AnteaterAcademics Design

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Agenda for this meeting, list of agenda items:

1. Divide different parts of the document and assign them to each group members
    a. **Outcome:** We decided to finish out first draft before the end of 16th. We will be using 17th as the last checkpoint for document reviewing**.**
2. Set a date for everyone to finish their parts by so we can go over everything and fix any problem that we see and add anything that is missing.
    a. **Outcome:** Everyone was able to finish their parts before the next discussion date where we were able to go over the assignment and clean up some of the missing parts.
3. We were able to finish our first draft before Sunday.
4. We finished and did a final review session on Sunday.

Plans for next meeting

1. Have all team members complete most, if not all, of their assigned parts of the assignment so that we can all review the finished product together.
2. After reviewing the assignment, fix or change any parts that we all agree upon.
3. Try to have everything complete and ready for submission.

Gaps and Assumptions

1. We are assuming counselors are able to quickly change between multiple students, so facilitating a student's time to meet with a counselor is still efficient
2. We are assuming professors are willing to meet with students outside of lecture time and office hour time
3. We are assuming professors are open to teaching more lectures of the same thing, but to fewer students each time and with a different teaching method
4. We are assuming that professors are willing to operate AnteaterAcademics on top of everything else they do
5. We are assuming the school administration is open to giving professors more time to teach and access to unused classrooms on a regular basis
6. We are assuming that school administration is open to giving professors the ability to add and drop students from his/her class
7. We are assuming school administration is open to purchasing upgrades to the server
8. We are assuming that the software can not be accessed without internet connection.
9. We are assuming that the vast majority of the users are undergraduates.
10. We are assuming users will forget their system login information.
11. We are assuming that users are willing to link and verify their phone number to their account in order to gain 2-step verification and password reset options.

Field Notes:

- Elicitation Notes (A5 Appendix)

- Customer team review notes: https://docs.google.com/document/d/1rFX3dS3_fqUHbBrBbbxAp-_dQj8RvCJP345pJxdfqUc/edit?usp=sharing

1. Introduction:

The purpose of Anteater Academics is to provide an efficient, easy to use, and consolidated method of registering for classes for UCI students. The current method not only requires the use of several different sites but also is not very user friendly. Students are required to navigate several different sites, one to know which classes are being offered in their current quarter, one to find out the prerequisite classes to classes they wish to take, another to actually enroll in said classes, and a final page to help visualize their schedule and ensure that none of their classes clash with one another. Our goal is to condense all the information into one, easy to operate and manage site to facilitate the enrollment process for both the counselors, professors, and students.

1.1 Scope:

AnteaterAcademics is a website designed to keep all relevant information pertaining to enrolling for classes in a single, condensed site. Therefore, this application must be open to students, counselors, and professors. The students will have a single site where they can research all important information about their classes, view their potential schedules, and enroll for their classes. Counselors will also be able to access this site with different permissions. They can alter any student's courses, modify the class itself, and even view a student's previous courses. Similarly, professors can add and drop students, but only to classes they are teaching. Since this is a website and not an application, it can be accessed by any device with internet connection, regardless of location, thus international and out of state students will not be at a disadvantage due to their location.

The primary functionality provided to students are:

- Enroll for classes from anywhere in the world
- View classes offered in the upcoming quarter
- View a possible schedule given a set of classes
- View prerequisite and corequisite classes for any given course

The primary functionality provided to counselors are:

- Enroll or drop students from classes
- Manipulate class size and add new classes
- View a student's transcript

The primary functionality provided to professors are:

- Add or drop students, but only for classes the professor is teaching
- View a student's transcript

1.2 References:

This website is loosely based off of reg.uci.edu/perl/WebSoc, the UCI's website to display what classes are being offered in the upcoming quarter, taught by whom, and general information such as location, lecture and discussion times, and final day and time. In addition, we have tried to take the information off of webreg.uci.edu so that students can register for classes on AA. We also take information off of the UCI Catalogue so that students are able to view class prerequisite and corequisites for the classes they wish to take, and from antplanner.appspot.com so that students are able to view tentative schedules as they build their possible schedules before their enrollment period.

1.3 Definitions and Acronyms:

Acronym	Definition
AA	AnteaterAcademics
ASL	AnteaterSocialLife
EEE	Electronic Education Environment
UCI	University of California, Irvine
FR	Functional Requirement
NFR	Non-Functional Requirement

1.4 Overview:

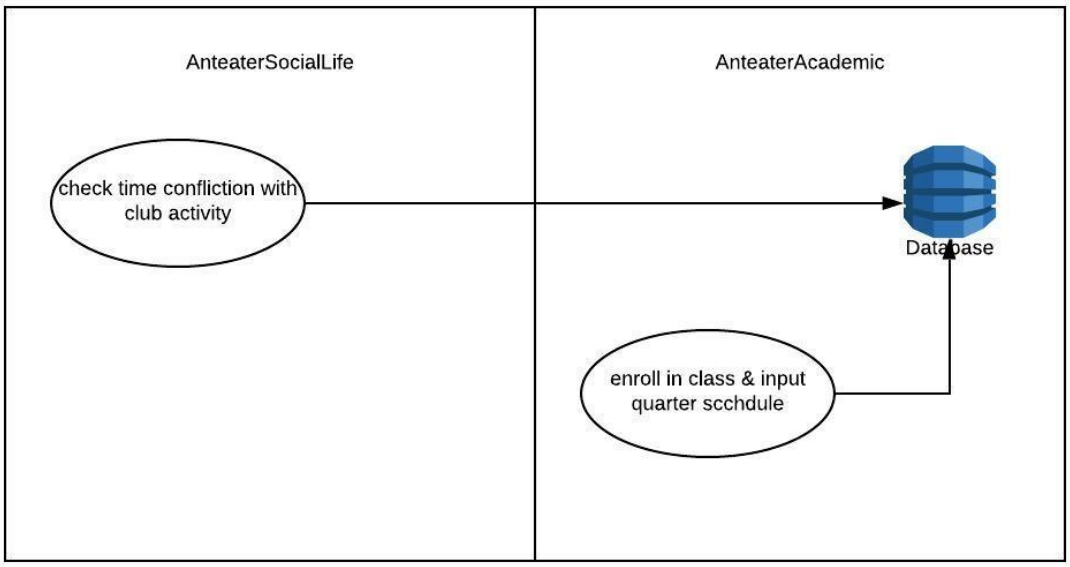
AA is a website that allows students from anywhere in the world to not only enroll for classes, but also view prerequisite for potential classes, view a possible schedule they are building, and view classes that are being offered in the upcoming and previous quarters.

