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Intro to ITWS – Section 1 Term Project Proposal

The current system for managing office hour help queues is pretty inefficient. Students show up to a cramped classroom, write their name in what little white space is left on a filled-up whiteboard, then wait at a desk until a TA calls them over. These wait times can be excessive – some students feel like they’re better off just staying in a quiet workspace and toughing through what problem they’re stuck on. Office hours are supposed to be as accessible as possible, so this is a problem.

For our final project, we were thinking of making a system to manage office hours / tutoring queues, specifically for coding intensive classes like Intro to Computer Programming and Data Structures. We imagine the system being implemented as an online website that users can logon to with their RCS credentials. TAs will be given access to an admin page that shows which students have currently queued for help and allows for some advanced administrative functions (removing from / adding to / changing the queue). When a TA is available, they’ll check the website for the next student in the queue, scratch the student’s name from the queue, and then call the student over. The website will catalog the duration of the “help session” to calculate an average wait time for other students.

Students will be given access to a simpler page that allows them to add their name to a queue for help in a particular class. They will also be shown how many people have queued in line for help before them and the average wait time for students in the queue.

Lastly, we’d like for our website to record statistics like which students frequently queue up for help and which TAs can help students the quickest, because professors might find this data helpful for things like implementing a participation system or commending outstanding TAs.

There are already various appointment applications that are available for different kinds of users. One example is Appointy, a scheduling application catered towards businesses. Like Appointy, scheduling software is generally targeted at businesses, not to office hour tutoring, and comes with limitations like fixed length appointment times. For example, the scheduling system for the RPI Class Dean’s office, Vcita, requires appointments to be 30 minutes. This approach is fine as most appointments will not go past the 30-minute allotted time but there can be problems when they do.

Static time blocks are a bigger issue when it comes to TA office hours, since their office hours are varying -- generally being an hour or two – and the amount of time taken to help an individual student can vary wildly from a few minutes to more than 30 minutes of constant tutoring. This can result in “traffic jams” where there are many students waiting for the TA or an ALAC tutor for help but a lack of time to get to all the students, or students waiting outside the TA’s office in a line because they arrived at the same time.

We will primarily be focusing our efforts in Area 1: HTML, CSS, and graphics for page layout and design -- making an easy to use and interactable interface for our project that shows a view of which students are currently in the queue is our primary concern. In addition, we’re going to need to update the queue in real time, and communicate this data between the TAs, instructors, and students. This will require us to also focus our efforts in Area 4: Pulling real data from a database.