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A Conceptual Framework for Fee Automation System

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Abstract
In 21st Century , across all over the world several students studying in Universities who pay all their fees through cash deposits, electronic cash transfer, UPI payment or bank drafts to the University's account in specific bank branches. These methods have proven inefficient in more ways than one. It was upon such background that we, the researchers embarked on a paper aimed at developing an alternate system that enables students to securely pay fees. The system is developed using Java Derby, Java Swing and Apache NetBeans(IDE). The new system will assist students in paying their fees and issues them a receipt automatically. Java Swing is a light weight Java graphical user interface (GUI) widget toolkit that includes a rich set of widgets. It is part of Java Foundation Classes (JFC) and includes several packages for developing rich desktop applications in Java. Swing includes build-in control such as labels, buttons, panels, toolbars etc. To display HTTP or rich text format (RTF). Fee Automation system can replace the manual fee receipt system.

Keywords:*Fee Automation System, Online Fee Submission.*

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I. INTRODUCTION

Fees is defined as money regularly paid to a school or similar institution for continuing services. Simply put, departmental fee is that fixed interval payment made by a student(s) to the department for he or she's continued stay in the institution and for the smooth running of the department. From the definition above, one can pinpoint that departmental fee ought to be paid bi-semester. In university systems, there is a need for automated method of storing data, so a greater need for an automated online departmental fee management system. This will go a long way in alleviating the various problems and stress involved in the manual method of departmental fee payment. Also the issue of delay in being issued a receipt as a result of inability to complete the tedious manual processing of bank draft will be curtailed. The focus of this research therefore is to provide a reliable and transparent system devoid of personal inclinations and interest, to eliminate the stress of queuing for long hours during departmental fee payment in the study university. Using computer based system for fees payment necessitated this research in order to help solve these problems of either delayed payment, or the students not paying at all. Using university systems as the case study, the research has the intention of creating a software that could process students school fees payment to the university's bank accounts and electronically lodging individual students fees indicating name, department, matriculation number, level, date of payment, amount of money paid, academic session/semester, bank details, phone number and some other personal records. This will enhance prompt payment and safe delivery and automatically stop the management and students from being frustrated financially and otherwise. University systems have a large number of students who are supposed to pay all the university fees through cash deposits or bank drafts to the university's account in various bank branches. Prior to now, students often embraced technological advancement with the fear of the unknown and as such have decided to undertake the usual rigorous, stressful and time consuming manual methods. This method of payment has not been efficient enough especially during periods of tests and examinations when most of the students are paying fees to meet the requirements for entering examination halls. The process of fees payment in such periods is characterized by long queues, too much waiting by students and congestion at banks where payments are made. Students queue to pay fees and those who do not reach the counters within the banks' working hours are advised to return the next day. This process has always resulted in students missing to sit for their tests, examinations or even lectures while they are queuing to make their payments. However, the 21st century came with a lot of challenges that only the use of computer can solve effectively. E-payment or automated payment of student's departmental fees in any school would boost the school management and therefore increase productivity thus:

1) Reducing the time staff in the bursary department spend cross checking and balancing cheque books
2) Reduced cash handling or operating a cashless economy makes the students and staff more secure.
3) Management can run the department without fear of financial loopholes.

4) Saves time for the students, making them have more time to invest on their studies.

Therefore, the payment of students' school fees in a particular school enhances the productivity of such school for both the management and students as well. Even as a computer-based system is used for such payment for easiest and fastest mode of operation as well as accurate security and good financial management; which some universities are now operating. Therefore, the paper provides an alternative method that enables secure online fees payment by students.

II. LITERATURE REVIEW

"Online Fees Payment System for Makerere University (MUKOFPS)", Author(s): Lwanga Newton, Justus Ashaba and Sekibira Rogers, in 2014 proposed the development of a web based system that allows secure online fees payment for Makerere University. The system will be used by students and their sponsors to pay all kinds of university fees online, and by university accounts offices to verify students" payments. The system captures financial information after payments are made.

"Design and Implementation of an Automated School Fees Payment System", Author(s): Melisa Santos, in 2019 carried out a study on a research work limited to school fees payment and clearance system for the student of a Girl's grammar secondary school in Awkunanaw, Enugu. The software developed was carried out using Visual Basic, MS Access, so as to manage both the database and at the same time make the software.

"Design and Implementation of Automated Student School Fees Payment", Author(s): Tony OmorotionmwanAirhiavbere, in 2020 conducted a study, restricted to College of Education, Ekiadolor would help the management and students of College of Education, Ekiadolorto have a better knowledge of operating on the method of automated student fees payment and how this can be effective through practical aspect of the device. Data used for the study were gotten from the case study and it focused on automated student's school fee payment.

