Abstract
The Raspberry Pi Attendance System is an iterative improvement to an attendance system written by Professor John Cole, providing professors with a simple, solution for taking attendance.

The RasPi attendance system improves upon the previous edition by allowing for attendance tracking to safely be done by students, without the need of the professor’s laptop, or worry of students faking sign-in.

This system tracks student attendance with the accuracy of a computer based system, without sacrificing the ease-of-use of a paper-based system.

Results
Swipe screen:

Summary
- Built a hardware setup for professors to use for attendance, using a Raspberry Pi
  - Developed a native application with screen management and access control
  - Attendance tracking was done using students’ Comet Cards
- Integrated it with existing system for attendance tracking on professors’ laptops
- Synced from the Raspberry Pi to the professor’s laptops, so professors could prepare for lecture as students signed in

Architecture
- Standalone Attendance System
  - Python 3
  - PyQt5
  - PyBluez
    - RFCOMM Client
  - Hardware:
    - Raspberry Pi
    - Touchscreen
    - Card Scanner
- Professor’s Laptop
  - C#
  - 32feet
  - RFCOMM Server

Impact
Our work this semester resulted in:
- Bluetooth integration into the existing system
- A new system with:
  - Independent attendance tracking, using card scanners
  - Input files compatible with Coursebook roster files
  - Touchscreen controls, a simple UI, and built-in Access Control
  - Attendance data synced to the existing system over Bluetooth

Performance
(From GitHub and ZenHub stats)
- ~9.82 tasks per week, 3.6k total lines of code, ~24.13 commits per week
- Functional expectations were met (bluetooth communicatinaton handled, attendance tracker working with example files)