2. Pain points and Redesigns

AnteaterAcademics incorporate academic features that are currently available through the reg.uci.edu for students, professors, and staffs. Currently, the website only supports academic information management for both students and academic counselors. If a professor wants to address certain class management issue, they have to work with a academic counselor who has access to the system. Current system has limited functionality for professors. At the same time, the system does not allow student to schedule meetings for academic directly. Students have contact the department office through the phone. The new system aims to provide more features allowing various interactions between students and their academic counselor(s) such as having online meetings through live chat. Also, the new system will incorporate "Schedule of classes" and WebReg system's contents to improve student's class enrollment procedure.

2.1 Product Perspective:

The AA will be a part of Anteater Campus Life package which includes both AnteaterSocialLife and AnteaterAcademic. Two system will share the general user data such as Student's NetID and student's quarter plan. AA will collect and store the student quarter schedule data into database which will be shared with ASL. From that database, the ASL will be able to check for student's quarter schedule in order to remind students the potential time confliction of their club activities. The following diagram will explain the system view of both applications as whole in order to best show the correlation between two systems.



2.2 Product Functions:

- Students shall be able to create academic plans that are efficient: the result academic plan should accurately based on:
  - planned course offerings
  - major requirements
  - prerequisites
  - minimizing student graduation time (if desired).
- The system shall include an intelligent academic plan recommender that takes:
  - a student's current status
  - a student's future goals.
- Students shall be able to:
  - enroll in classes
  - interact with academic counselors through the tool, such as getting their feedback on academic plans, chatting, etc.
- Counselors and administrators shall be able to:
  - add, edit, and delete course info, degree requirements, prerequisites, etc.
  - view student info
  - generate reports about enrollment.
- The system shall allow academic counselors to disseminate important info to the appropriate student populations such as:
  - increased class capacity

    - classes added/deleted
    - class time/date changes
    - etc.
- Faculty(staffs) shall be able to see enrollment statistics (i.e., like WebSOC).
- The system shall be scalable enough to function reliably during high traffic periods (i.e., enrollment windows opening).
- The different features of the system (academic planning, enrollment, counselor interaction) shall be fully integrated, allowing users to:
    - transition seamlessly from one to the other
    - use information from one feature in another one (e.g., automatic enrollment based on an academic plan).

2.3 User Characteristics:

- Student
    - These users should have the medium access of the system.
    - These users should be able to access/manage their individual data sets such as class schedule
- Academic counselor
    - These users has the highest access to the system and are able to modify individual user information with certain permission kind.
    - These users will also be able to modify the general class info.
- Staffs
    - These users has various level of access to the system based on their roles.
- School administrative
    - These users should not have direct access to the system.
- OIT staff
    - These users should have the highest access to the system.
    - These users can only change the structure and technical perspectives of the system. They are not able to make changes to a specific individual.
- Professor
    - These users has limited access to the system. Most of the actions that this user kind is able to performs should be permitted by the Academic counselor.
- Other (relatives)
    - These user should not have direct acess to the system

2.4 General Constraints:

- The maximum number of concurrent users the system can handle is 20,000.
- The user may access the system through Android or iOS devices, or through any web-based browser.
- The project has a $500,000 budget.
- Must be finished before the start of the next school year, Fall 2019.
- The system should be easy to navigate through and use, while not requiring any additional security softwares.
- The system should avoid putting restrictions on the students as much as possible. So students should be able to meet with counselors even if they haven't used the intelligent recommender yet.

2.5 Assumptions and Dependencies:

- Users of the system are UCI students and faculty.
- The mobile and web based versions of the system should act similar in what they are capable of doing.
- The system should be accessible through all web browsers.
- Assuming that students will be using the AnteaterAcademics in increments of about ten minutes.
- Assuming that students are using DegreeWorks and WebReg to help with their academic schedule planning.

2.6 Apportioning of Requirements:

- Currently AnteaterAcademic users can only use the system in English, but as future versions are released, the system will start to accommodate more languages.
- Upgrading server size in order to support the growing student body and faculty.
- Improvements to online communication with counselors.
- Integrating DegreeWorks and the UCI catalogue into the system.
- The addition of new majors to the system, as they come up.

3. Essential Requirements

This section specifies all essential requirements and a detailed description of the system.

3.1 Essential Requirements:

3.1.1 Functional Requirements:

ID: FR1
TITLE: Facilitate Student Interaction with Counselor and Respective Information
DESCRIPTION: The system shall be able to provide student users with the means to obtain information for class registration either from the system itself or counselors
USE CASE: Usage Model
SOURCE: Elicitation Questions 7, 8, 9, 10, 13, 14
FIT CRITERION: User is successful in finding classes to register for
RATIONALE: Due to the many classes available, students should have an easier time accessing the information they need to find the correct courses to register for
DEPENDENCIES:
SUPPORTING MATERIAL: Goal Model 6, Stakeholder Model
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR2

TITLE: AnteaterAcademics Account Security
DESCRIPTION: Users shall be able to login to the system with their UCINet ID
USE CASE: Usage Model
SOURCE: Elicitation Questions
FIT CRITERION: The system checks the user's login information and status with UCINet and confirms the validity of them
RATIONALE: Student's information should be secure to prevent malicious use
DEPENDENCIES: None
SUPPORTING MATERIAL: Domain Model
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR3
TITLE: Schedule Outside Meeting Between Student and Professor
DESCRIPTION: Student users shall be able to set up meetings between them and their professors in order to ask them questions or receive help
USE CASE: Usage Model
SOURCE: Elicitation Questions
FIT CRITERION: The user successfully manages to set an appointment with their professor
RATIONALE: Student's should be able to easily find times to meet with their professors if they have additional questions
DEPENDENCIES: None
SUPPORTING MATERIAL: Goal Model 3
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR4
TITLE: Allow for Easy Software Updates & Changeability
DESCRIPTION: The system shall be written in a way that accommodates new changes to the software
USE CASE: Usage Model
SOURCE: Elicitation Questions
FIT CRITERION: OIT and software developers are able to make changes to the system with low-cost (time/money)
RATIONALE: As the school expands their class list, students, and many other factors will grow in size. The system must be written in a way that makes it easy to accommodate the school's growth
DEPENDENCIES: FR5
SUPPORTING MATERIAL: Goal Model 1
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR5
TITLE: Allow System to Handle Extremes
DESCRIPTION: During peak periods of use the system shall be able to handle a large influx of users at one time
USE CASE: Usage Model
SOURCE: Goal Model 4

