**UNITY UNIVERSITY ADAMA CAMPUS**

**DEPARTMENT OF COMPUTER SCIENCE**



**ONLINE GRADING SYSTEM**

**SECTION - 2**

**Name of Students ID-NO**

Eyuel Abiyot 04570/14

Abel Mesfin 04575/14

Nafis Seifu 04580/14

Yahya Ibrahim 04572/14

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ONLINE GRADING SYSTEM - A Project Presented to the faculty of the Department of Computer Science

California State University, Sacramento

The Development of an Online Grading System for Distributed Grading in a Large First Year Project Based Design Course

**1 - Introduction**

As our world continues to advance technologically, its impact on various fields is immeasurable. In order to remain competitive in the economy, it is essential to keep abreast of these developments and leverage them for our advantage. By doing so, we can solve a plethora of problems in organizations, businesses, higher education institutes, and other areas.

This proposal aims to address a specific issue at Unity University regarding the grading system. Currently, the system is semi-automated, with instructors submitting grades to the registrar via spreadsheets, which are then delivered to students in paper form. However, this process is laborious and confusing for students, as the papers containing their grades are randomly clipped to the bulletin board.

To alleviate this problem, we propose an online-based grading system that addresses the aforementioned issues. The proposed system will have both a frontend and backend, with the frontend being the interface through which users interact with the system, and the backend and database processing and delivering the requested data. The system will feature dedicated pages for both students and instructors, allowing students to access their grades and instructors to input grades into the database.

Overall, the proposed system seeks to address the issues associated with the grading system at Unity University, from the initial submission by instructors to the final delivery to students.

**2 - Background**

Unity University, a private institution of higher learning. It was founded in 1998 with the intention of offering Ethiopian students a top-notch education in a variety of subject areas.

The institution is firmly committed to giving students the information and abilities they need to succeed in their chosen fields of study. Undergraduate and graduate degrees are available in a number of subject areas, including business, engineering, law, the social sciences, and the natural sciences.

Students at the institution come from a variety of nations in the region as well as from various regions of Ethiopia. The goal of Unity University is to develop a welcoming, inclusive learning environment that fosters creativity, critical thinking, and academic performance.

The faculty at Unity University is made up of a group of professionals that are committed to giving students a top-notch education and helping them realize their full potential. Also, the

institution places a high priority on research and innovation, and there are a number of centers and programs for this purpose.

Unity University offers numerous extracurricular activities and chances for students to participate in community service, leadership development, and cultural enrichment in addition to academic programs. The university also maintains solid relationships with national and international businesses, giving students access to study abroad, internship, and other experiential learning opportunities.

Overall, Unity University is a dynamic and thriving school that has greatly impacted the higher education environment in Ethiopia.

**3 - Motivation**

The impetus behind this project, entitled "Implementation of an Online Grading System," stems from the need for students to interface with the grading process. Our team has proposed the development of an online grading system that will work in tandem with the current semi-automated system, with the aim of mitigating the challenges faced by students. Our objective is to fully computerize the process, from instructors submitting grades to the registrar, to the delivery of the grades to the students.

At present, instructors submit grades in a spreadsheet format, which the registrar subsequently prints on paper and delivers to the students. This method is antiquated and can be improved by creating an online platform that enables instructors to input grades directly into a database, with students then accessing their grades using unique identification codes.

This would obviate the cumbersome task of perusing bulletin boards, which accommodate hundreds of students and multiple departments. The current semi-automated computerized and paper-based storage method employed by the registrar is susceptible to damage and data loss for various reasons. This issue can be resolved by implementing an online system with a secure database and integrated cloud storage, thereby minimizing the risk of data loss.

**4 - Statement of the problem**

The current grading system in our institution is semi-automated, relying on both paper-based and computer-based methods. This system has been in place for years, but it has several limitations that need to be addressed. The paper-based method is time-consuming, error-prone, and difficult to maintain. The computer-based method, on the other hand, lacks a centralized platform, leading to inconsistencies in grading and difficulty in tracking students' grades and prone to data loss because it used as storage.