"Automating School Fees Transactions in Nigerian Universities and Tertiary Institutions: A Systems Engineering and System Management Approach", Author(s): Clement Aladi, in 2019 proposed an automated fees transaction system to eliminate cash transactions for students of the Nigerian Institutions. The system was focused on providing an easy accounting and management of school financial database along with increased accuracy, security and transparency.

"Fee Management System", Author(s): Sangeetha G, in 2021 proposed a desktop application designed for an individual college to maintain student records and to manage the fee records like academic and bus fees of the students using a limited number of modules. This project was also aimed at generating due fees reports and to print fee receipts.

III. METHODOLOGY

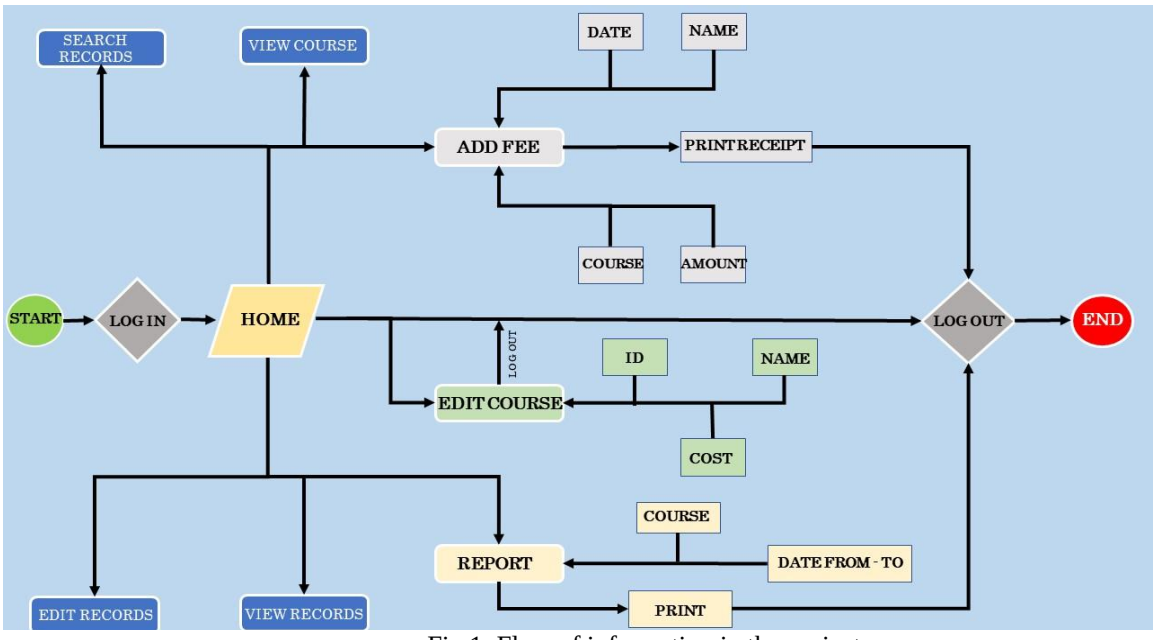

Fig.1: Flow of information in the project

First of all user has to sign up in the software then he will be able to log in. After logging in, the management can monitor the fee and course details of a student whenever they want to. At the home page management will get seven types of various operations which they can get access of (Search Records, View Records, Edit Records, View Course, Add Fee, Edit Course, Report). From these operations they can manage all the details as shown in Fig.1.

IV. WORKING OF THE PROJECT

Fig.2. Login Page

The 'Login page' where already registered management staff can login into the application if they have logged out or when signing in from a new device and view there college profile already created by the administrator of the institute for each student individually.