FIT CRITERION: The system does not crash during peak usage periods
RATIONALE: As the school increases in size there will be more pressure on the system to handle extreme peak user counts. The system should be ready to handle those cases
DEPENDENCIES: FR4
SUPPORTING MATERIAL: Goal Model 4
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR6
TITLE: Streamline Counselors Ability to Give Counseling to Students
DESCRIPTION: Student users should be able to easily access counselors for help with academic planning
USE CASE: Usage Model
SOURCE: Elicitation Questions 7, 8, 9, 11
FIT CRITERION: Student is able to gain access to counselors more easily than before
RATIONALE: Students have many classes to choose from and will most likely need help from an outside source for help on choosing classes
DEPENDENCIES: FR1
SUPPORTING MATERIAL: Goal Model 6
HISTORY: Raised by Snoring Pandas on February 19, 2019

3.1.2 Non-Functional Requirements:

3.1.2.1 Maintainability
AnteaterAcademics will be used for years to come. There will be improvements, modifications and innovations that arise where AnteaterAcademics will need to be updated and improved. This is where maintainability comes in. If any bugs or defects arise, they need to be corrected. AnteaterAcademics should be able to be repaired without having the whole system being replaced. The working parts shouldn't be altered.

3.1.2.2 Performance
AnteaterAcademics is a big system that will have many users. At times there will be a lot of traffic. The system needs to have great performance in order for everything to run smoothly. AnteaterAcademics will have a short response time. The data compression and decompression should be fast. The data transmission time should be short.

3.1.2.3 Reliability
AnteaterAcademics must be reliable. All links to their respective separate pages much actually direct the user to that page or the information they are looking for. If the OIT department makes a change then the change should be reflected in the system.

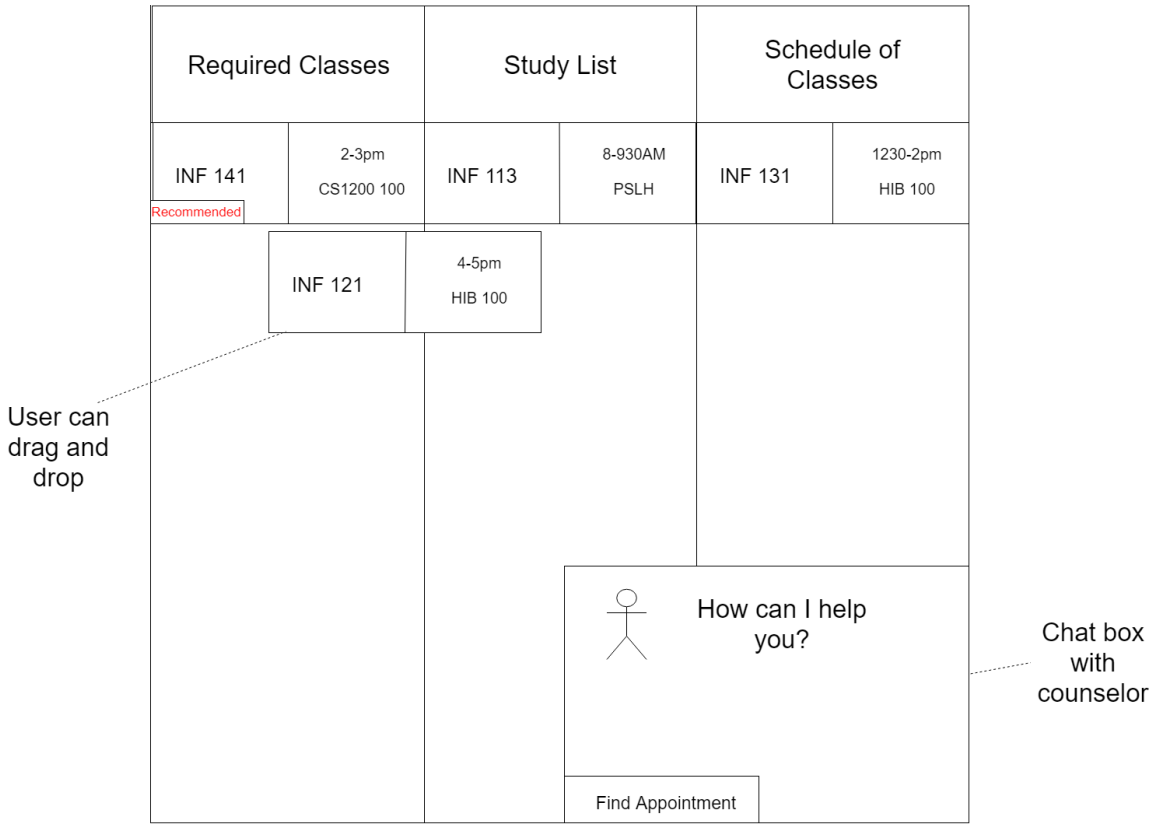
3.1.2.4 Security
The client was very specific on security. Security when dealing with AnteaterAcademics, there should be levels of access in relation to the academic admins and students. The students should not be allowed access to information of other students. Academic admins should be allowed access to students' information. The system should be able to differentiate the active user and know who they are and what classes of information pertain to the active user.

3.1.2.5 Scalability
AnteaterAcademics is a large system that will be used by many users at a time. With the growing population of students increasing each year, the system needs to be able to direct traffic at peak hours such as enrollment windows and fee deadline time periods. The system will need more storage as the years progress due to the gradual increase in population of students.

3.1.2.6 Usability
AnteaterAcademics should be easy to learn and use. The user should not have trouble navigating from page to page when looking for what they need. The system must be intuitive and interactive. The students should prefer this new system over the old system.

