Real Time Wells Room Monitoring
Introduction and Background
Scenario

- It is Monday of finals week
- You and a group have a final project due Friday
- You need a conference/study room to finish the project
- All the reservation rooms have been reserved for the entire week
- However, you can test your luck at acquiring “first come, first serve” rooms
- But this can take some time and ultimately leave you empty handed and with time wasted

Is there a product that can help you?
YES!

Real Time Wells Room Monitoring can help!
How the System Works

- In each room, there will be a scanner that one person must use to scan their Crimson Card after he/she enters the room and right before exiting the room.
- After scanning, this information will be sent to a website/app.
- On the website and app, all rooms will either be marked as “open” or “occupied”, depending on the state of the scanner.
- Users will be able to tell which rooms are available.
- If the “card scanner” forgets to scan the card before exiting, and somebody sees the room is marked as occupied but is actually empty, the new person can take the room and scan their card, and the system will pause the “forgetter’s” ability to acquire a room.
- If a group forgets to scan as they enter the room, and another group shows up while the room is still marked as open, the group inside must forfeit the room.
Our Company

- Name: Study Secure
- Mission: To make finding rooms to study in easier and to make the whole process of getting together with a class group more efficient
- Values: Ensuring a stress free experience for users and providing a service that eases studying and benefits students
- Structure: Consultants work with schools and find ways to implement our system and communicate needs of schools with designers. Designers make modifications to our system in order to fit schools needs. Engineers develop what designers ask for.
Consulting
Stakeholder Feedback

- Believe this idea is truly beneficial
- This idea will be effective for all of college
- The easy accessibility and viewing will make getting together for projects much more efficient
- Eventually expand to other buildings with conference rooms like SPEA and Luddy Hall.
Future in Company

- Middle man between our company and our client
- Will listen to clients and figure out how our company can help them
- Then will provide information for designers and engineers, so that they can produce a product for the client
Designing
Origin of Idea

- Our group planned to meet at Wells Library and record the “Design Video”
- We did not reserve a room, so we were forced to use a “first come, first serve” room
- However, the rooms are not distinguishable between “reservation only” or “first come, first serve”, so we did not know if we could walk into an empty room or not
- Also, almost all the rooms, regardless of type, were taken
- We then came up with the idea that it would be nice and smart to have a system that monitors the “first come, first serve” room availability at Wells Library
Design

- Overall Structure: CEO → 3 heads (Design, Consultant, Engineers)
- Future Role: Continue to use and hear feedback to design the UI
Engineering
Programming Language

- We decide we will use Python to create our software (RTWRA) in One.IU. First reason is Python is a very powerful programming language and it has many features that other languages don’t have. Second reason is Python is easily for people to build up a software, it is readability, clear logical code.
- The software can show all room’s status on the RTWRA. It can update data when people swipe their card to check in the room or leave the room.
Software Construction

- We get the data from the sensor (User name, Student ID, Time of register) and use Python File to open the data files sent from every room.
- We name those files with the room number on it and design an algorithm which can identify if there are people in the room or not. We can use Python If..Else to identify if room is empty if the same ID number appears twice. When the ID number appears in the file once, it shows that people swipe his/her card once, meaning they entered the room. When the same ID number appears in the file twice, it means the people swiped his/her card, again, to leave the room.
- The outcome of algorithm will show which room is available and which is not available on the RTWRA in One.IU. Meanwhile, it will display distribution of the rooms of both towers on the monitor in Wells, and beside the room number on the map you can see green light or orange light. Green light means the room is available now and orange light means the room is not available.
Citations

- Photo of Wells Library: https://www.flickr.com/photos/ben-smith/3451690324
We hope you want to join our company and help students succeed!

Any Questions?