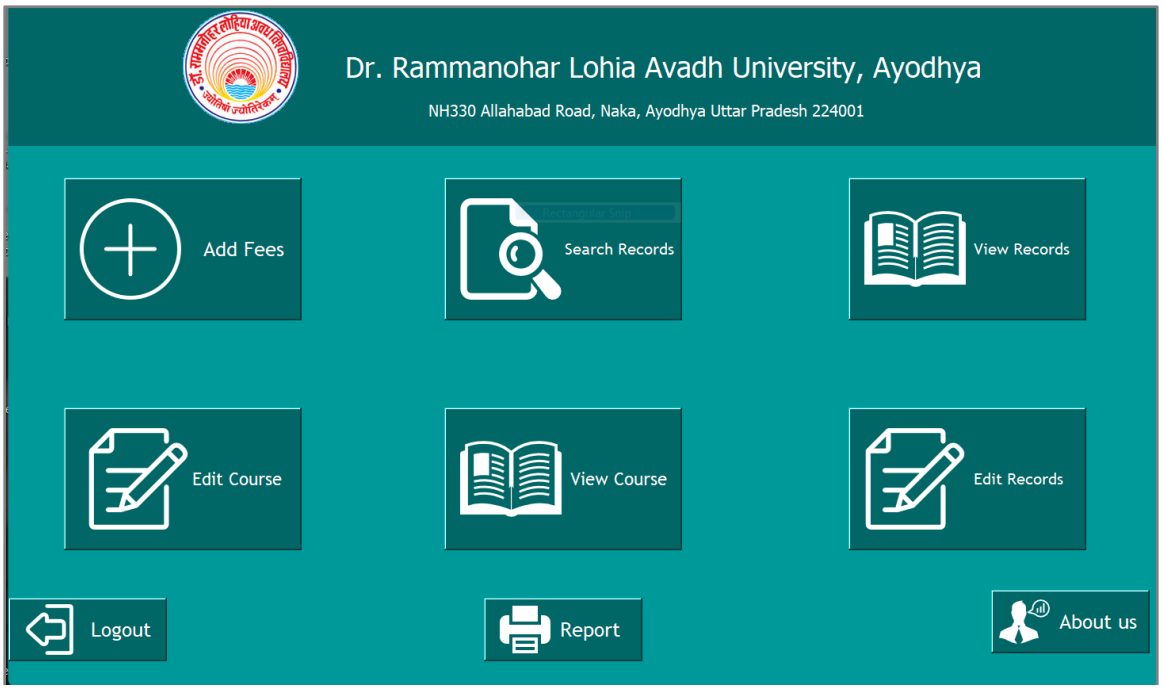

Fig.3: Home Page

After succesfully logging in, the admin will see an interface like Fig.3, where he will get the access of various fields related to a student's fee and course.

From 'Add Fees' option the admin can submit a student's fee with the help the details provided by the student and can also print the receipt.

From 'Search Records' the admin can easily view the student's records as well as he/she can search details of students by any of its identity details from the search bar.

From 'View Record' the admin can view the records all at once at the same page.

From 'Edit Course' the admin can add, update and delete courses according to the management needs.

From 'View Course' the admin can view the courses all at once at the same page.

The 'Edit Record' option will display all the records of a particular selected student and can also delete them.

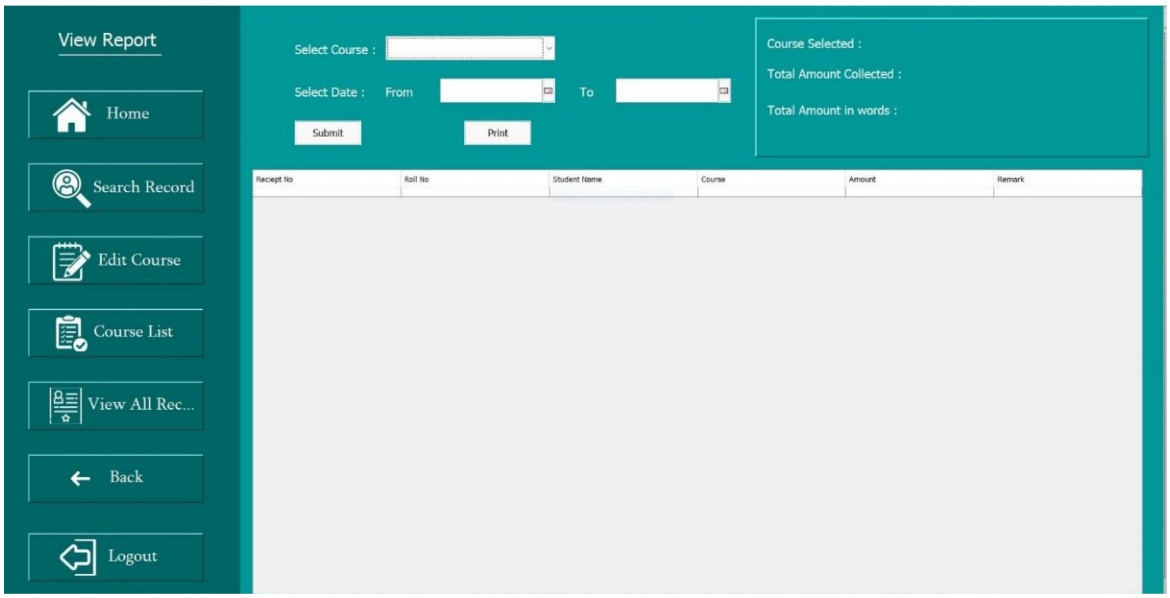

Fig.4. Report Window

In this window admin can generate the final report of a working financial year of the institute which includes the student's details opted for a particular course containing the total revenue generated for provided financial year from the fees. Admin can also take out a hard copy of the report by selecting the print button.

V. CONCLUSION

A conceptual framework for an online departmental fee management system is developed, that can address the difficulties encountered by students, parents and university management regarding fee payments and collections. The study was able to achieve the stated aim. The development of a new system using Java Derby, Java Swing and Apache Net Beans (IDE). The new system will assist students in paying their fees and issues them a receipt automatically. This new system gives a quick access to fees payment, data and modification of records if necessary.

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