College ERP System Using Digital Signature

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Abstract : College ERP system provides a simple interface for maintenance of different student, department, faculties, library and others information. All the colleges have number of departments and educational modules such as courses, student information, attendance system, results , notices etc. Managing all these departments and other modules manually is a very difficult and hard, ineffective and expensive task. So here we propose an ERP system for college with generation of digitally signed documents. Our college ERP system has all the information about the students,teachers, events, departments and other respected information. The system allows the admin to add students, faculties and any other events. Our system allows a faculty to enter or input students attendance into the database which can later be viewed by students and faculties. The students can view his/her attendance through a separate student login. The admin can upload the notices and other functionality. These systems have easy user interface and have powerful data mangement system which makes this system is very useful. Our system also provides online document generation which are authenticated by digital signature using MD5(Hashing Algorithm) which are signed by Admin and is automatically sent over registered email address of the student, Also dummy
payment gateway to just showcase online fee payment of exams. With this feature an add-on feature of uploading andsolving MCQ Test over an ERP and E-library where all the e-books, pdfs, pptx which will be available for students to read and download as well.

IndexTerms - *encryption, Hashing, Public Key encryption, Authentication, Privacy, data security, Digital signature, Signature schemes, Security.*

I. Introduction :

The 21st era is the world of technology and where every system is getting converted to digital system right from home security to booking a trip or banking sector, we realized that our college has the resources but are not used at it's peak level and there is no such digital system is installed in our college yet which is available anytime. The college works on following the traditional way of management producing large amount of hard copy data which increases the cost of stationary as well as use of a lot of paper. Maintaining all these paper's is difficult job and often we came across that the data is missing or loss of a document. Thus to get in hands with technology and use the available resources efficiently, to develop an ERP system for college that will solution to the problem in college

1. Every year college produces large amount of data that is stored on hard copy. A large space and work force is needed to sort the data and place the right paper in right file.

2. Many times the data is lost or misplaced. In order to search any file or document one need to search large mount of data which is time consuming.

3. To store all this data tons of paper is consumed by a college with lacks of investment in it.

4. Also to generate a document like LC or Bonafied Certificate or any other document it consumes a time-span of 3-4 days.

5. The attendance or students daily record is also stored on paper and is calculated manually at the end of semester.

6. Almost everything is done manually. So the risk of data loss is also high.

7. The resources that are available like Internet , LAN , WIFI , MIS etc are not used at its best.

8. Practice test are taken manually like MCQ test. Study Material is been circulated with the help of pen drives so chances are many of them won't get.

9. Notices, important News, Events are often missed out.

To overcome various issues we have proposed a system for our college so that it can help and increase the speed, efficiency of our system

II.Detailed Problem Statement :

To develop an Enterprise Resource Management application for college. This System will be working same as college but with modern technologies everything will be available digitally. This system will be available 24*7.This system will also produce digitally signed documents, data security, monitor every students as well as staffs data. The system will be cost efficient, reliable and work efficient. This system will have various modules which will be covered maximum in implementation. The various modules are:

1. Store data Electronically

2. Display News , Notification , Events , Gallery Central level as well as department level.

3. Three different type of users Admin, Staff, Students. According to type of users, different permissions will be given to user.

