Virtual Classroom System

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***Abstract*— This paper entitled Virtual Classroom System is mainly for all educational colleges such as engineering colleges, medical colleges, pharmacy colleges and others where there is connection between faculty, student and courses. In colleges, sometimes there may be loose connection between faculty, student and courses for some students due to some reason such as missing lectures, doing part time job along with study, distance learning courses; for that, this project help them in an efficient way.**

In effect, we maintain an updated database of all details like all courses, all faculty information, all student information, all courses information, all exam information such as view previous exam question paper, view exam result. Its purpose is to automate and centralise whole system of department. We are attempting to improve our existing system that runs generally by pen and paper now a days.

It is basically designed for student who are unable to attend the class due to some reason. For that, it will help them to view lecture, view exam assignment at any time. we try to offer a range of facilities in this software that will maintain all student, faculty and course records in a much more efficient way with much less hassle.

***Keywords*— VCS, NR,UI**

I. INTRODUCTION

Today a number of website exist in world wide web online database which having very excellent study materials and information and they are very useful for any student related to their field study. Let us take an example. Those student who want to do MS from USA, www.usnews.com is a very good website for them. This website provide college information and related thing upon subscription taken. Now suppose I have some question which is very confusing in selecting colleges then what will I do.? I will go to other website to get information. In that time this subscription doesn't work. This type of problem is due to lack of interactive response and face to face communication.

In this project, we have designed a software which will serve all engineering colleges' students and faculty member. Some of student are unable to attend class due to some reason as health problem, attending conference to somewhere. Some of student are unable to study due to financial problem. They do distance learning problem. For that, they regularly view lectures, view question paper, view examination schedule. When we talk about regular students that this project will help them in checking his attendance, viewing faculty achievements, chatting with some other student, viewing news and notices about their curriculum.

This Virtual Classroom System is available anytime without any restriction that means we can access 24 hours a day. It engages students in a rich learning experience. Data transfer rate optimization matches user connection speeds.it is real time collaboration between a faculty and the student. It away faculties in awesome conveniences. We can share documents, application, streaming videos and many more.

Developing a virtual classroom system (VCS) to promote a greater count of students to splurge into the field of Education. It integrates the benefits of a physical classroom with the convenience of a 'no-physical-bar' virtual learning environment, minus the commuting hazards and expenses. It will usher in the immense flexibility and sophistication in the existing learning platform structures, with the perfect blend of synchronous and asynchronous interaction. It provides a means of collaborative learning for the students.

In the recent era of globalization, technological advancement has increased dramatically in every sphere including mainstream education. Profound investments in technology in this decade have given rise to a worldwide explosion of information. Many educational institutions have been mystified by this information chaos. They are driven by the goal to use newly found access to global data communication. This step will increase enrolment and will award a vast range of degrees through massive investments in distance education programmes. There has been much talk among educators that these acts begin to modify the students' worth to the academic world, as the students begin to assume both the tangible and intangible characteristics associated with those of a "Customer" as opposed to the characteristics of a student. Marketing strategies abound that beseech the "students-customer" to take advantage of "fast, universal access", "earn a degree in a short period of time", and other creative approaches that guarantee satisfaction and quick delivery of the degree-of-choice. Moreover, in the fast growing

competition in the job market, there have been increasing demands for specialists, professionals over population, increasing awareness as well as demand for higher education, shortage of qualified teachers and infrastructure facility. Virtual classroom has taken a lead role in the teaching-learning process. Generically, the virtual classroom is a teaching and learning environment located within a computer mediated communication system. It consists of asset of group communication and work "spaces" and facilities that are constructed in software. Virtual Class Room System allows you to incorporate dynamic, interactive training into your learning landscape and manage it across the enterprise. This reduce training costs while increasing impact, scope, and frequency of training to keep pace with your business-using only a Web browser. Ensure customers, partners, and employees are always up-to-date on new product releases, corporate initiatives, and soft skills. Train the widest audience possible with anytime, anywhere access to recorded training sessions.

II. LITERATURE SURVEY

The present system is the mannual one. Hence all the information about the Student,courses and faculty details maintained in the file.For Faculty,they have different-different files for different purpose, Like seprate file for student details, attendence and seprate file for report etc. For Student,they have different-different notebooks for different subjects, sometimes they forget something during lecture.