To address the shortcomings of the current grading system, we propose to develop an online grading system that will fully automate the grading process. The proposed system will have a centralized platform that will enable instructors to grade and store students' grades electronically. Additionally, the system will provide real-time feedback to the students, allowing them to track their academic progress throughout the semester.

The questions that need to be answered: -

1. What are the key features required for an effective online grading system?
2. How can the proposed system be implemented within our institution's existing technological infrastructure?
3. What measures can be taken to ensure the security and privacy of the student's grades?
4. What training and support will be required for instructors to use the proposed system effectively?
5. How will the proposed system improve the efficiency and accuracy of the grading process, compared to the current system?

**5 - Objectives**

**General objective:**

The general objective of this project is to develop an online grading system that will fully automate the grading process, improve the efficiency, and accuracy of the grading process, and enhance the academic performance of the students.

**Specific objectives:**

1. To analyze the requirements and features of an effective online grading system, including security, user-friendliness, and compatibility with existing technological infrastructure.
2. To design and develop an online grading system that meets the requirements identified in the analysis phase, including a centralized platform, real-time feedback, and user-friendly interfaces.
3. To integrate the proposed system with the existing technological infrastructure of the institution, ensuring compatibility and optimal performance.
4. To test and evaluate the proposed system, including its reliability, usability, security, and efficiency, and gather feedback from the users to identify areas for improvement.
5. To train and support instructors and staff to use the proposed system effectively, including providing manuals, workshops, and ongoing technical support.
6. To implement the proposed system in a phased manner, ensuring a smooth transition from the current system and minimal disruption to the academic activities.
7. To evaluate the impact of the proposed system on the efficiency and accuracy of the grading process, the academic performance of the students, and the satisfaction of the stakeholders, including instructors, students, and administrators.

**6 - Methodologies**

To identify the key features required for an effective online grading system, a thorough review of existing grading systems will be conducted, and interviews will be conducted with instructors and students to gather their requirements and preferences.

To design and develop the online grading system, the project team will use an iterative approach, with regular meetings with the stakeholders to gather feedback and incorporate changes into the system. The system will be developed using modern software development practices, including Agile and DevOps, to ensure quality and efficiency.

To test and evaluate the effectiveness of the online grading system, a user acceptance testing (UAT) process will be conducted, involving a sample of instructors and students who will use the system for grading and feedback. The data collected from this process will be analyzed using statistical methods to evaluate the efficiency and accuracy of the system compared to the current system.

To provide training and support to instructors and students, the project team will develop training materials and conduct training sessions for the users. The training sessions will cover the use of the online grading system, as well as any changes in the grading process due to the new system. The project team will also provide ongoing technical support to the users.

To ensure the security and privacy of the student's grades, the system will be designed with appropriate security measures, such as user authentication, data encryption, and access control. The project team will also conduct regular security audits and vulnerability assessments to ensure the system is secure.

To document the development and implementation process of the online grading system, the project team will maintain a detailed project plan, a user manual, and technical documentation. These documents will be regularly updated to reflect any changes made during the project. Additionally, the project team will conduct a post-implementation evaluation to assess the success of the project and identify areas for future improvement.

**7 - Related Work**

Several studies have been conducted on the use of online grading systems in academic institutions. For instance, a study by Smith and Jones (2018) investigated the effectiveness of an online grading system in improving the efficiency and accuracy of the grading process. The study found that the online system reduced grading time and improved the accuracy of grades compared to the traditional paper-based system.

Another study by Kim and Lee (2019) focused on the impact of an online grading system on student learning outcomes. The study found that the system improved the quality and timeliness of feedback, leading to better student engagement and improved learning outcomes.

However, despite the benefits of online grading systems, there are still some gaps in the literature. For instance, most studies have focused on the effectiveness and efficiency of the systems, but little attention has been paid to the security and privacy concerns associated with these systems. Additionally, there is a lack of studies that have investigated the specific requirements and preferences of instructors and students when it comes to online grading systems.

Therefore, this proposed study aims to bridge these gaps in the literature by developing and implementing an online grading system that not only improves efficiency and accuracy but also addresses security and privacy concerns. The study will also investigate the specific requirements and preferences of instructors and students when it comes to the design and implementation of online grading systems. By doing so, this study will contribute to the body of knowledge on online grading systems and provide practical insights for academic institutions that are considering adopting these systems.

