

University Management System

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ABSTRACT

UNIVERSITY MANAGEMENT SYSTEM (UMS) deals with the maintenance of University, college, faculty, student information within the university. UMS has a relational database, which is used to store the college, faculty, student, courses and information of a college.

INTRODUCTION

A University Management System (UMS) is a comprehensive software solution designed to automate the operations and management of a university. The system aims to integrate all the departments of the university, including student admission, course management, faculty management, and financial management, among others.

The system provides a unified platform for managing all university activities, reducing the workload for administrative staff and faculty members. The UMS offers a range of benefits to the academic community, including improved communication and collaboration, increased transparency and accountability, enhanced data management, and streamlined workflows. In this article, we will discuss the various features and benefits of a University Management System.

LITERATURE SURVEY

1. Study by Rahman et al. (2018) on the adoption of UMS in Malaysian universities identified challenges such as lack of support from senior management, lack of awareness among users, and lack of standardization.
2. A study by Singh and Bhatnagar (2017) identified several challenges, such as lack of technical expertise, resistance to change, and insufficient funding.
3. A study conducted by Khandakar et al. (2020) on the implementation of UMS in Bangladeshi universities found that UMS helped improve transparency and accountability, enabling universities to monitor and evaluate their performance more effectively.
4. A study by Adnan et al. (2017) found that UMS can facilitate communication between students, faculty members, and staff, resulting in better coordination and more effective decision-making. The study also found that UMS could improve collaboration between departments, enabling more efficient use of resources.

PROBLEM STATEMENT

Academic institutions are facing numerous challenges in managing their operations and resources. The current manual administrative processes are inefficient, time-consuming, and prone to errors. The lack of transparency in these processes makes it difficult for institutions to track student progress, manage resources, and allocate funds effectively. In addition, the traditional systems for managing student data, faculty information, and financial resources are inadequate, leading to data loss, redundancy, and inconsistency.

An existing UMS system is likely to be a comprehensive software platform that helps universities manage a wide range of academic and administrative functions. The system is designed to be user-friendly and accessible to students, faculty, and administrative staff. An existing UMS system typically includes modules for student enrollment, course registration, course scheduling, grade reporting, financial aid, billing and payment processing, and alumni relations.

PROPOSED SYSTEM

The proposed system for a University Management System (UMS) involves the development of a comprehensive and user-friendly platform for managing the academic and administrative functions of a university. The proposed system aims to streamline various tasks such as student enrollment, course management, fee collection, and grade reporting, and provide a centralized platform for students, faculty, and administrators to access and manage information. The proposed system will have a modern and intuitive user interface that is accessible from any device, including desktops, laptops, and mobile phones.

Overall, the proposed system aims to improve the efficiency, accuracy, and effectiveness of the UMS by providing a comprehensive and user-friendly platform for managing academic and administrative functions. It will enhance the user experience, reduce manual errors, and provide real-time data for better decision-making. The proposed system will ensure the UMS can adapt to the changing needs of the education sector and remain competitive in the digital age.

OBJECTIVES

- 1. Automation of administrative processes:** The UMS aims to automate administrative processes such as data entry, report generation, and tracking of student records. This will save time, reduce errors, and enable staff to focus on more critical tasks.
- 2. Improvement in communication and collaboration:** The UMS aims to enhance communication and collaboration between departments by providing a centralized platform for managing all university activities. Faculty members and staff can share information, collaborate on projects, and communicate more efficiently.
- 3. Enhancement in transparency and accountability:** The UMS aims to improve the transparency and accountability of university operations. The system provides real-time access to critical data, including student records, financial information, and faculty records, improving decision-making and enabling better resource allocation.
- 4. Effective management of academic resources:** The UMS aims to provide tools for managing academic resources, including faculty, courses, and academic programs. The system will enable universities to track faculty performance, schedule courses, and manage academic programs more

efficiently, optimizing their academic resources.

5. Security of data: The UMS aims to promote data security and privacy by providing robust security features such as access controls, data encryption, and regular backups. This ensures that sensitive data is protected and prevents unauthorized access.

SYSTEM REQUIREMENTS

SOFTWARE REQUIREMENTS

Software is an essential component of a University Management System (UMS) as it provides the functionality required for managing various academic and administrative tasks.

The various software's that are being used in the development of the University Management System (UMS) are:

Android Studio:

Android Studio is an Integrated Development Environment (IDE) specifically designed for developing Android apps. It is an official IDE for Android app development and is provided by Google. Android Studio is based on the IntelliJ IDEA Community Edition, a popular Java IDE.