In the present system all work is done on paper. All student who attend physical classroom, write down the notes so time goes in vain due to noting down, drawing figures and in etc. For Faculty, they write whole session attendance in register and at the end of the session the reports are generated. We are not interested in generating report in the middle of the session or as per the requirement because it takes more time in calculation. At the end of session the students who don't have 75% attendance get a notice so the thing is that we can save our time by using Virtual Classroom System because all the things has been integrated in mean of faculty work, student activity and so on. If we want to do updating in records by pen and paper then it takes a very long boring time but in this system, we can update the record by selecting the relevant information such as faculty information, student information, adding course, exam related information, any news from college or any notices from department.

III. DISADVANTAGES OF EXISTING SYSTEM

1. **Not User Friendly:** The existing system is not user friendly because the retrieval of is very slow and data is not maintained efficiently. User in term administrator, faculty and student.

2. **Not Useful For E Learning Student**: those student who want to continue their study after graduation along with job can't get any benefit because they have to attend the class regularly.

3. **Difficulty in report generating:** We require more calculations to generate the report so it is generated at the end of the session. And the student not get a single chance to improve their attendance

4. **Manual control**: All calculations to generate report are done manually so there is greater chance of errors.

5. **Lots of paperwork**: Existing system requires lot of paper work. Loss of even a single register/record led to difficult situation because all the papers are needed to generate the reports.

6. **Time consuming:** Every work is done manually so time is consumed.

IV. CHARACTERISTICS OF PROPOSED SYSTEM

Following characteristics can be summarized:

1. **User Friendly: -** The proposed system is user friendly because the retrieval and storing of data is fast and data is maintained efficiently. Moreover the graphical user interface is provided in the proposed system, which provides user to deal with the system very easily.

2. **Very Useful for E learning Student:** those student who are very poor in economic or those who work in daytime can learn their course through internet from anywhere. There is no need to present physically that's why name of the paper is virtual classroom system and there is no restriction (NR).

3. **Reports are easily generated:** Reports can be easily generated in the proposed system so user can generate the report as per the requirement (monthly) or in the middle of the session. User

can give the notice to the students so he/she become regular.

4. **Very less paper work:** The proposed system requires very less paper work. All the data is feted into the computer immediately and reports can be generated through computers. Moreover work becomes very easy because there is no need to keep data on papers.

5. **Computer operator control**: There is no chance of errors. Moreover storing and retrieving of information is easy.

V. FUNCTIONAL REQUIREMENTS

- The basic services that the Virtual Classroom System includes
    1. Entry of Faculty Achievements.
    2. Entry of New Student to the Dept.
    3. Entry of student courses and assignment.
    4. Entry of exam question and exam result.
    5. Provide individual and Class-wise reports.
    6. Update the student profile depending on Attendance & Exam Status.
    7. Chat room for newsletter and email.
    8. Workload.
    9. The system will provide for password protected administrator access to add, delete & modify the basic services offered by the system.

VI. NONFUNCTIONAL REQUIREMENTS

- **Performance requirements**

  The proposed system that we are going to develop will be used as the Chief performance system for providing help to the department in managing the whole database of the student studying in the department. Therefore, it is expected that the database would perform functionally all the requirements that are specified.
    1. The system should be easy to handle.
    2. System should give expected performance results.
    3. The response time should be small.

- **Security Requirements**

  1. We are going to develop a secured database. There are different categories of users namely Administrator, Students, Restricted users who will be viewing either all or some specific information from the database.

  2. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, append etc. All other users only have the rights to retrieve the information about database.

- **Safety Requirements**

  The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup

- **Software Quality Attributes**

    1. The application is easy to interact and communicate with user.
    2. This application provides better user interface for ease of working.

VII. EXTERNAL INTERFACE REQUIREMENTS

Following are the external interface requirements:

A. User Interface :

The application that will be developing will have a user friendly and menu based interface.

Following screens will be provided:

- A login screen for entering the username and password, so that the authorized user can have an access without any problems.
- There will be a screen which will be displaying the major tasks that the system will be performing i.e. view faculty achievements, view student course, view assignments, view exam schedule, view exam result, chat room details.
- All the major tasks mentioned above will have their separate forms and will perform the desired actions.