4. Daily Attendance monitor of staff and students.

5. Document Generation using Digital Signature.

6. Get admission

7. To make system available on wireless network i.e routers also.

8. Syllabus Tracking, sharing of study materials, Managing Test etc.

9. Training and placement cell
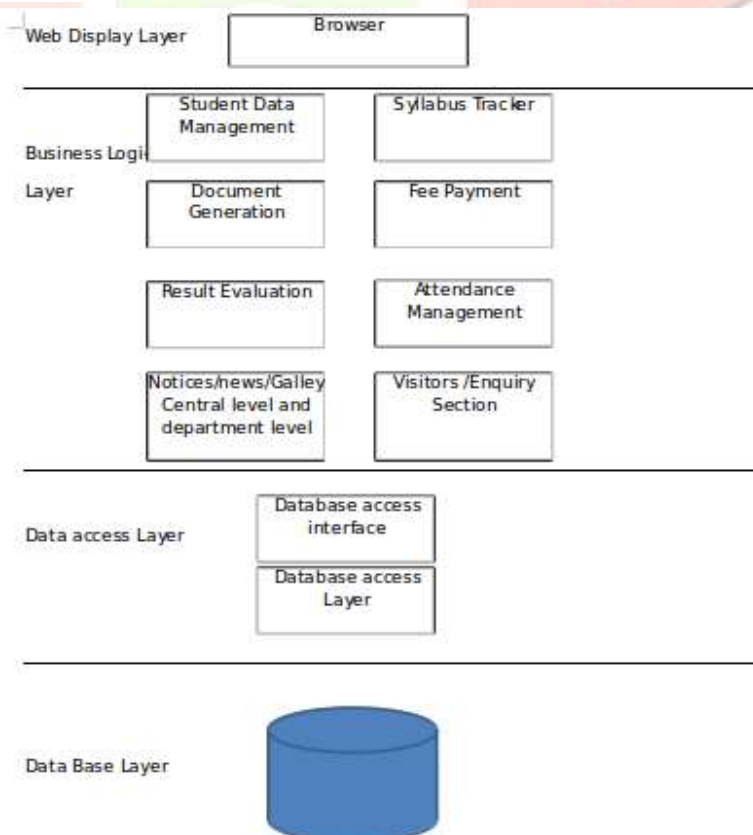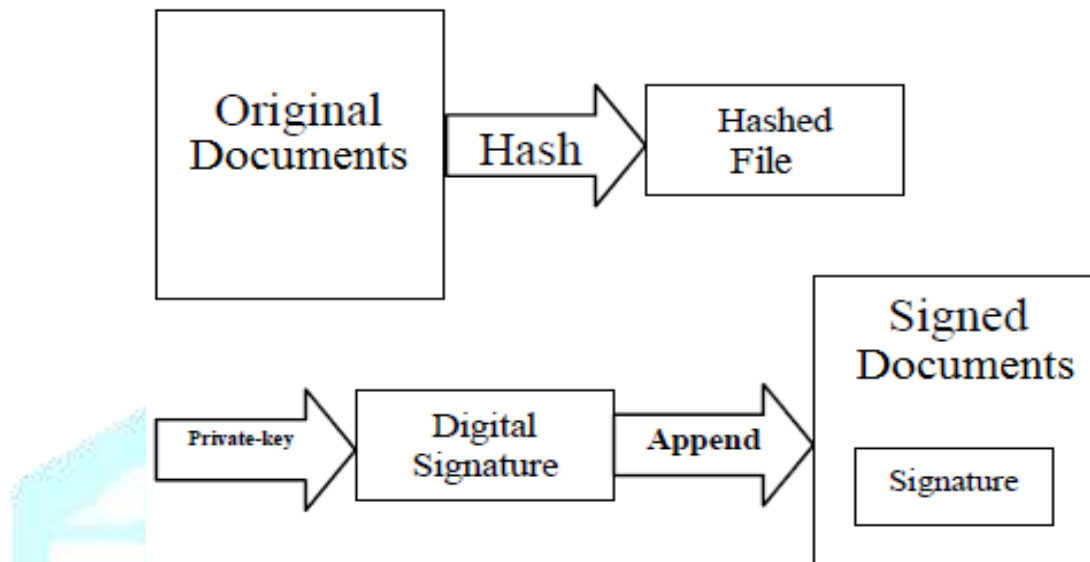
III. System Architecture

Fig III.A

A three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms. The user will be interacting with the system with web based application. The middle layer i.e business level logic is been implemented using php. at back end for storing data we are using MYSQL ie structured database.

IV. Digital Signature

Conclusion

We have developed and tried to create an web application/ERP system for the college which will be helpful for college to carry it's day to day routine more efficiently. We have covered many features like attendance, online fee payment,notices, registration, document generation using digital signature,staff leave application, examination form etc.

VI. Future Scope

Many features can be implemented such as:
1. Online MCQ Test.
2. Result analysis.
3. PPT sharing and also sharing of study material from staff.
4. Syllabus Tracking.
5. TimeTable genrator.

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