3.1.3 External Interface Requirements:
This section will provide a brief prototype of the expected user interface, as well as descriptions for the hardware and software communication

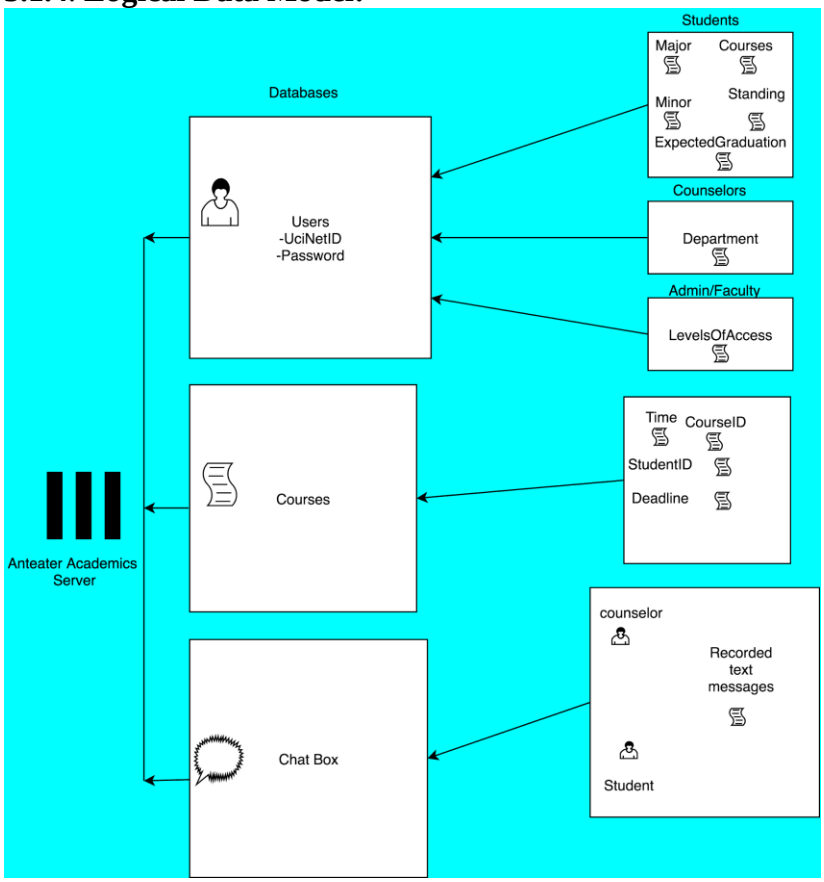
User Interface:
As shown in the figure below we expect the website to use a drag and drop interface as shown below. Users will have three major blocks where classes are displayed. The central block is the classes the user is registered for. Users can drag and drop classes from both the required courses and schedule of classes into their study list to register. Classes will have some general information such as time and place. The required classes will also have recommended classes by the intelligent recommender marked. At the bottom right will be a chat box with a counselor if the student requests for help with an option to setup an actual appointment.



Hardware Interfaces:
Because the software is expected to take a website form the only major requirement is that the website be mobile-phone friendly as asked in Elicitation Question 15.

Software Interfaces:
The software will be expected to interface with UCINet logins similar to other software controlled by UCI. Other systems may need to interface with the software to access a student's study list although those systems are currently unknown.

3.1.4. Logical Data Model:



The data stored in the database will be separated out by the various filters:

Users:

- All users will be equipped with a NetID and a Password.
- There are 3 different types of users; Students, Counselors, Faculty/Admin
- Student profiles contain their major, minor, expected graduation date, academic standing
- Faculty profiles contain the levels of access.
- Counselor profiles contain the department they are affiliated with.

Courses:

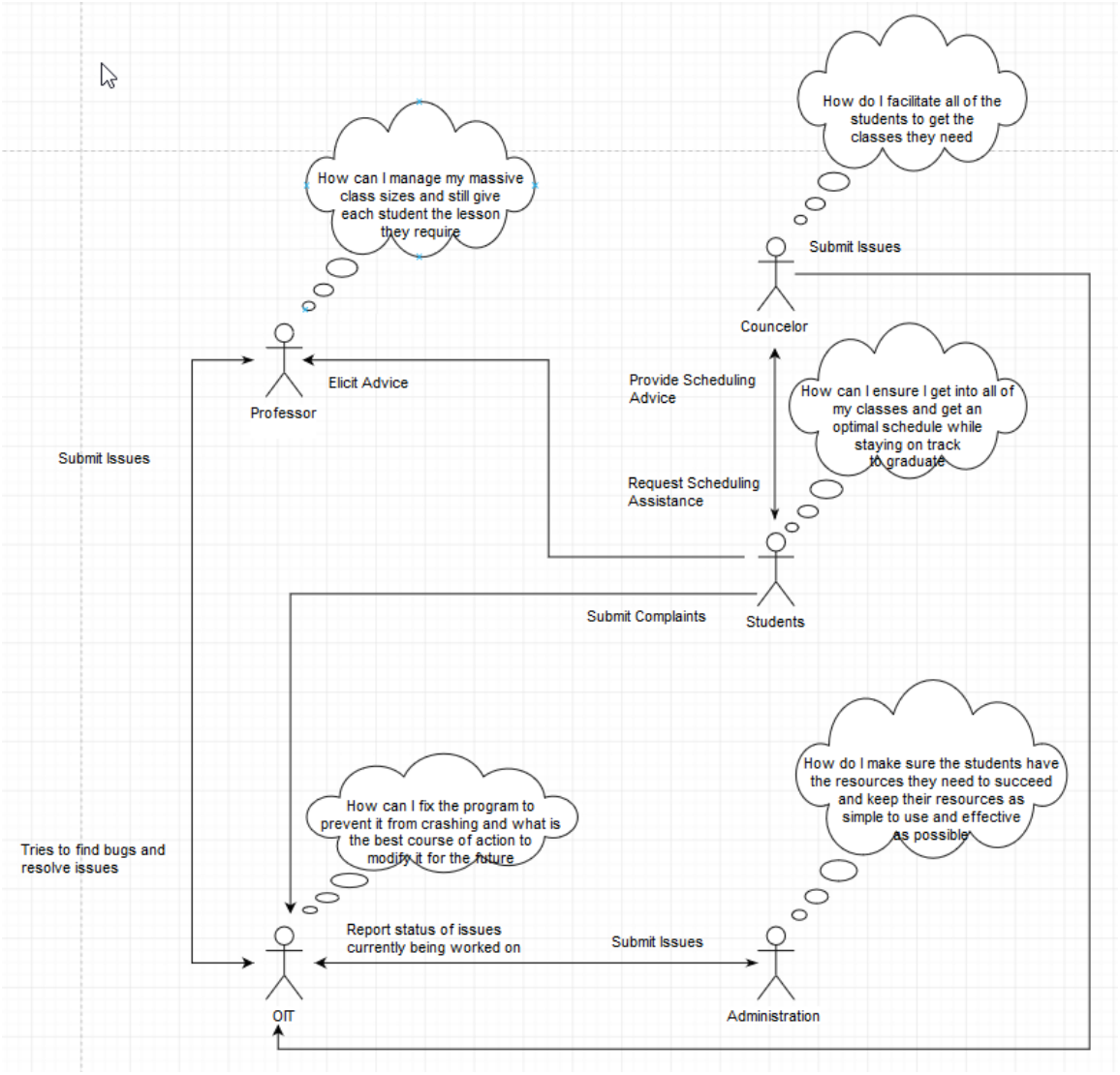
- Courses are held in the database.
- Courses include the time of the course, student ID, course deadline, course ID.