B. Software Interface :

- Operating System : Windows XP or Higher Version
- User Interface : Html/CSS
- Client Side Scripting : Java Script
- Programming Language : Java
- Web Application : Jdbc, Servlet and Jsp
- IDE : My Eclipse 8.0
- Database: Oracle 10g
- Server Deployment : tomcat 5.x

C. Hardware Interface :

- Intel Pentium IV or Higher processor
- 1.80 GHz
- 1 GB of RAM

VIII. SYSTEM ARCHITECTURE

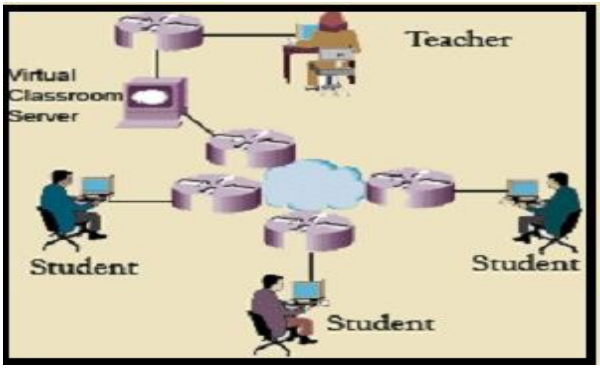

Fig. 8.1 System Architecture of Virtual Classroom System

Above figure explain about virtual classroom system where student and teacher are connected from virtual classroom server. All the above explanation are clear from this system architecture.

Fig. 8.2 Distance learning Course through VCS

Above figure explain the e learning and communication between a teacher and students.

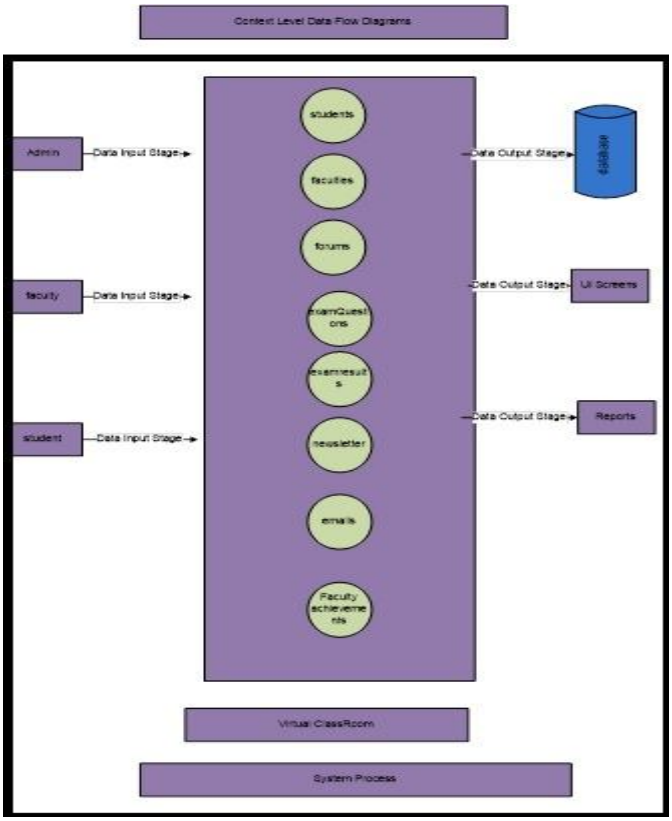

Fig. 8.3 Context Level (CL) Data Flow Diagram

Above figure is context level data flow diagram for Virtual classroom system in which admin, faculty and student are data input stage whereas database, UI screen and Reports are output stage.in Virtual classroom server, all the information of student, faculties, forum, exam question, exam result, newsletter, emails and faculty achievements exists which is used for system process.

