there is offline support, allowing some vital information and functionality to be pre-downloaded and used without an internet connection.

An automated, paperless fee management system has no negative environmental effects. There aren't any complicated manual or paper-based processing needs that would need a lot of resources. It may be necessary to use electricity-hungry devices like copiers, printers, and fax machines. However, a cloud-based fee management system does not need any of these things; all tasks performed by the system are automated, paperless, and do not require manual input other than for data entry.

A fee management system must be able to supply information to outside processes that need it for reporting. Such data paths ought to be present in an ERP system's fee management system. Support for reporting and alerts should also be included in a standalone module. The data needs to be organized for storage to make reporting tasks simpler. These needs must be taken into account when designing the database and the schema.

## 5. Conclusion

For administrators, the fee management system offers a plethora of advantages. It enables the institution to scale back its operations without being concerned about administrative costs. The management of individual and general user accounts is made simple by the use of fee management system. On the cloud, the system's data is extremely safe and untouchable by hackers. The system is user-friendly due to its self-explanatory user interface. Most importantly, the system makes sure that fees are paid on time, saving the time, money, effort, and resources on tracking fee payments.

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