

Zachry Leadership Program Lecture Scheduler

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1. Weekly Meeting:
Thursday 4:30 - 5:00 pm, via Zoom
2. Related Links
Github: <https://github.com/RuichenNi/TAMU-ZachryLeadershipScheduler>
Pivot Tracker: <https://www.pivotaltracker.com/n/projects/2555575>
3. Project Summary
 - a. This project is about making a scheduling system for the Zachry Leadership Program Lecture class which is related to students' graduation. Since there are about 32 students who have different time schedules, the scheduler needs to find a 2-hour window every week so that all 32 students can get to the class without time conflict.
 - b. The original solution is to enumerate all students' available time slots and try to find the 2-hour window based on that. However, that solution is restricted by the flexible time of students' schedules, therefore, an enhanced solution is to prompt students' input of their class schedules via a user interface, and then save those input to the database and run a scheduling algorithm to find out the 2-hour window. If there is no perfect time slot that every student can attend the lecture, the scheduler will return a list of best choices which is ranked based on the number of time conflicts. Furthermore, if there is still no acceptable solution, the system can figure out which students will not be in trouble about graduation if they are not in the class, and then choose from the ranked list the best time slot to settle the 2-hour class window.
4. Sample User Stories

Most of these user stories are pulled from or based on the user stories of previous teams.

 - a. Feature: Select a common timeslot
As an admin
So that I can decide when to schedule the meeting
I want to see available common time slots of students.
 - b. Feature: Determine almost acceptable time slots
As an admin
So that I can ask students to modify their schedules.
I want to see time slots that work for all but up to 4 students.
 - c. Feature: Login to the system
As a student
So that I can submit my schedules
I want to be able to login to the system

d. Feature: Get notified of feedback

As a student

So that I can know which students should have their schedules modified to create a timeframe

I want to get quick feedback

e. Feature: View my schedule

As a student

So that I can see the schedules I've input into the system

I want to be able to view my schedules.

f. Feature: See which students have submitted their schedules

As an administrator

So that I can know when to run the algorithm

I want to see which students have submitted their schedules

g. Feature: Rank list of time slots

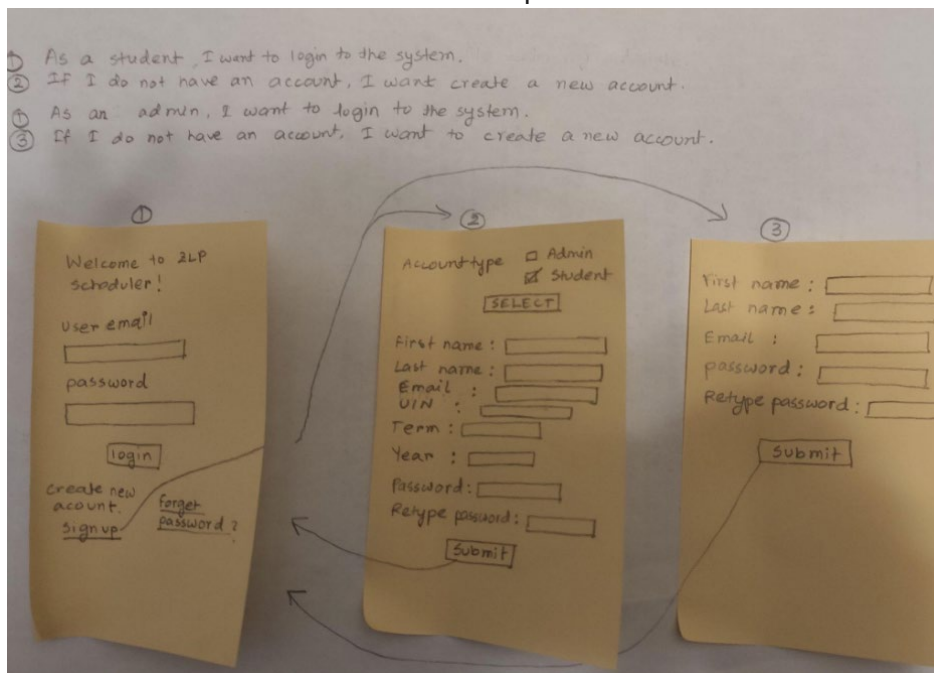
As an administrator

So that I can fetch a list of time slots with ranking

I want to see all feasible time slots in order to make my choice

5. User Interface

Most of the interfaces are based on the previous teams.



④ After I login as a student, I want to enter my schedule

④

Hi username,
My Profile | logout

Add / Edit my schedule

My schedule :

Mon				
Tue				
Wed				
Thu				
Fri				

Save

Cancel

⑤ After I login as an admin, I want to select a cohort from available cohorts to run ZLP optimal scheduler algorithm.

⑥ After I ran ZLP optimal scheduler algorithm, I want to see all non-colliding time slots and select from one of these time slots to assign to the current cohort.

⑤

Hi user_name,
Profile | logout

Select Cohort: 1/2/3

select

Name	VIN	Schedule
ABC	123	123_schedule
DEF	456	456_schedule
...
...
...

Run ZLP scheduler

⑥

Hi username,
Profile | logout

showing non colliding times for Cohort_#no

Time 1:select time

Y/N

Time 2:

Y/N

Time 3:

Y/N

Assign selected time for this cohort

Save

6. Legacy Code

'Zachry Leadership Program' project is a legacy project and 3 teams previously worked on it. We have already accessed their Github repositories and analyzed their works closely to get ideas about their approach. During our first meeting with the customer of this project, Mr. Seth Sullivan, we had a brief discussion about the whole ideas of the project with him. Upon our discussion with him, we have decided to add a few minor utilities to the system, such as ranking and filtering, keeping the backbone of the framework unchanged but our primary focus will be coming up with a working algorithm that will serve the main purpose of the project, which is finding an optimum time slot where all the students of a cohort can participate in the class.

As we will be using most of the design schemes of the previous project and building on

it, it is important for us to study the previous work and deploy the existing app on Heroku first. We are currently working on deploying the project and exploring different aspects of the front end and back end of the project. While most of the user stories will be similar to the previous versions of the project, our approach to meet the demands of the user stories will be modified as we go. One other aspect of our current task will be to investigate the limitations of the previous algorithm and come up with an alternative and more robust algorithm to solve the problem.

Besides those already existing features, after the first meeting with Mr. Seth Sullivan, we decided to add a ranking system that would return a list of time slots if there is more than one available time slot so that the administrator could have the opportunity to choose the best one. Another extra feature if applicable is the feedback from students that indicates the impacts for them if they don't register in the class this semester. This new feature would help the administrator make decisions if there is no feasible time slot that every student could come to class, therefore, the administrator can choose a time slot from the time slot list that has minimal impact on the student's graduation.