IX. SOME SNAPSHOTS OF THIS PROJECT

A. Login Page

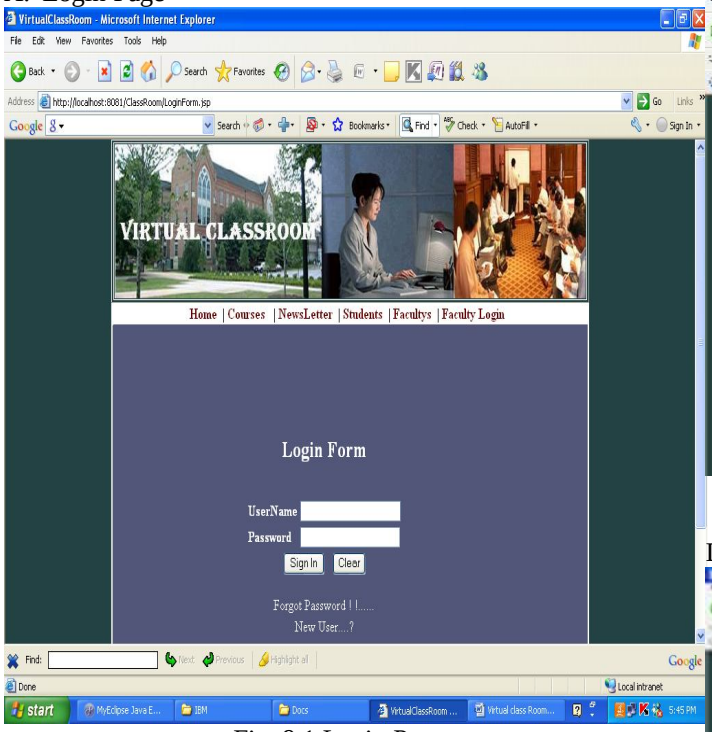

Fig. 9.1 Login Page

B. Administrator Page

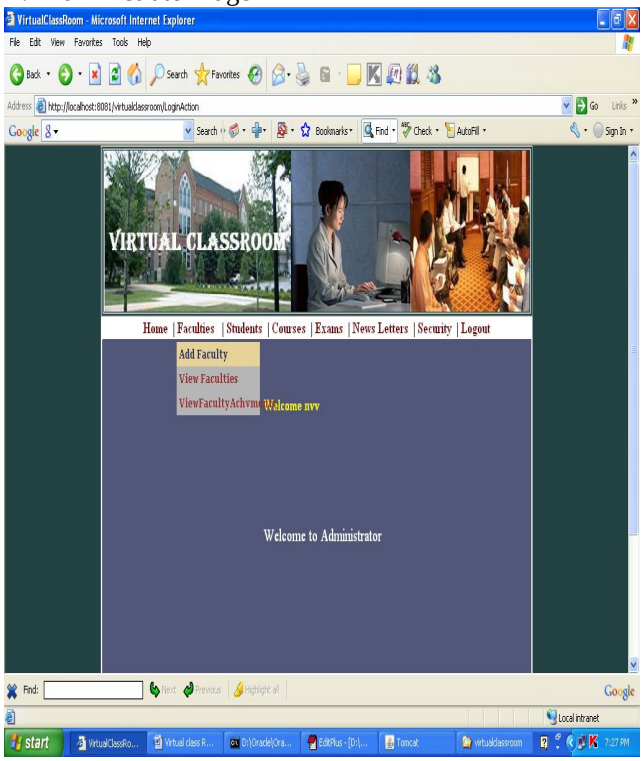

Fig. 9.2 Administrator Page and Faculties Menu

C. Student Menu

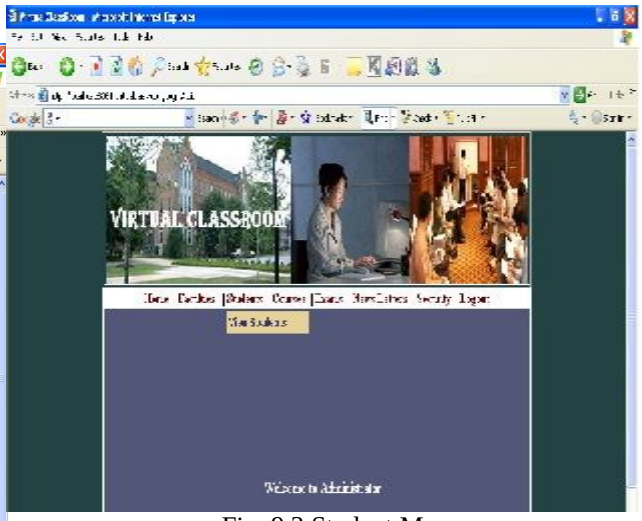

Fig. 9.3 Student Menu

D. Courses Menu

Fig. 9.4 courses Menu

X. ADVANTAGES OF PROPOSED SYSTEM

1. This project can be highly beneficial for students for students who want to continue their study from e learning programmes.
2. Regular student can check their attendance so that they get an alert for future class.
3. The ease of operation makes any user to carry out the required operation.
4. Time saving process.
5. Reduces the work load of the user.
6. Single administrator is enough to carry out all the tasks.
7. Data is secured.

XI. APPLICATIONS

1. This Project will be used for Our Institute.

2. After some modifications, other colleges can use this project to interact with faculty, student and courses.

XII. FUTURE ENHANCEMENTS

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system.
- Security can be improved using emerging technologies.
- Sub admin module can be added.
- An in-built web browser can be added.

XIII. CONCLUSION

Hence In this paper, we have done:

- ✓ Reduction of entry work.
- ✓ Easy retrieval of information
- ✓ Reduced errors due to human intervention
- ✓ User friendly screens to enter the data
- ✓ Portable and flexible for further enhance.
- ✓ Web enabled.

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