Chat Box:

- The messages through the chat box will be recorded and stored in the database.
- Interaction between counselor and student.

Appendix:

Appendix 1. Stakeholder Model:



Stakeholders:

- Students
    - Priority: 1
    - Relation to other stakeholders:
        - The student will register to certain class under a certain professor
        - The student will be using the product maintained by OIT
        - The student will use the information or suggestions provided by the school counselor.
    - Area of expertise/knowledge and level of expertise in that area:

        - Student expertise in the area based on their school years.
        - Normally a student has limited knowledge in academic planning.
        - Students normally need some guidance for academic planning.
        - Students normally can easily master class registration.
    - Primary concern(s) as it relates to the system
        - If the new system is easy to use.
        - If the new system will help them saving time while registering classes and planning academic schedule.
        - The result of the planned schedule should allow students to graduate online
- Professor
    - Priority: 4
    - Relation to other stakeholders:
        - Professors will be able to view and send notifications to students who are enrolled in their classes.
        - Professors will be using the product maintained by OIT/
        - Professors will work with counselors in creating course requirements and prerequisites.
    - Area of expertise/knowledge and level of expertise in that area:
        - Professor expertise is in managing big class sizes.
        - The professor should have knowledge of uploading necessary files to the correct students.
    - Primary concern(s) as it relates to the system:
        - How easy is it to communicate with students through the system.
        - How easily will students be able to search through and find the necessary documents for the class?
        - If students have met all prerequisites to be enrolled in their class.
- OIT
    - Priority: 3
    - Relation to Stakeholders:
        - Debugs and prevents platforms from crashing so the system is usable.
        - Allows access of student portals to counselors.
        - Finds bugs and adheres to issues from the system given by the professors.
    - Area of expertise/knowledge and level of expertise in that area:
        - System based.
        - Debugging/fixing problems that arise.
        - Making sure the system runs perfectly.
    - Primary concern(s) as it relates to the system:

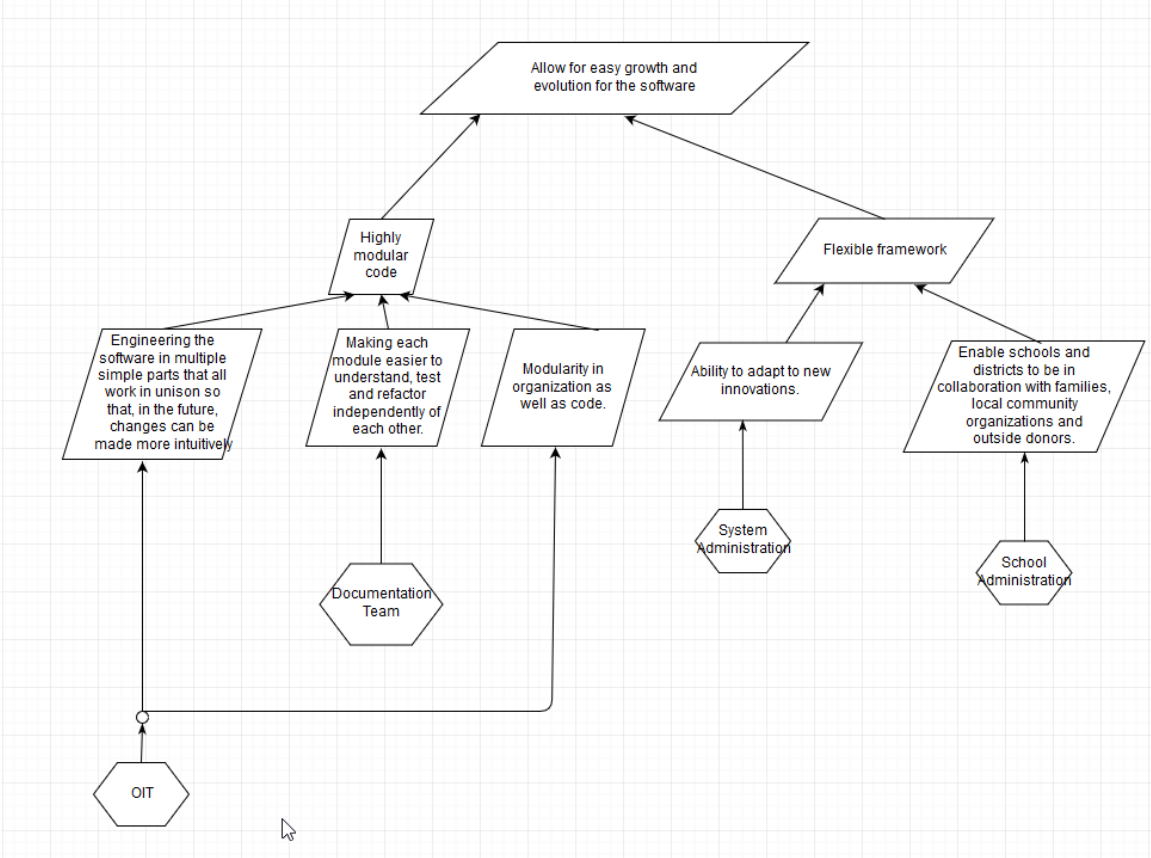
        - Making the new system interactive, intuitive and easy to use.
        - Making sure the new system allows users to save time and increase performance issues from the old system.
- Counselor
    - Priority: 2
    - Relation to other stakeholders
        - Counselors will work with professors in creating course requirements
        - Counselors work with students to help with their academic planning
        - Counselors will use the product being maintained by OIT
    - Area of expertise/knowledge and level of expertise in that area:
        - Better knowledge of course catalogue and information
        - Knowledge of an ideal path for degree requirements
    - Primary concern(s) as it relates to the system:
        - Tech-sav, some counselors may not be tech-savvy and as easy to adapt to the new change

Stakeholders:

- Students
- Professor
- OIT
- Counselor
- Administration

Appendix 2. Goal Models:

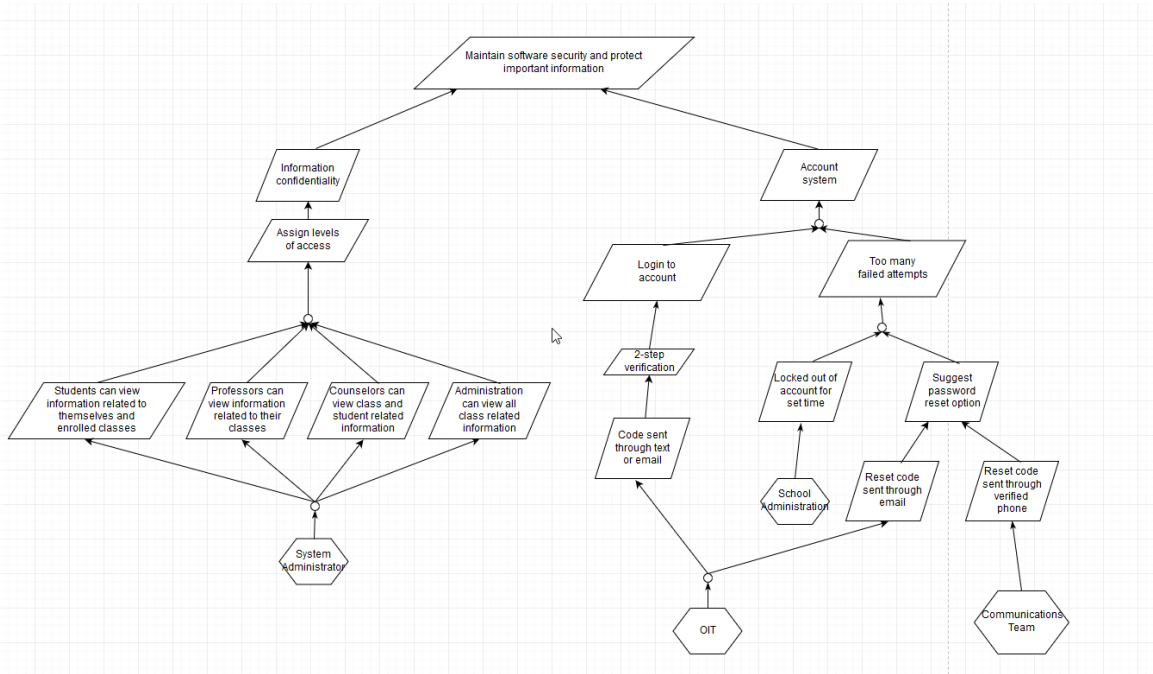
Goal #1: Allow for easy growth and evolution for the software



1. Name: Facilitate student's ease of use when operating the software and enrolling in classes
    a. Definition: This goal aims to ease the difficulty and stress that comes with enrolling in classes
    b. Source: Question 7, 8, 13
    c. Category: Achieve
2. Name: Streamline counseling process
    a. Definition: This goal aims to facilitate students meeting with counselors and maximize the number of students a counselor can meet with
    b. Source: Question 9, 10
    c. Category: Soft
3. Name: Add intelligent recommender for classes
    a. Definition: This goal aims to minimize the need for counselors and provide the students with all the information necessary to create a 4 year plan and establish the classes they should take
    b. Source: Question 7

    c. Category: Achieve
4. Name: Condense registration information
    a. Definition: This goal aims to minimize the number of tabs and complexity required to operate the software and sign up for classes
    b. Source: Question 7
    c. Category: Achieve
5. Name: Add class registration
    a. Definition: This goal aims to minimize one of the tabs necessary to operate the system and allow the user to view available classes with the respective codes while enrolling for class on one tab.
    b. Source: Question 8, 13, 14
    c. Category: Achieve
6. Name: Add academic planning
    a. Definition: This goal aims to minimize one of the tabs necessary to operate the system and allow the user to view his/her 4 year plan and adjust his/her 4 year or current classes accordingly.
    b. Source: Question 8, 13, 14
    c. Category: Achieve

Goal #2: Maintain software security and protect important information



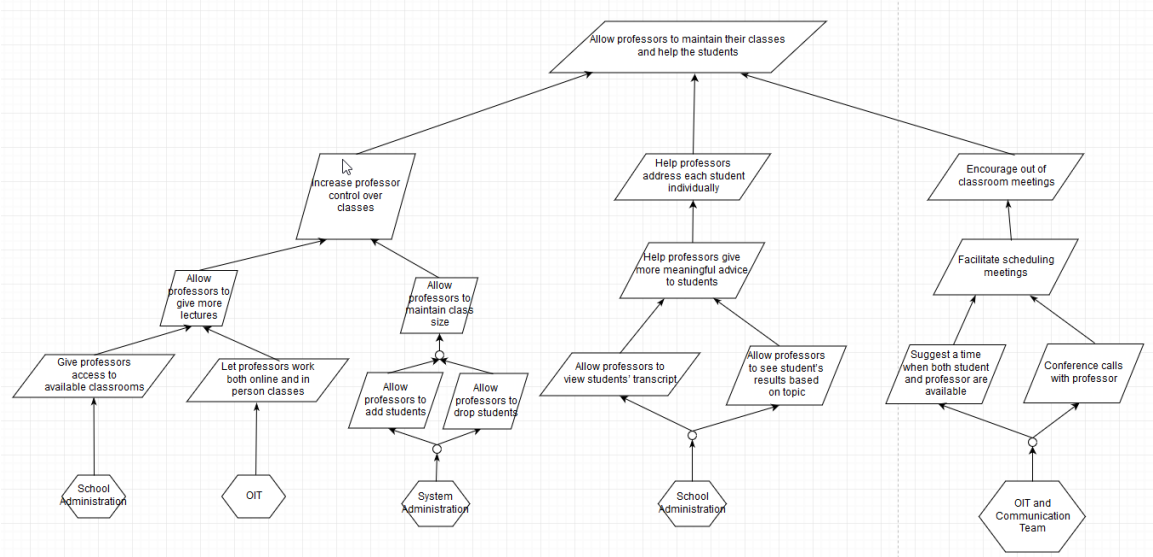
1. Name: Maintain software security and protect important information

