Attendance Tracking Tools and Tricks

Non-Tenure Track Faculty Learning Community

The University of Georgia

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Motivation

The University of Georgia requires prompt reporting of withdrawal information, including the date of last attendance, for financial aid and enrollment certification reasons. Our Faculty Learning Community (FLC) consists of UGA personnel from non-tenurable ranks that involve heavy teaching responsibilities: Lecturer, Instructor, and Academic Professional. In addition, budget constraints may result in increasingly larger class sections, making collecting attendance information more time-consuming.

Our FLC dedicated time during meetings to investigate, analyze, and make recommendations on the benefits and disadvantages of attendance-taking methods, particularly for large lecture classes. Thus, the methods that are discussed in this document have been deployed in real-world class situations at UGA.

Benefits of Required Attendance

- Evidence of better examination performance
- Accurate records for the Registrar's office and Department of Education
- Thorough information for responding to student appeals

Attendance Gathering Mechanisms

- *No attendance*: instructor does not take or record attendance
- *Taking roll*: instructor checks off names off a pre-printed class roll
- *Sign-in sheet*: instructor passes around a sheet in which students either sign their names or sign/initial next to their pre-printed name
- *Personal Response System* (PRS aka "Clickers"): students purchase a Turning Technologies device allowing students to answer quizzes in a classroom. Student responses are automatically downloaded onto the instructor's computer
- *Paper-based quizzes*: instructor passes out paper-based quizzes that are collected and analyzed by the instructor or a teaching assistant
- *Barcode scanner*: instructor uses a portable barcode scanner to scan student ID cards. The Department of Computer Science procedure for using barcodes is outlined in more detail later in this document.

Advantages and Disadvantages of Attendance Systems

Mechanism	Advantages	Disadvantages
No attendance	+ No cost + Low use of time	- No records - Lower class attendance
Taking roll	+ Low setup effort + No cost to students	- Time consuming as classes get larger in size
Sign-in-sheet	+ Low setup effort + Low use of time + No cost to students	- If not pre-printed, instructor needs to alphabetize responses - Does not scale up to larger class sizes - If pre-printed with student names, may violate FERPA directory restrictions - Students may be dishonest and sign in for others
Quizzes through PRS ("Clickers")	+ Low setup effort + Low use of class time + Automated statistics for instructor	- Substantial cost for students ($30) - Students may be dishonest and carry others' clickers - Student feedback indicates dislike for the "pop quiz culture"
Attendance checks via PRS	+ Low setup effort + Low use of time + Automated statistics for instructor	- Substantial cost for students - Students may be dishonest and carry others' clickers - University or department changes clicker model requirement, requiring additional cost for student
Paper-based quizzes or attendance assignment	+ Medium setup effort + Low/medium use of class time + No cost to students	- Instructional resources required for grading and organizing
Miniature Bar Code Scanner	+ Students can't use multiple ID cards (prevent fraud) + No cost to students + Minimal class time	- Requires low time to process files - Requires initial purchase of scanners

Miniature Bar Code Scanner: Experiences in the Department of Computer Science

Motivation: CSCI 1100 is the Department of Computer Science's service course for non-majors and generally has enrollment of about 200 students. Estimates of attendance during several semesters when attendance was not taken averaged about 60-65%.

The department purchased two Opticon 2001 handheld scanners at a cost of approximately $109 each. We note that the cost is a one-time purchase cost. These barcode scanners are capable of storing up to 15,000 barcodes, are small in size, and are charged via USB.

