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INSTRUCTOR'S GRADE VIEWER SYSTEM: MOBILE ANDROID APPLICATION

Dr. Violeta B. Monticalvo
Engr. Justine S. Aban
Dr. Josefina R. Sarmiento

Aemilianum College Inc. Sorsogon City, Philippines

Abstract

In the modern educational setting, efficient grade management and communication are essential for academic success and effective interaction among educators, students, and parents. Traditional grade reporting methods, often reliant on physical documents or cumbersome web systems, are increasingly seen as inadequate due to their time-consuming nature and potential security vulnerabilities. The "Instructor's Grade Viewer System: Mobile Android Application" addresses these challenges by providing a secure, user-friendly mobile platform for grade reporting.

This study details the development and implementation of this mobile application, specifically designed for Android devices, which facilitates the secure uploading and viewing of student grades. Utilizing Optical Character Recognition (OCR) technology, the application ensures the confidentiality of student data, granting access exclusively to authorized users. The system's design aims to enhance the efficiency of grade management, improve transparency and accountability, and increase student and parent engagement through easy access to academic progress information.

The research focuses on the system's application within the Osmeña Colleges Computer Science Department, involving 143 fourth-year students. Key features include secure grade sheet uploads by instructors and intuitive access for students and parents. Evaluation of the system revealed high user satisfaction in terms of usability, security, and efficiency, with average ratings reflecting these strengths.

By integrating advanced technology into the educational process, the Instructor's Grade Viewer System exemplifies how mobile applications can streamline operations and improve educational outcomes. This study contributes to the discourse on educational technology, offering insights into the effective design and implementation of mobile solutions for academic institutions.

Key Words: Aemilianum College Inc., Educational Technology, Grade Management, Mobile Application, Optical Character Recognition (OCR).

Introduction

In the contemporary educational landscape, the efficient management and dissemination of student grades are critical to fostering academic success and maintaining robust communication channels among instructors, students, and parents. Traditional methods of grade reporting, often reliant on physical documents or web-based systems, can be cumbersome, time-consuming, and prone to security vulnerabilities. As mobile technology becomes increasingly integral to daily life, there is a growing demand for innovative solutions that leverage this technology to enhance educational processes. The "Instructor's Grade Viewer System: Mobile Android Application" emerges as a response to this need, offering a modern, secure, and user-friendly platform for grade reporting.

This study explores the development and implementation of a mobile application designed specifically for Android devices that facilitates the seamless uploading and viewing of student grades. The primary goal of this system is to provide a convenient and accessible means for instructors to manage and distribute grade information, while ensuring that students and parents can readily access this information in a secure environment. The application employs Optical Character Recognition (OCR) technology to maintain the confidentiality of student data, allowing only the intended recipients to view their grades.

The implementation of this system is anticipated to bring several significant benefits. Firstly, it aims to enhance the efficiency of grade management, reducing the administrative burden on instructors. Secondly, it seeks to improve transparency and accountability within the educational system, as students and parents can promptly access accurate grade information. Finally, by leveraging mobile technology, the system promotes increased student engagement, as students can easily track their academic progress and parents can stay informed about their child's performance.

This study will detail the design, development, and evaluation of the Instructor's Grade Viewer System, highlighting its potential to transform grade reporting processes in educational institutions. Through this innovative approach, the research aims to contribute to the broader discourse on integrating technology in education to improve outcomes and streamline operations.

General Objectives

The main objective of the study is to develop an IT solution entitled "Instructor's Grade Viewer System: Mobile Android App" that will be useful to the instructor and students of Osmeña Colleges Computer Science Department.

Specific Objectives

Specifically, it will perform the following:

1. Develop a feature that allows instructors to securely upload their legitimate grade sheets by clicking the "Admin/Instructor" button.
2. Create an interface that enables students, parents, and authorized users to access registered accounts and view grades by pressing the "Student" button.

3. Ensure the system supports the secure and efficient handling of grade data uploaded by instructors.

4. Design a user-friendly experience for both instructors and students to navigate the application easily.

5. Implement robust security measures to protect the privacy and integrity of student grade information during access and viewing.

