

Create Teaching and Course Management Easier By Providing a Tools for Teachers

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ABSTRACT

These days, technology and the internet are essential to living a modern life. The technology known as the internet makes it possible for multiple computers to connect to one another at the same time via a network. The internet provides various benefits for students since it makes it easier for them to access the information they need. The internet can be useful for online education. The web-based application we are creating is called the "Academic Course Management System". To better assist educators and students, we have developed a course management system that leverages the power of technology. Course modules, assignments, circulars, and many more learning-enhancing elements are offered by this program. Using this tool, teachers give work to pupils, who then use their user name and password to access it once completed. Students can turn in their assignments through the application. To assign grades to pupils for their homework, teachers might also use a gradebook. They simplify teaching and course management by providing teachers with a framework and a toolkit. On the other hand, it could also include learning materials, assignments, and class activities, depending on the teaching-related elements. Over time, the Academic Course Management System (ACMS) has become an essential part of higher education.

KEYWORDS: Academic Course Management System, Technology, Application, Assignment, Online Learning, Students etc.

INTRODUCTION:

Universities have started using a variety of online learning tactics, such as learning management systems, as a result of the expansion of online learning in recent years (2013). These strategies enable students to learn independently and build problem-solving abilities. It has been noted that due to the COVID-19 outbreak, professors and students were forced to abruptly switch to an online teaching technique, which presented additional difficulties for both parties, such as the need to share notes, assignments, and tests. After the COVID-19 breakout, the world is shifting online in order to give students and teachers a suitable platform. We have developed a web-based application which integrates all the modules and functionalities into single system that can be handled by admin and access by the students and teachers. In this application, the system offers the possibility speeding up and simplifying the learning process.

ACMS is a web-based application which consist set of tools that enables the teachers to create online course content and post it on the Web. This application will save time for both teachers and students and provide opportunity to the students to get advantages of personalized learning. ACMS makes the process of teaching and learning easy and seamless for both teachers and students. This project helps the students to organize notes on their account for easy access.

As a new tool and innovation, the academic course management system (ACMS) is increasingly being used to improve the flexibility, efficiency, and quality of higher education. This is a web-based platform which integrates all the modules and functionalities into a single system that can be handled by the administrative head (admin) and accessed by students and teachers. Online course management software are used in colleges and universities for helping students and instructors to get in touch from any location. The main objective of this project is to provide circular, course module and assignment through this software. Faculty will assign grade to the students for their performance which is useful for the improvement of students performance. Considering each and every problem in the existing system this application contains 3 modules—

- 1) Admin
- 2) Teachers
- 3) Students

This system has been developed considering every single quality factor. Due to this reason the system or application is extremely secure and unauthorized person cannot access the system.

LITERATURE SURVEY:

The administration of campus activities at colleges may be done using a variety of apps. Each app offers unique features, benefits, and drawbacks. These apps were created taking into account the specifications of that specific institute. These apps essentially have just one purpose, and we require numerous apps for various institutional operations.

[1] The Internet has grown at an extraordinary rate over the past two decades, and this has caused the educational environment to change as a result. The adoption of a wide range of web-based tools has given rise to the global trend of e-learning in education. Higher education is a common area where ACMSs are found, and their functions have developed from course authoring tools to enterprise-level systems (Finkelstein, 2003). ACMSs are being used more often as a way to improve the integrity, effectiveness, and adaptability of teaching and learning in higher education. The creation of a learning management system (LMS) or course management system (ACMS) may be seen as both the outcome and the spark of this e-learning movement. When used as a software package, ACMS offers "webbased tools, services, and resources to support teaching and learning processes for both online and blended delivery" (McConachie, Danaher, Luck, & Jones, 2005). E-learning is becoming increasingly more prevalent and accessible as a result of the expanding accessibility of wireless (Choi et al., 2007) and mobile technologies (Petrova, 2007).