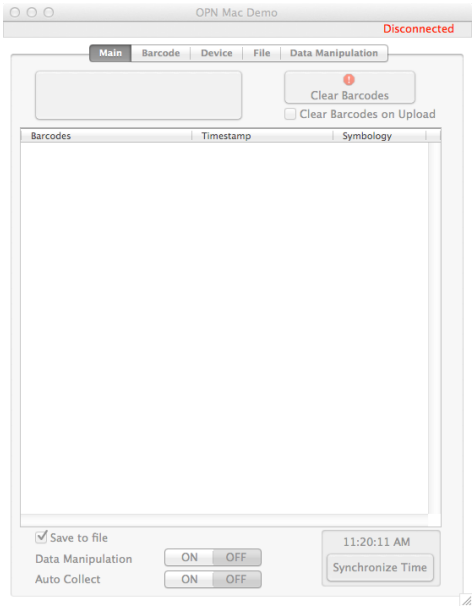
In real-world usage in CSCI 1100, the instructor and a teaching assistant could scan 200 student IDs in about two and a half minutes as students exited the lecture auditorium. By scanning ID cards that contain the picture of the ID holder, the temptation to hold someone else's ID is minimal. In addition, a student would instantly be called out if they presented multiple ID cards to be scanned.

An additional benefit of using the barcode scanners is that it provides an automated mechanism for monitoring attendance without imposing a financial burden on students. A non-trivial number of UGA students come from counties where the average income level is near poverty levels. The cost is a one-time cost associated to the departments, not to the individual student

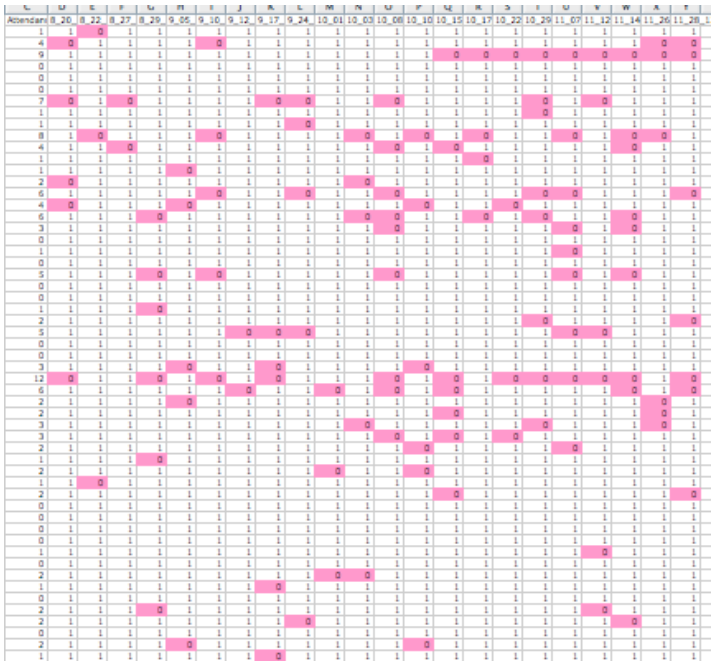
Processing the attendance files requires a small amount of effort from the instructor or teaching assistant:

- free software provided by Opticon is used to download attendance scans from the scanner
    - https://wiki.opticonusa.com/techsupport/en/OPN2001#Downloads
    - using a text editor, cut and paste the scans into a separate file for each class date
- download your UGA class roll from the Registrar's web site in Microsoft Excel format
    - remove all columns from the spreadsheet except name and 810 number
- use the Java program created by Sal LaMarca, graduate teaching assistant for Computer Science, to process each attendance file
    - software is provided via contacting plaue@uga.edu
- use Microsoft Excel or another spreadsheet program to calculate attendance
    - students are represented in rolls and class dates are labeled in columns
    - students present for a class receive a value of 1 in the cell; absent students receive a value of 0
    - instructors may opt to use Excel's conditional formatting feature to highlight absences using a color, as shown in the image below (taken from an actual full-semester)

Screenshots



Screenshot of the OPN software. Simply connect the barcode scanner via the supplied USB cable and choose "upload".



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Screenshot of an Excel spreadsheet from a large lecture class from Spring 2013. Conditional formatting is turned on, highlighting absences in red.