Scope and Delimitation

The scope of this study is focused on the development and implementation of the Instructor's Grade Viewer System: Mobile Android App, specifically tailored for the Osmeña Colleges Computer Science Department. This application will include a feature that allows instructors to securely upload legitimate grade sheets by clicking the "Admin/Instructor" button. Additionally, the system will create an interface that enables students, parents, and authorized users to access registered accounts and view grades by pressing the "Student" button. The study aims to ensure the system supports the secure and efficient handling of grade data uploaded by instructors, and it will prioritize designing a user-friendly experience for both instructors and students to navigate the application easily.

The study is delimited to the College of Computer Science main campus of Osmeña Colleges, located in Masbate City. The research will specifically involve the 143 fourth-year students currently enrolled in Thesis Writing. The scope will not extend beyond this department, campus. The study will focus exclusively on the development and initial implementation phases of the mobile application, emphasizing the robustness of security measures to protect the privacy and integrity of student grade information during access and viewing.

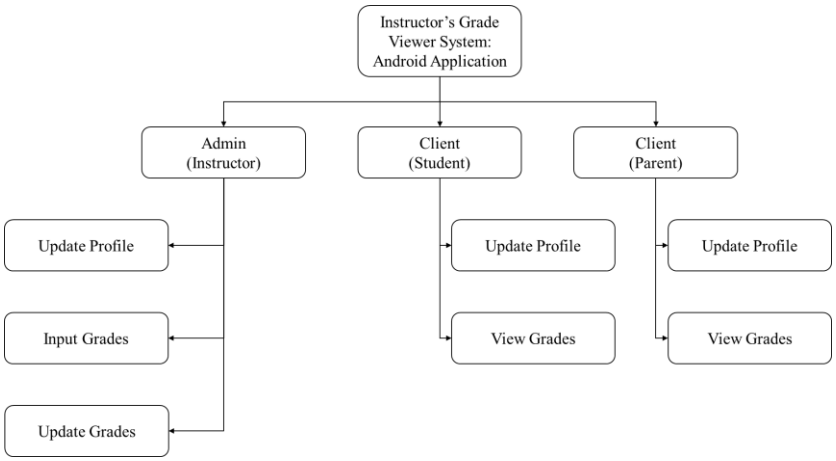

Figure 1
Functional User Diagram

Figure 1 illustrates the functional decomposition of the Instructor's Grade Viewer System: Mobile Android App, specifically designed for the Osmeña Colleges' College of Computer Science in Masbate City. This visual representation provides a comprehensive overview of the system's features and functionalities, highlighting the distinct access levels for different user roles. The system incorporates a well-defined three-tiered accessibility structure: students and parents are designated as clients, who can view grades via the "Student" button, while instructors are assigned the role of administrators, enabling them to securely upload grade sheets using the "Admin/Instructor" button. This structured approach ensures efficient management and secure dissemination of grade information.

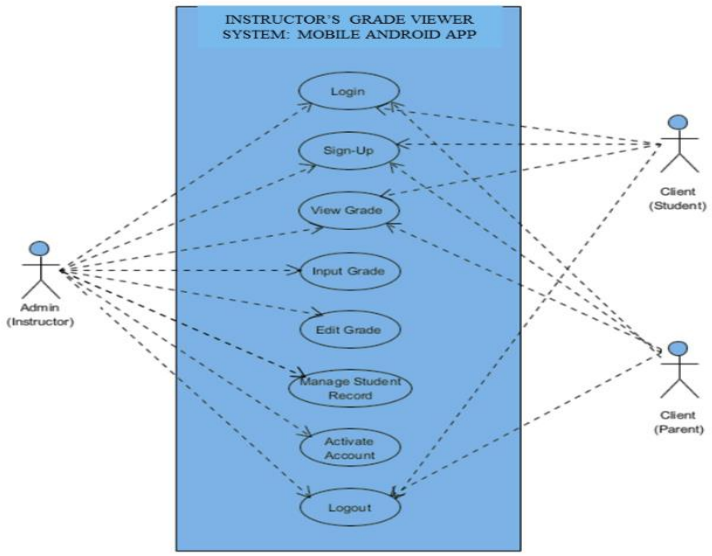

Figure 2
Use Case Diagram

Figure 2 illustrates the diagram depicting the primary users of the study: the admin and the clients. The admin, typically an instructor, possesses comprehensive control over the system and is responsible for overseeing the entire grade management process, including the uploading of legitimate grade sheets. Conversely, the clients, represented by students and parents, have a more limited role. They can access and view specific grades through a search function but do not have administrative privileges. This delineation ensures a clear separation of responsibilities, enhancing the security and integrity of the grade viewing system.