[2] Unfortunately, a lot of e-learning research has neglected the perspectives of students in favor of practitioner viewpoints or course designs (Sharpe, Benfield, Lessner & DeCicco, 2005). The experiences of the students are crucial to our study. We look into how ACMS has been received by students in several faculties of a comprehensive university in Hong Kong. Our investigation is guided by the specific study questions: How do students interact with ACMS and other online tools? What usage patterns exist for ACMS? What do students think about ACMS assistance and tools? We specifically looked at potential academic discrepancies across student levels. We anticipate that this research will help in understanding how students use content management systems and may help informing decisions about how to successfully integrate ACMS in higher education.

[3] With its expanded choices for material distribution, knowledge evaluation, hands-on activities, and user engagement, the ACMS has established itself as a crucial link between academics and learners. The ACMS is an essential resource for any university because of these features. But, academics must make a commitment to embracing the ACMS model in order for higher education providers to succeed in the cutthroat online environment. The course management system has become an integral part of higher education and, over the last two decades, universities have adopted digital ACMS platforms to deliver online education (Dobre, 2015; Walker et al., 2016).

[4] When each institution opted to build and teach online courses during the covid19 epidemic, several areas of quality remained directly under the authority of the academic. The professor, for example, was in charge of the online course material and how it was delivered in terms of communication, discipline, staff-student engagement, and mentorship. On-campus education has always been decided by academics, and it has been stated that online education is merely another form of classroom. We suggest that this decision-making power should remain with the academic during the transition to teaching fully online courses during the lockdown. Academics are uniquely positioned in the nexus of content expertise and the dynamic, progressive interaction between professional knowledge and digital teaching technologies.

[5] For controlling college campus events, many software are available. Each app has its own set of features, benefits, and drawbacks. These apps are created with the requirements of that specific university in mind. These applications essentially serve a single goal, and we require multiple apps for diverse institutional operations. We suggest that academics are

central to course development, and further suggest that they should determine alternative means of instruction and assessment. As a result, an academic's involvement with the LMS, as well as their desire to collaborate with e-learning professionals, is critical to their university's strategic development. This was underlined in the 2020 lockdown.

[6] During the covid-19 epidemic, students and instructors were forced to make a fast transition towards online teaching technique, which resulted in new issues for both teachers and students, such as sharing notes, assignments, and tests. With the breakout of Covid-19, the globe is shifting towards an online environment in order to create a suitable platform for students and instructors. We created a web-based application that combines all of the modules and features into a single system that administrators can manage and students and teachers can use. It is a web-based software systems that support teaching and learning in face to face as well as online environments. Faculty members directly manage their course content in course management systems.

PROJECT DESCRIPTION:

This application is divided into 3 modules which are described below:

➤ **Admin:**

The following activities are performed by admin,

- Login
- Add students
- Edit Students Details
- Delete Student Details
- Add course details
- View Student Exam report
- View Feedback details

➤ **Faculty Members:**

The following activities are performed by instructor,

- Login
- Upload Assignment
- Mark Grade
- Upload Marks

➤ **Students:**

The following activities are performed by student,

- Register details
- Login
- View Content for Learning
- View Assignment
- Attend Assignment
- Student Enter Feedback



EXISTING SYSTEM:

Course management systems are web-based software systems that support teaching and learning in face to face as well as online environments.

An area of faculty posting of class materials.

An area of student posting the assignment view their grades.

A gradebook where faculty can record grades for their performances and each student can view his or her grades.