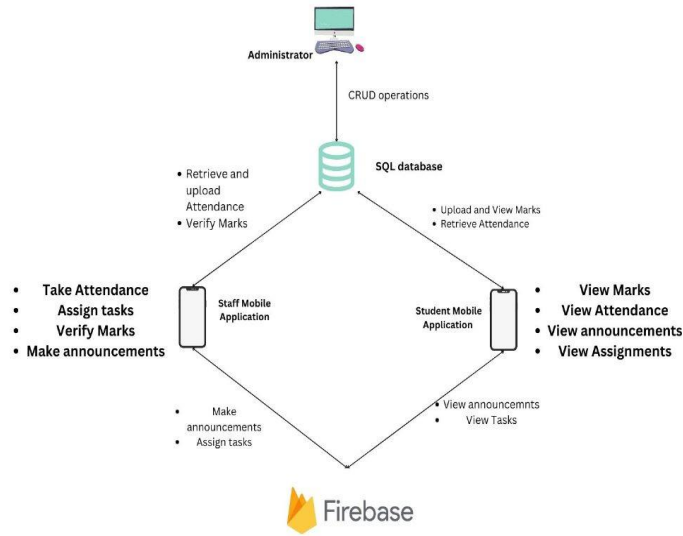
Vs code (Visual Studio code):

VS Code, or Visual Studio Code, is a free and open-source code editor developed by Microsoft. It is a lightweight yet powerful tool that supports a wide range of programming languages and platforms. VS Code provides a wide range of features that make it easy for developers to write, debug, and deploy code.



Firebase: Firebase is a mobile and web application development platform owned by Google. It provides a suite of tools and services for building, managing, and scaling mobile and web applications. Firebase simplifies the process of building and deploying applications by providing developers with a set of pre-built features and services that can be easily integrated into their applications.

METHODOLOGY



For a student, there exists a one-to-many relationship between Department and student where a department can have many students whereas a student can belong to one Department.

- There are entities in the database, which are basically playing the roles of Student, Faculty and Administrator.
- A department can have multiple courses which can further have multiple sections taught by instructors.
- A student has to submit an assignment which is given by the instructor teaching a section. There exists a many-to-many relationship where a student has to submit multiple assignments and an instructor can give multiple assignments to the students.

Student

View Marks: Students can view their academic performance and grades for various courses and assignments. The system allows them to see their marks for individual assignments, midterms, and final exams. They can also view their overall grade point average (GPA) and track their academic progress over time.

Staff

Take Attendance: University staff can take attendance for each course or class session. The system allows them to track student attendance and generate reports on attendance patterns. This feature helps university staff to monitor student engagement and identify any potential issues.

Assign Tasks: University staff can assign tasks and assignments to students for each course. They can set deadlines, provide instructions, and track student progress. This feature helps university staff to manage student workload and assess their learning progress.

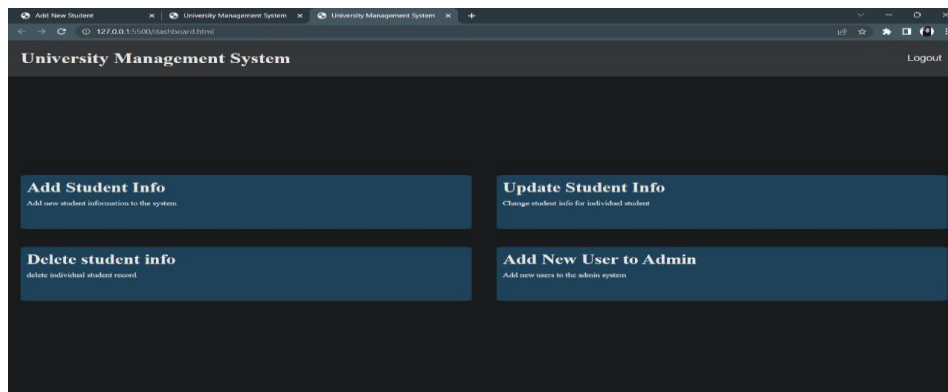
APPLICATIONS

- UMS can help universities manage student data including admissions, registration, academic records, and financial aid.
- This can help universities streamline their operations, reduce paperwork, and improve student services.
- UMS can help universities manage faculty data including hiring, promotion, tenure, and workload.
- This can help universities make better decisions regarding faculty staffing, and improve faculty

productivity and job satisfaction.

- UMS can help universities manage course data including scheduling, enrollment, and grading.
- This can help universities optimize their course offerings, ensure that students are enrolled in the right courses, and streamline the grading process.

SNAPSHOT



CONCLUSION

University Management System (UMS) is a valuable investment for universities seeking to improve their academic and administrative processes, enhance the student experience, and increase their competitiveness. A UMS can automate many of the tasks that were previously performed manually, improve transparency and accountability, provide better decision-making insights, and create a centralized platform for managing academic and administrative processes.

BIBLIOGRAPHY

1. A Review International Journal for Research in Applied Science and Engineering Technology 10.22214/ijraset.2022.39839 2022 Vol 10 (1) pp. 359-366 Author(s): Pratiksha D Dutonde
2. A web application system for structural modal identification Authors: Alexandre Cury, Dr. Civil Engineering, , , and Flávio Barbosa, DSc,
3. A Study on Android Application Development September 2013 Journal of Telematics and Informatics 1(2) Author(s): Rajkumar A. Soni
4. Research on Development of Android Applications Published: 01 November 2011 Authors: Jianye Liu and Jiankun Yu