    a. Definition: The system should be able to differentiate and assign different levels of access depending on the type of user, while keeping user information secure.
    b. Source: Question 26
    c. Category: Achieve
2. Name: Information confidentiality
    a. Definition: Depending on the user, the system will restrict access to information that is above the user's level of access.
    b. Source: Question 26
    c. Category: Achieve
3. Name: Assign levels of access
    a. Definition: There should be an account system that assigns users a level of access depending on which type of account they are given.
    b. Source: Question 22, 26, 33
    c. Category: Achieve
4. Name: Account type: student
    a. Definition: Students should be able to view and submit files in enrolled classes.
    b. Source: Question 22, 26, 33
    c. Category: Maintain
5. Name: Account type: professor
    a. Definition: Professors should be able to access all class related content, such as uploading class files and viewing student assignment submission.
    b. Source: Question 22, 26, 33
    c. Category: Maintain
6. Name: Account type: Counselor
    a. Definition: Counselors should be able to view student graduation process in order to better help them create a graduation plan.
    b. Source: Question 22, 26, 33
    c. Category: Maintain
7. Name: Account type: Administration
    a. Definition: Administration should be able to view all class related information.
    b. Source: Question 22, 26, 33
    c. Category: Maintain
8. Name: Account System
    a. Definition: Users should feel that their information is secure within the system, and would be notified if anything suspicious was going on with their account.
    b. Source: Question 28

    c. Category: Achieve
9. Name: Login to account
    a. Definition: Users would use their assigned username and password to login. After the first login, users are given the option to change their passwords.
    b. Source: Question 26, 28
    c. Category: Achieve
10. Name: Too many failed attempts
    a. Definition: There are security measures set in place should a user's account have multiple failed sign in attempts.
    b. Source: Question 28, 30
    c. Category: Achieve
11. Name: 2-step verification
    a. Definition: In order for accounts to be more secure, users will be sent a 6 character code that they will need to input after entering username and passwords.
    b. Source: Question 28
    c. Category: Soft
12. Name: Locked out of account for set time
    a. Definition: Should a user continuously fail to sign in, the system will lock their account for a short time as it contacts the user to see if it is them trying to sign in.
    b. Source:
    c. Category: Achieve
13. Name: Suggest password reset option
    a. Definition: If a user has multiple failed login attempts, the system will suggest a password change option.
    b. Source: Question 27
    c. Category: Achieve
14. Name: Code sent to text or email
    a. Definition: For the 2-step verification, users can choose to receive their code through text message or email.
    b. Source: Question 33, 35
    c. Category: Achieve
15. Name: Reset code sent through email
    a. Definition: If a user chooses to reset their password, they can do so through email where they will be sent a link that will allow them to reset their password.
    b. Source: Question 33, 35
    c. Category: Soft

16. Name: Reset code sent through verified phone
    a. Definition: Users can also reset their password through verifying a code sent to them through text message.
    b. Source: Question 33, 35
    c. Category: Soft

Goal #3: Allow professors to maintain their classes and help the students

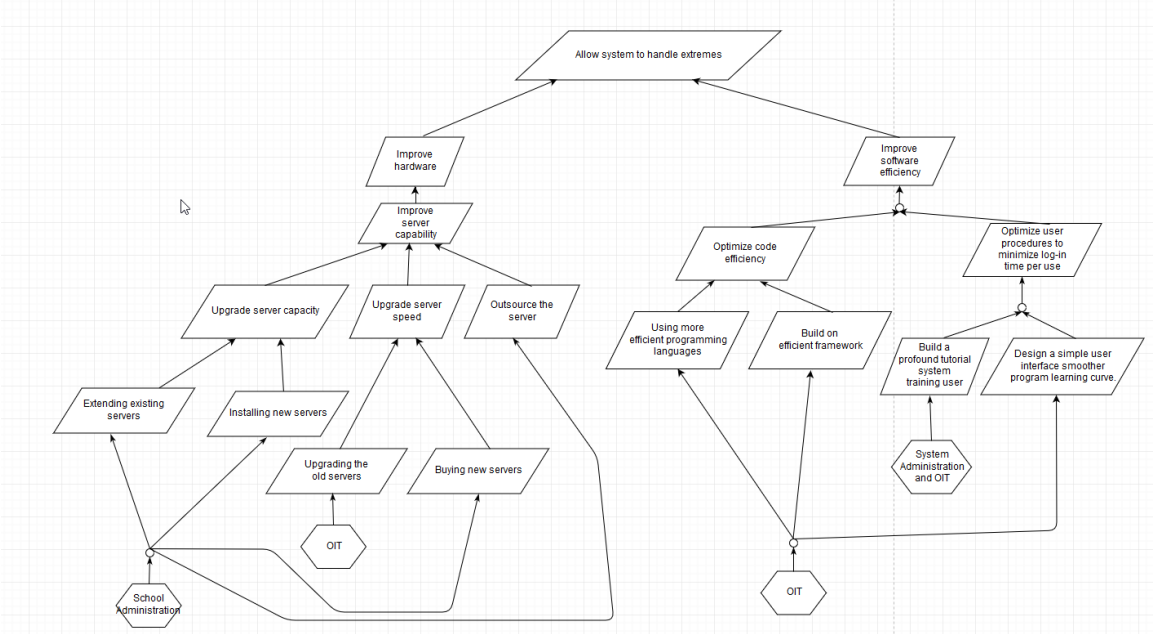


1. Name: Allow professors to maintain their classes and help the students
    a. Definition: This goal aims to help the professor tailor their lectures to a more specific group of students in order to maximize the benefits of each lecture and provide the learning experience the students require
    b. Source: Question 14
    c. Category: Achieve
2. Name: Increase professor control over classes
    a. Definition: This goal aims to give the professor the ability to control who is in his/her classes so the professor has a better understanding of the type of students in his/her class.
    b. Source: Question 14
    c. Category: Achieve
3. Name: Allow professors to add students
    a. Definition: This goal aims to give professors control to add students to their class who they see are fit to take the class
    b. Source: Question 14
    c. Category: Achieve