ADVANTAGES:

- Enable E-Learning
- 24/7 Available
- Automation of Tasks
- Regular Updates

DISADVANTAGES:

- Time consuming process.
- Required high speed connectivity.
- Lack of practical knowledge

SECURITY:

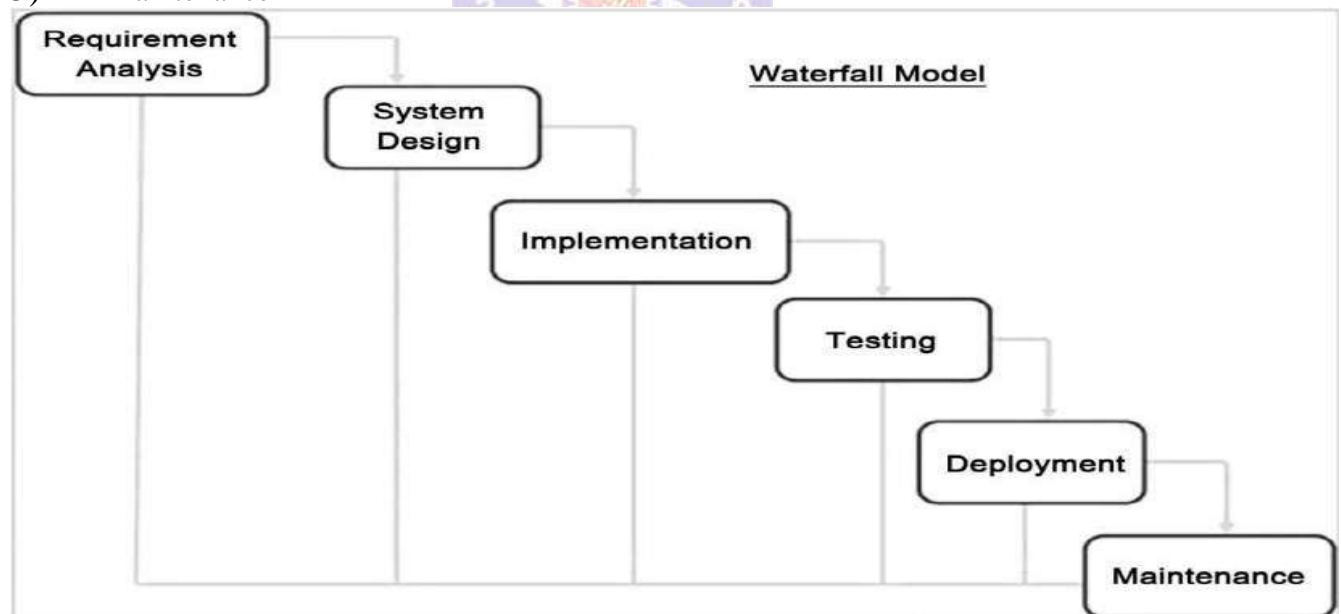
The designing and implementation of this application by considering each and every factor in which security is one of the main feature of the application. The software would be accessed by the admin and authorized user with their user id and password. Unauthorized person cannot access this software. Only admin can add new accounts for users.

METHODOLOGY:

In this methodology, waterfall method is used. The waterfall model is a noniterative, linear, sequential design method for software development. Throughout the phases of conception, initiation, analysis, design, construction, testing, deployment, and maintenance, progress moves in one direction downwards—much like a waterfall. Because it permits departmentalization and managerial control, it will be used.

The sequential phases in Waterfall model are:

- 1) Requirement Gathering and analysis
- 2) System Design
- 3) Implementation Integration and Testing
- 4) Deployment of system
- 5) Maintenance



How Waterfall Method Used?

REQUIREMENT ANALYSIS:

According to requirement of this project-

The system allows only the admin to create and manage courses and also allowed to create account for students and faculty members.

The system allows only the teachers or faculty members to post their course content, assignment, manage scores and assign grade to students for their work. The system allows only the students to upload assignment work and view grades for their performance.

SYSTEM DESIGN:

It will be defined in this context how the new system's architecture, parts, modules, interfaces, and data will work together. In the first part user login into the existing system with their enrolled username and password. After successful login attempt, users can view and access their courses and assignments and many more.

