UNG Automated Attendance System

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Case Proposal: To fulfill its institutional goals, the University of North Georgia (UNG) provides a statement in their strategic plan declaring, "UNG will successfully leverage current and emerging technologies to support the quality of the student learning experience and operational effectiveness" (Engaging UNG). Currently, attendance is recorded manually by instructors writing roll-call results on paper to later input on D2L, inputting the attendance as they call roll, or collecting an in-class assignment from attending students. These recording methods take up too much time and are prone to error. A course with many students uses learning time to perform a simple, but necessary task. In the article titled, "A 21st-Century Attendance Policy" a teacher describes collecting attendance by using five minutes of every class for students to do an assignment. Instructors and students lose multiple full class meetings after totaling the five minutes used for each class in a semester. Many instructors include attendance as part of a student's final grade. Manually recording attendance jeopardizes the integrity of the collected data, which decreases the validity of a student's final grade. Researchers conducting a study on the errors of human data entry found, "visual checking resulted in 2958% more errors," than other methods studied (Barchard & Pace, 2011). Visual checking would be the method UNG instructors are using when submitting attendance records to D2L. The written roll-call results and the collected in-class assignments may get lost or damaged before being input on D2L, which would affect calculated grades. By implementing an automated attendance system, integrity is maintained for student attendance records, productivity increases, and efficiency increases throughout the institution.

Implementation Plan: To complete the project, the following items must be developed and integrated:

Component	Function	Source
MagStripe Card Reader	Collects student data from swiped ID cards	Purchased from Amazon for $15 (Link to product)
Database	Collects, stores, retrieves, and manipulates student data for comparing input to be stored, displaying student web reports and instructor web forms	Developed In-House using Microsoft SQL Server Management Studio
Application Server	Collects and processes incoming data from swiped cards, transmits data to the database, and provides off-line support	Developed In-House using .NET Framework
Web Application	Provides a web report displaying a student's attendance records and provides a web form for instructors to view and edit attendance records	Developed In-House using .NET Framework

Required Technology: The following hardware and software technologies are required:

- Computer with network access
- Web browser with internet access
- Magstripe card reader
- Microsoft SQL Server Management Studio
- Microsoft Visual Studio
- .NET Framework

Expected Outcome: Successful implementation will provide UNG with an automated attendance system. The system will maintain the integrity of attendance records for the institution by providing accurate and consistent data collection, storage, retrieval, and modification functions. The automation will increase UNG's ability to provide a quality learning experience by not detracting from an instructors teaching time. Students will further develop responsibility from being held accountable for their attendance grade and the automated system will validate the grade they receive. UNG administrators will be able to extract valuable information from the collected data, increasing their decision-making abilities, and furthering the institutions operational effectiveness.

References

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