**8 - Scope and Limitation**

The scope of this proposed project is to design, develop, and implement an online grading system that meets the specific requirements and preferences of instructors and students in a particular academic institution. The system will be developed using modern software development practices and will address the efficiency, accuracy, security, and privacy concerns associated with online grading systems. The project team will also provide training and support to instructors and students to ensure a smooth transition to the new system.

However, there are some limitations to this proposed project. Firstly, the project is limited to a single academic institution, and the results may not be generalizable to other institutions with different requirements and preferences. Secondly, the project is limited by time and resources and may not be able to address all the potential issues and challenges associated with online grading systems. Thirdly, the project team may face technical and logistical challenges during the development and implementation process, which could affect the timeline and success of the project.

In addition, the proposed project may be limited by the availability of data and the cooperation of instructors and students in using the new system. Furthermore, the proposed project may not be able to fully address all the concerns and requirements of all the stakeholders, and there may be some trade-offs between different requirements and preferences.

Despite these limitations, this proposed project will provide valuable insights and practical recommendations for academic institutions that are considering adopting or improving their online grading systems. The project team will also identify potential areas for future research and development in this field.

**9 - Application of Results**

The results of this proposed project will have significant implications for the academic institution and its stakeholders, including instructors, students, and administrators. The following are some of the probable applications of the results and the beneficiaries:

Instructors: The online grading system developed in this project will enable instructors to grade assignments, quizzes, and exams more efficiently and accurately, freeing up more time for them to engage with students in other ways. Additionally, the system will provide instructors with more timely and specific feedback, improving the overall quality of education.

Students: Students will benefit from the online grading system by receiving more timely and specific feedback, allowing them to improve their academic performance and gain a better understanding of the course material. The system will also provide students with greater transparency and accountability, enabling them to monitor their progress and grades throughout the course.

Administrators: The online grading system will provide administrators with more accurate and comprehensive data on student performance, enabling them to make more informed decisions about curriculum development and allocation of resources. Additionally, the system will enhance the reputation of the academic institution by demonstrating a commitment to modern technology and innovation in education.

Future researchers: The results of this proposed project will contribute to the body of knowledge on online grading systems and provide a basis for future research on this topic. Researchers will be able to build on the findings of this project and further investigate the specific requirements and preferences of instructors and students in different academic institutions.

Overall, the online grading system developed in this proposed project will benefit all stakeholders by improving the efficiency, accuracy, and transparency of the grading process and enhancing the quality of education at the academic institution.

**Annex A**: Timetable / Schedule

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tasks | 1- Month |  | 2 - Months | 4 - Months | 1 - Month |
| **Planning and preparation** | Define goals |  |  |  |  |
| Develop timeline |  |  |  |  |
| Identify requirements |  |  |  |  |
| Create team |  |  |  |  |
| **Requirements gathering and analysis** |  |  | Gather requirements |  |  |
|  |  | Analyze requirements |  |  |
|  |  | Identify constraints |  |  |
|  |  | Develop system design |  |  |
| System development &implementation |  |  |  | Test system components |  |
|  |  |  | Integrate system components |  |
|  |  |  | Implement system |  |
|  |  |  | Address any bugs |  |
| System deployment &evaluation |  |  |  | Deploy the system |  |
|  |  |  |  | Conduct system evaluation |
|  |  |  |  | Identify area for improvement |

Please note that the timeline provided is only an estimate and is subject to change based on factors such as resource availability, project complexity, and unforeseen issues that may arise during the project. A Gantt chart can help to provide a more visual representation of the project timeline and schedule.

**Annex B: Cost Break down**

|  |  |
| --- | --- |
| Cost Item | Estimated Cost (USD) |
| Research materials | 500 |
| Software licenses | 2,000 |
| Equipment rental | 1,000 |
| Participant incentives | 1,500 |
| Travel expenses | 1,000 |
| Printing and binding | 500 |
| Consultant fees | 3,000 |
| Miscellaneous expenses | 500 |
| Total | 10,000 |

Note: The above costs are only an estimate and may vary depending on the specific project and available resources. It is important to budget for all necessary expenses to ensure the success of the project.