IMPLEMENTATION:

Academic Course Management System in java is implemented using JFrame which inherit java.awt.Frame class. JFrame works like main window where components like JLabels, JTextfield, Jbuttons etc are added to create Graphical User Interface (GUI).

TESTING:

This is the process where we can evaluate our system after implementation whether it satisfies the specified requirement or not. After successfully implementation of our Academic Course Management System project we can check it is able to manage our course and assignment or not.

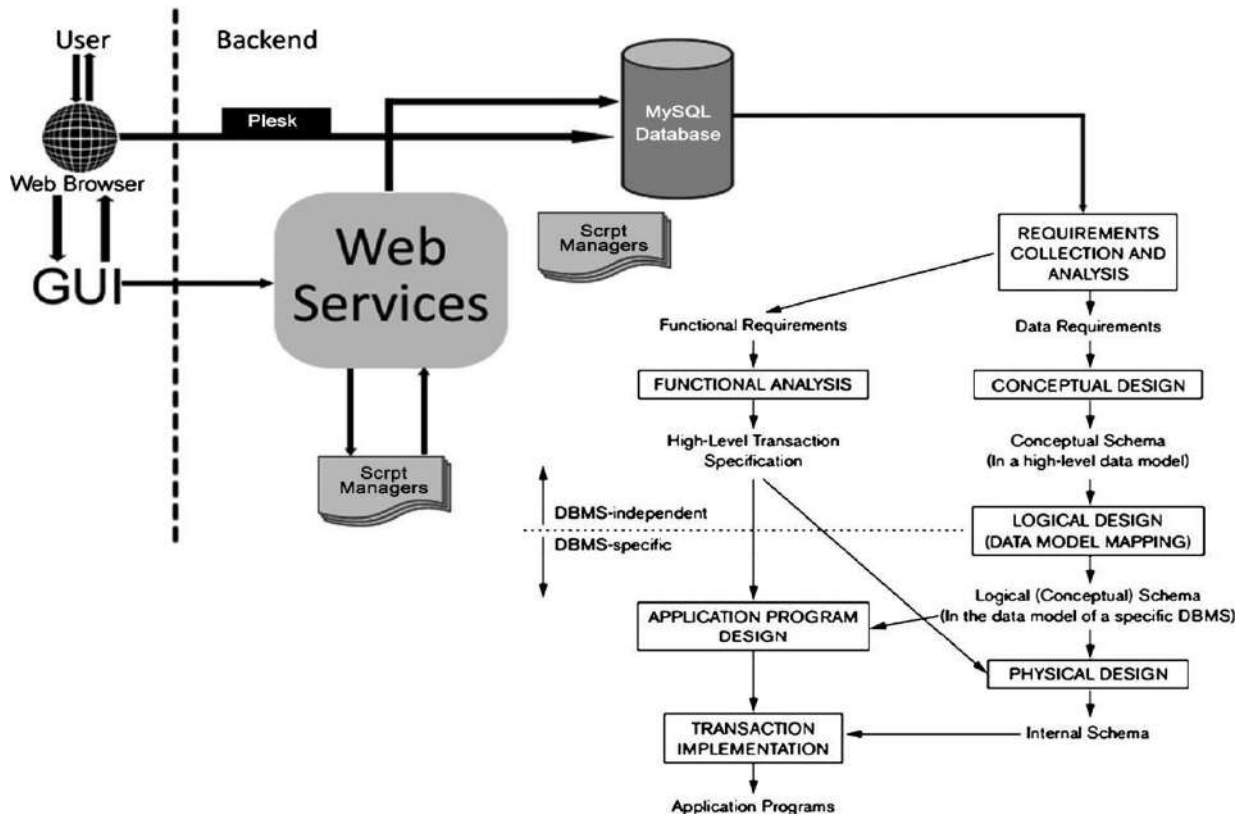
DEPLOYMENT:

After testing the system it works properly according to our requirements, so this software is ready to launch or use like facilitating a certain URL on a server.

