APlanner

Problem Statement

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# Executive Summary

This document's purpose is to describe the problem that our project will solve with several sections --- a high level problem summary, a detailed problem statement, and some information about the stakeholders. Many other documents, including an Entity Relationship (ER) diagram, will be included.

Registration can be an annoying process for both students and professor. Professors have to plan class sections first, but they don’t know what students want and need to take. We propose a program to provide a channel for students to input their plans ahead of time, professors will be able to schedule classes accordingly. Then after class sections are decided, students have to register. Students can find section information in the schedule-look-up page, but they don’t know other students’ plan. We propose a program to help students share their plans prior to registration date. Therefore, students can choose the section with less students and make room for those who have conflicts. It also make it easy for students, who want to work together to register the same section.

We are also considering many additional features that can make course scheduling even easier, like messaging, comments and rating, broadcast within a section. However, we might not have enough time to implement them in the end. This project is very resizable.

# Introduction

This document is the document describing our course scheduling system. It includes an ER diagram. Besides this document, there are a relational schema, a security analysis, some periodic reports and a final presentation. This document will give an overview of the system, what it requires and it can do. The security and data analysis will be more detailed as to the implementation of the system. The relational schema will describe the database and foreign key constraints based on the ER diagram. The final presentation will demonstrate the completed system, as well as describing the process we used in creating the system.

# High Level Problem Summary

## Elevator statement

We are designing a brand new schedule planner to inform professors with students’ intentions and provide students with other students’ plan. With students’ intentions, professors can make better courses schedule. Knowing others’ plans, students can better coordinate with each other. It is a common problem for students to have conflicts and capacity problems. Students with flexibility can choose a section with less capacity pressure and make room for those with less flexibility. Many students want to work together. With this program, students can check partners’ current plan at any time. Our program can dynamically provide both students and professors with sufficient information and ease their decisions.

## Summary of the primary success criteria

Our purpose is to write a schedule planner which is both fancy and useful. The database will import data from the school courses’ data. With such a big amount of data, it is crucial to improve query efficiencies of retrieving and filtering schedules. Database also need to be secured. Password of students’ and professors’ account need to be properly encrypted and user input needed to be preprocessed. Since this program is made to facilitate planning, we need to have an intuitive front-end interface and mobile friendly site.

## A description of the scope of the project

### Within Scope:

1. Student earlier planning
2. Professor course arrangement
3. Student registration process
4. Schedules comparing
5. Course rating

### Outside Scope:

1. Teaching manipulation
2. Grades

# Detailed Problem Statement

## FUNCTION

* User related operations
  + Login, Logout
  + Make friends
  + Send messages to friends (optional)
* Plan related operations
  + Create a plan (courses that want to take)
  + Present aggregate plans (number of student want certain course)
  + Search for schedules matching the plan
* Schedule related operations
  + Display weekly schedule information
  + Save and post schedules with priorities and possibilities.
  + Compare schedule with friends, display common sections
* Course related operations
  + Display courses information
  + Calculate the number of students intended to take certain section.
  + Warn the user who tries to register classes without proper prerequisites
* Professor related operations (possibly if have time)
  + Comments about each professor
  + Post class announcements (not yet include in the ER diagram)

## FORM

### Availability

* Web based, for large amount of content.
* Mobile friendly, for convenient access for students and professors

### Usability

* Easy to learn and use
* Well defined and intuitive interface
* Useful help text and error messages

### Performance

* Efficient searches and queries
* Fast response times

### Security

* Password protection for student account
* Proper type of encryption to protect password.

### Maintainability

* Self sufficient maintenance
  + Professors can change schedules of classes
  + Students can change their plans and potential schedules
* Administrator’s responsibility
  + Modification to offered curricula
  + Modification to prerequisite requirements

## ECONOMY

This project has potential possibility to replace our schedule-up-page. Many colleges and universities need a nice planning tools to assist registration process. Big universities have to coordinate large number of students and professors in the process. Not everyone can input their plans and there are not enough registration officers to help solve their issues. Our program can not only provide professors with students’ early plans and also guide students to sections with less capacity pressure. Our APlanner can greatly improve the efficiency of registration process and save time and resources.

# TIME

## Historical In the past

Students probably registered for classes with paper in the past. It was extremely inconvenient, error-born and labor-intense.

## Current

Students can access information about courses online in the schedule-look-up page. However, no information and status of others students can be found there. This site updates only several time per day, its content is static and hardly.

## Future In the future

The schedule planner in the future should efficiently assist both professors and students to schedule courses and register efficiently. It can provide both sides with useful and dynamically updating information in a nice and intuitive interface.

Students can make future plans in advance, while professor can make course scheduling changes based on feedback from students’ plan. Students will be able to dynamically access their friends’ plans, professor’s rating. Students can directly contact their friends about their plans.

In the future, our APlanner can even move towards a on-campus facebook to build a more connected campus environment. Students can not only make and share their studying plans and find teammates, but also start technical discussion within a section, share career informations and even start a club themselves and schedule regular meetings.

# ER diagram

