

APlanner

Problem Statement

RHIT — CSSE 333

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Version Information

Version	Date	Comment
1.0	01/20/2016	Initial Draft
2.0	02/10/2016	Update depends on instructor feedback

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. An appendix is included at the end of the document containing the final entity relationship diagram and relational schema diagram for the project database. Many other documents, including an Entity Relationship (ER) diagram, security analysis will be included in other documents.

The main idea of APlanner comes from the inefficient course planning and registration process. The old approach usually cannot meet the needs of students very well. Often times, there are over-filled sections and half-empty sections at the same time. **We propose a program to share students' plans prior to registration.** It can inform the professors of students' need so they can make better plans. It also help students to share plans and form study groups and teams ahead of time.

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

At most colleges, the professors schedule sections first and then let students to choose. This traditional approach is not very efficient because the professors often cannot predict students' plans very well. Often times, there are over-filled sections and half-empty sections at the same time. We are designing a planning program, APlanner, **to share students' plan to professors along with other students.**

APlanner can help professors learn the demand for certain course ahead of time and make appropriate number of sections accordingly. There will be fewer over-filled and half-empty sections.

APlanner is also a **helpful tool for students to organize their plans.** It keeps track of multiple prioritized plans prior to registration. When one plan does not work out for some reason, they can always find a backup plan. Students can even see who plan to take the same section and form team prior to registration.

Summary of the primary success criteria

Our purpose is to write a useful schedule planner. The database will contain a huge database for student records. We need to keep track of information related to students, courses and professors. It is essential for us to build a reliable and efficient database to support intense data operations. Our database also needs to be secured. Password of students' and professors' account need to be properly encrypted and user input needed to be preprocessed. We need to create separate views and specify different set of allowed operations for each kind of user, like professor and student. 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-look-up-page. Many colleges and universities need a nice planning tool to facilitate registration. 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

Students probably registered for classes with paper in the past. It was extremely inconvenient, since the registration officers have to keep track of thousands of paper files. It is time-consuming to retrieve and modify certain records.

Current

Students can access information of courses online through the schedule-look-up page. The professors have to estimate students' plans in order to make the schedule. In many cases, they

schedules too much or too few sections. It is hard for students to find other students' plan until the their schedule are already decided. Students have to use use messages to find teammates or lab partners. When plans changed, it often really hard to come up with a new plan and let friends know those changes. Since there are too big amount of information, it is expensive to keep live data online all the time. So the site only updates a few times per day. Sometimes the changes are not shown immediately.

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.

Key Stakeholders

Name	Role
Aaron Wilkin	Project Advisor
Fred Zhang	Project Team
Mercury Ding	Project Team

Appendix

ER diagram