MAINTAINANCE:

In this process, after launching the software people were used this system and give their feedback. According to their feedback, it helps the team quickly identify the errors and try to solve them as soon as possible which improves the quality of our system.

HIGH LEVEL MODEL OF THE PROJECT:



The primary objective of high level models is to facilitate understanding, analysis, communication, and decision-making. Visual diagrams, mathematical formulas, quantitative data, and graphs, for instance, are examples of complementary representations and formats found in the models.

ALGORITHM:

An algorithm is a step-by-step process that specifies a set of instructions that must be followed in a particular order to achieve the desired outcome. Since algorithms are typically developed without regard to their underlying languages, they can be implemented in more than one programming language.

home page, where the user
enquires about the Userna
withException;
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```
package javastdapp;  
import java.security.NoSuchAlgorithmException;  
import java.sql.Connection; import
```

```

java.sql.PreparedStatement; import
java.sql.ResultSet; import java.sql.SQLException;
import java.util.logging.Level; import
java.util.logging.Logger; import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class LoginForm extends javax.swing.JFrame
{
public LoginForm()
{
    initComponents();
lbl_U.setVisible(false);
lbl_P.setVisible(false);
        //show login form in center screen
        this.setLocationRelativeTo(null);
    }
private void button_loginPropertyChange(java.beans.PropertyChangeEvent e)
{
}
private void button_cancelPropertyChange(java.beans.PropertyChangeEvent e)
{
}
private void button_loginActionPerformed(java.awt.event.ActionEvent e)
{
    lbl_U.setVisible(false);    lbl_P.setVisible(false);
    if(jTextField_username.getText().equals(""))

```