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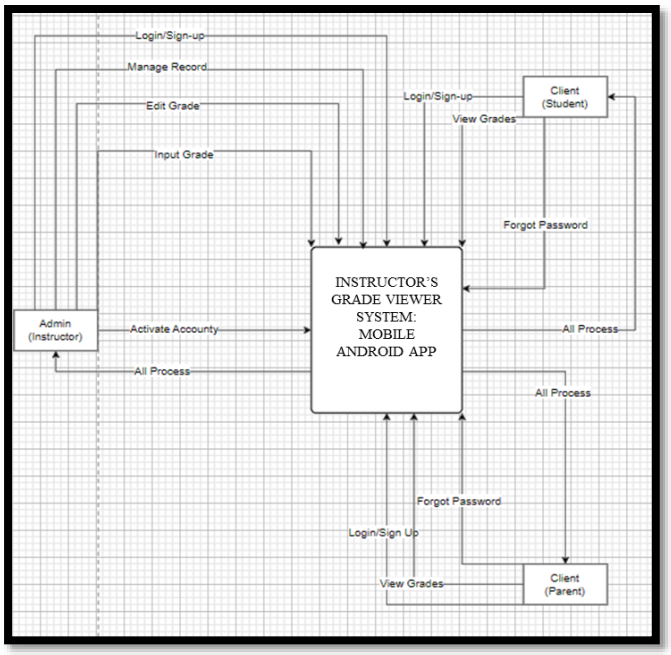

Figure 3
System Context Diagram

Figure 3 illustrates the system context diagram for the Instructor's Grade Viewer System: Mobile Android App. This diagram provides a visual representation of the interactions between end-users, including both clients (students and parents) and the admin (instructors), and the system itself. It effectively showcases the data flow among these users, detailing how information is exchanged within the system. The diagram highlights the seamless integration of user activities, from the admin uploading grade sheets to clients accessing and viewing their specific grades, thereby ensuring a clear understanding of the system's operational dynamics.

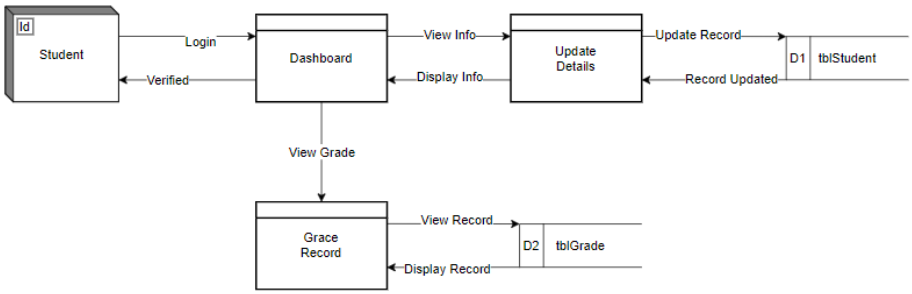

Figure 4
System Data Flow Diagram of Student (Client)

Figure 4 presents the Data Flow Diagram (DFD) with a focus on the client student within the system. This diagram illustrates that the student, as a client user, has limited access to the system functionalities. Their capabilities are primarily restricted to viewing their grades and updating their profile information. By depicting the flow of data specifically for student users, this diagram emphasizes the streamlined interaction between students and the system, ensuring clarity in their role and activities within the broader framework of the Instructor's Grade Viewer System: Mobile Android App

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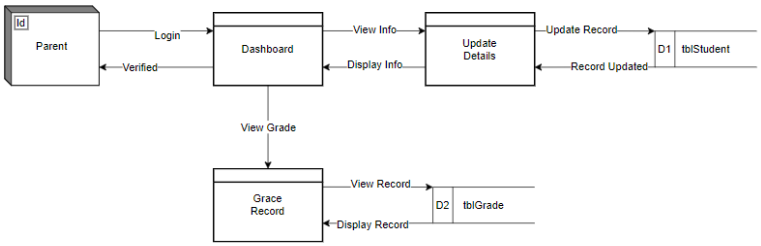

Figure 5
System Data Flow Diagram of Parent (Client)

Figure 5 provides a detailed Data Flow Diagram (DFD) with a specific focus on the client parent within the system. This diagram underscores that parents, as client users, have restricted access within the system. Their functionalities are primarily limited to viewing their child's grades and updating their profile information. By highlighting the flow of data specifically for parent users, this diagram offers a clear visualization of their role and interactions within the broader framework of the Instructor's Grade Viewer System: Mobile Android App.