```
{  
    lbl_U.setVisible(true);  
}  
if(String.valueOf(jPasswordField_password.getPassword()).equals(""))  
{  
    lbl_P.setVisible(true);  
}.....
```

Software Technology Used:

JAVA:

Java is a high-level, class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible.

Java is a widely used object-oriented programming language and software platform that runs on billions of devices, including notebook computers, mobile devices, gaming consoles, medical devices and many others.

How It Is Used?

Academic Course Management System is fully built in java. In the portion of front end of the project we used Java Swing which is the part of Java Foundation Classes (JFC). It is built on the top of AWT (Abstract Window Toolkit) API and entirely written in java. The javax.swing package provide classes such as JButton, JTextfield, JCheckbox etc. With the help of Java Swing we are able to develop Graphical User Interface (GUI) or web-based applications in java. The front end is the part of the website where user can see and interact with the graphical user interface and the command lines including the design, navigation, menu, text etc. The visual aspect of website such as login, registration, etc. are seen and experienced by the user is Front end. On the other hand, In the Back end portion of the project, it stores and arrange all the data in a manner which is entered by the user in the front end is managed by the Back end. The parts and characteristics developed by backend designers are indirectly accessed by users through a frontend application. Activities, like writing APIs, creating libraries, and working with system components without user interfaces or even systems of scientific programming, are also included in the Back end.



MySQL:

MySQL is an open-source relational database management system. Its name is a combination of "My", the name of co-founder Michael Widenius's daughter My, and "SQL", the acronym for Structured Query Language.

A relational database organizes data into one or more data tables in which data may be related to each other; these relations help structure the data.

How It Is Connected?

The MySQL database and the Java application must be connected using the Java Database Connectivity (JDBC) and it is used as medium between the database and application. JDBC provide driver class for the MySQL database is com.mysql.jdbc.driver. After that, connection URL with the driver class for database through jdbc:mysql://localhost:3306/stdmgdb where jdbc is the API, mysql is the database, localhost is the server name on which mysql is running, we may also use IP address, 3306 is the port number and stdmgdb is the database name. After following this process, the username for mysql database is root and password is also root.

CONCLUSION:

The Academic Course Management System (ACMS) project is completely built in java. It has fully featured Graphical User Interface (GUI) with all the functionalities. Online education or e-learning is one of the most quick growing field on the internet. Online course management software are used in colleges and universities for helping students and instructors to get in touch from any location. It is an extremely useful tool to handle large number of small in a multidisciplinary approach to education. For every education or course, there should be a lot of interaction between students so that they can submit assignments and home works and get feedback for their work. It plays the main role to digitize the introductory operations of the institute and help them produce an optimal management system. Based on feedback we have concluded that our Academic Course Management System can be made more efficient if it is combined together with online meeting software such as Zoom, Google Meet, Microsoft Teams etc. to fill the gap in creating a collaborative classroom.

Future Scope of the Project:

Online Examination

Attendance

Online Classes

REFERENCES:

1. Barbaux, M.-T. (2006) From Lifelong Learning to M-Learning. The 13th International Conference ALT-C 2006: The Next Generation, Edinburgh, Scotland, UK.
2. Alexander, S. (2001). E-learning developments and experiences. Education + Training, 43(4/5), 240-248.
3. Vani Kalloo, H. and Permanand, M. (2012) Correlating Questionnaire Data with Actual Usage Data in a Mobile Learning Study for High School Mathematics, Elec-tronic. Journal of e-Learning, 10, 76-89.
4. Bransford, J.D., Brown, A.L. & Cocking, R.R. (Eds.) (2000). How People Learn: Brain, Mind, Experience, and School, Washington, D.C.: National Academy Press
5. Allen, I. E., Seaman, J. (2003). Sizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002 and 2003. Sloan Consortium
6. Wentling, et al. (2000) E-Learning—A Review of Literature. Knowledge and Learning Systems Group NCSA 9.1-73.
7. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340.
8. Morgan, G. (2003). Faculty use of course management systems, Vol. 2, Research Study from the EDUCAUSE Centre for Applied Research (ECAR), Boulder, Colorado: EDUCAUSE.
9. Petrova, K. (2007). Mobile learning as a mobile business application. International Journal of Innovation and Learning, 4(1), 1-13.
10. Zoraini, W.A, Chng, L.P. and Norziati, M. (2009) A Study on Learner Readiness for Mobile Learning at Open University Malaysia. IADIS International Conference Mobile Learning, Barcelona, 26-28 February 2009, 151-157.
11. Hawkins, B.L. and Rudy, J.A. (2007) Educause Core Data Service: Fiscal Year 2006 SummaryReport.Educause,Boulder,CO.http://media.clemson.edu/ccit/assessment/Core_Data_Survey_Summary_Report_2006.pdf
12. Lane, L. M. (2008). Toolbox or trap?: Course Management Systems and pedagogy. Educause Quarterly2: 4-6.
13. Watson, W. R. Watson, S. L. (2007). What are Learning Management Systems, what are they not, and what should they become? TechTrends51(2): 28-34
14. Rosato, J.C., et al. (2000) The Ethics of Clinical Trials: A Child's View. <https://www.Journals.sagepub.com>

15. Meera Academy, available at <<<https://meeraacademy.com/use-case-diagram-for-studentinformation-system/>>>
16. Sanjana Taya and Shaveta Gupta, “Comparative Analysis of Software Development Life Cycle Models,” IJCST Vol. 2
17. Dublin, L. (2003) If You Only Look under the Street Lamps... Or Nine E-Learning Myths. *The E-Learning Developers Journal*. <http://www.eLearningguild.com>
18. European Commission (2000) Communication from the Commission: E-learning Designing “Tejas at Niit” Tomorrow’s Education. European Commission, Brussels
19. Allen, I.E. and Seaman, J. (2003) Sizing the Opportunity; the Quality and Extent of Online Education in the United States, 2002 and 2003. The Sloan Consortium, Wel-lesley.
20. Bureau of Labor Statistics, (2013). Nonfatal occupational injuries and illnesses requiring days away from work, 2012.