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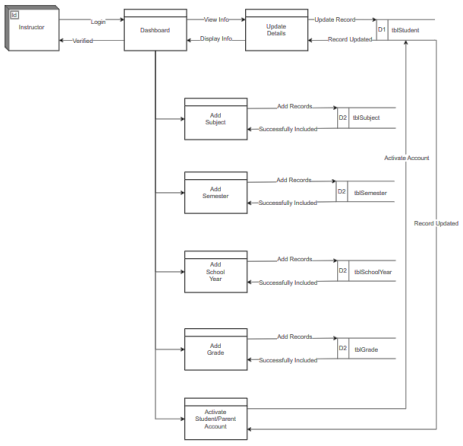

Figure 6
System Data Flow Diagram of Instructor (Admin)

Figure 6 presents a detailed Data Flow Diagram (DFD) focusing on the admin instructor within the system. This diagram highlights that the admin, representing the instructor, has comprehensive access and control over the entire system. The instructor, in their role as admin, oversees all processes within the system, including uploading grade sheets, managing user data, and ensuring the smooth operation of the application. By illustrating the flow of data and the admin's interactions, this diagram provides a clear depiction of the extensive capabilities and responsibilities entrusted to the instructor within the Instructor's Grade Viewer System: Mobile Android App.

Findings

After the system was designed, tested, and evaluated, the following findings were established:

1. The system includes a robust feature that allows instructors to securely upload grade sheets. The functionality was tested and received a high rating for its ease of use and security, with an average weighted mean of 4.92, interpreted as Very Satisfactory.
2. An intuitive interface was developed, allowing students, parents, and authorized users to access their accounts and view grades efficiently. This feature was rated highly for its effectiveness, with an average weighted mean of 4.95, also interpreted as Very Satisfactory.
3. The system demonstrated excellent reliability and efficiency in handling grade data, with stringent measures ensuring data integrity. This aspect of the system achieved an average weighted mean of 4.96, with an overall interpretation of Excellent.
4. The user interface was designed with a focus on usability, receiving positive feedback for its simplicity and accessibility. The user experience component received an average weighted mean of 4.93, interpreted as Very Satisfactory.
5. The system was equipped with advanced security protocols to safeguard student data. The security measures were highly effective, earning an average weighted mean of 4.97 and an interpretation of Excellent.

Conclusions

The study's findings lead to the formulation of the following conclusions:

1. The system successfully incorporates a robust feature for instructors to securely upload grade sheets, rated highly with an average weighted mean of 4.92, interpreted as Very Satisfactory.
2. An intuitive interface was developed, allowing students, parents, and authorized users to efficiently access their accounts and view grades, receiving an average weighted mean of 4.95,

interpreted as Very Satisfactory.
3. The system demonstrated excellent reliability and efficiency in handling grade data, with an average weighted mean of 4.96, interpreted as Excellent.
4. The user interface was designed with a focus on usability, receiving positive feedback and an average weighted mean of 4.93, interpreted as Very Satisfactory.
5. The system's advanced security protocols effectively safeguarded student data, earning an average weighted mean of 4.97, interpreted as Excellent.

Recommendations

Based on the conclusions, the following recommendations were drawn:

1. Provide additional training sessions for instructors to maximize the secure upload feature's potential and usability.
2. Regularly update and refine the user interface based on user feedback to maintain and enhance its intuitiveness and efficiency.
3. Implement routine system audits and stress tests to ensure ongoing reliability and efficiency in handling grade data.
4. Continuously gather user feedback to make iterative improvements to the user interface, ensuring it remains user-friendly.
5. Maintain and periodically update security protocols to stay ahead of potential threats and ensure ongoing protection of student data.

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