4. Name: Allow professors to drop students
    a. Definition: This goal aims to give professors control to remove students from their class who are clearly struggling and/or need a stronger foundation before taking the class
    b. Source: Question 14
    c. Category: Achieve
5. Name: Allow professors to give more lectures
    a. Definition: This goal aims to give professors the option to give more lectures to teach in different styles, thus tailoring to more groups of students
    b. Source: Question 12
    c. Category: Achieve
6. Name: Give professors access to available classrooms
    a. Definition: This goal aims to maximize the number of opportunities professors have to give lectures at different times and locations so that there will ideally always be a lecture available for all students
    b. Source: Question 12
    c. Category: Soft
7. Name: Let professors work both online and in person classes
    a. Definition: This goal aims to accommodate students who prefer to work on their own time, the students who prefer to get their information from their computers, and the students who prefer to see the professor in person so they can ask questions
    b. Source: Question 11
    c. Category: Soft
8. Name: Help professors address each student individually
    a. Definition: This goal aims to provide each student with a more individualized learning experience and help professors identify each student uniquely
    b. Source: Question 9
    c. Category: Achieve
9. Name: Help professors give more meaningful advice to students
    a. Definition: This goal aims to help professors become a mentor to students, help them decide what they need to improve upon, tell them what classes they should take, and identify each student's weaknesses and how to fix them
    b. Source: Question 9
    c. Category: Achieve
10. Name: Allow professors to view student's transcript

    a. Definition: This goal aims to provide the professor with a general understanding of the student's knowledge by providing the classes the student took and how well he/she did in those classes.
    b. Source: Question 9
    c. Category: Achieve
11. Name: Allow professors to see student's results based on topic
    a. Definition: This goal aims to provide the professor with how a student is doing currently in his/her class and what areas the student is doing well in and struggling in.
    b. Source: Question 9
    c. Category: Achieve
12. Name: Encourage out of classroom meetings
    a. Definition: This goal aims to pair student and professor together outside of the classroom or office hours in case extra time and a more personalized discussion is required.
    b. Source: Question 11
    c. Category: Soft
13. Name: Facilitate scheduling meetings
    a. Definition: This goal aims to optimize learning for the student by scheduling a meeting outside of the classroom or office hours from the availability times provided by both the professor and the student and finding the best window between the two.
    b. Source: Question 12
    c. Category: Soft
14. Name: Suggest a time when both student and professor are available
    a. Definition: This goal aims to minimize the hassle of finding optimal times for both parties to meet by recommending times that both the professor and student have stated that they are available.
    b. Source: Question 11
    c. Category: Achieve
15. Name: Conference calls with professor
    a. Definition: This goal aims to minimize the hassle of physically meeting in person with the other party while still being able to acquire nearly the same information and benefits of a physical meeting.
    b. Source: Question 12
    c. Category: Achieve

Goal #4: Allow system to handles extremes

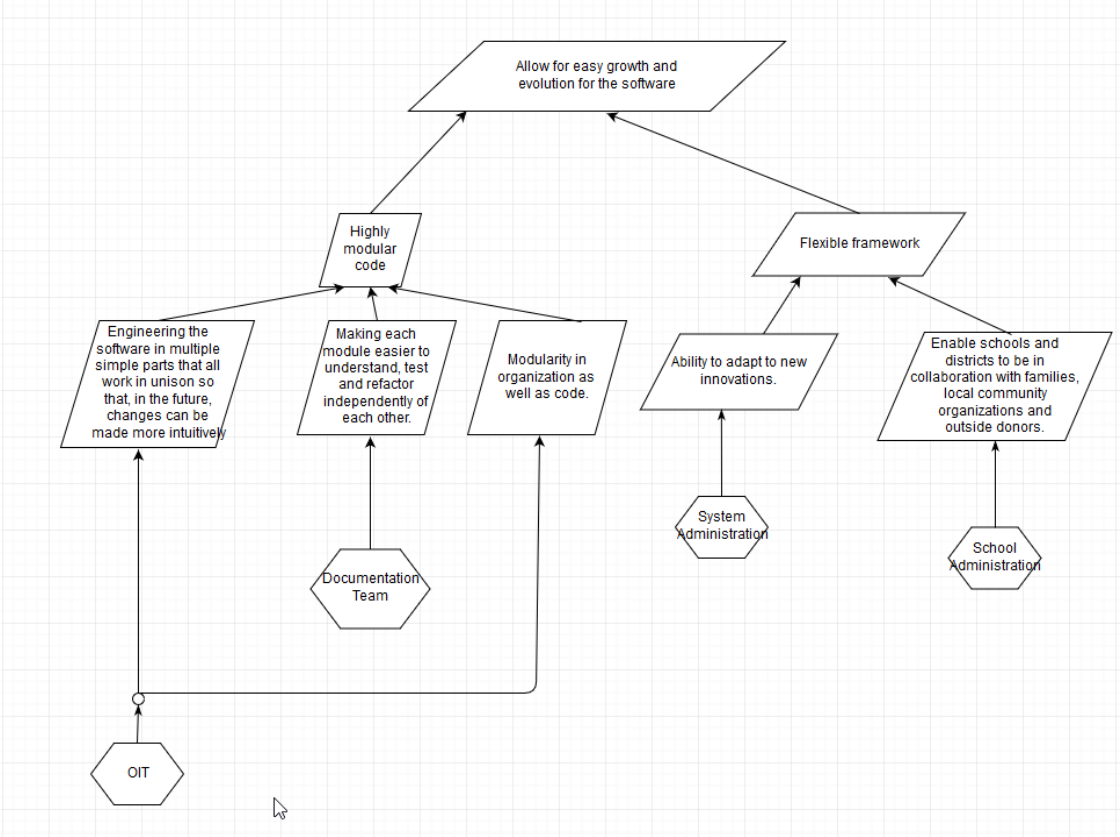


1. Name: Improve hardware
    a. Definition: upgrade server capability by changing server physically
    b. Source: post-meeting discussion
    c. Category: achieve
2. Name: Improve server capability
    a. Definition: allow server to perform more tasks at the same time and perform faster
    b. Source: post-meeting discussion
    c. Category: achieve
3. Name: Upgrade server capacity
    a. Definition: adding more rams or storage to avoid server overload
    b. Source: post-meeting discussion
    c. Category: achieve
4. Name: upgrade server speed
    a. Definition: change the server processor to faster ones
    b. Source:post-meeting discussion
    c. Category: achieve
5. Name: Outsource the server
    a. Definition: outsource the server deployment so we dont need to worry about server capacity issue.
    b. Source: post-meeting discussion
    c. Category: Soft
6. Name: Installing new servers
    a. Definition: get more servers instead of improving the existing ones

    b. Source: post-meeting discussion
    c. Category: soft
7. Name: extending existing servers
    a. Definition: upgrading the server capacity
    b. Source: post-meeting discussion
    c. Category: achieve
8. Name: upgrading the old servers
    a. Definition: change the old server processors to achieve higher speed
    b. Source: post-meeting discussion
    c. Category: soft
9. Name: buying new faster servers
    a. Definition: get new servers
    b. Source: post-meeting discussion
    c. Category: soft
10. Name: improve software efficiency
    a. Definition: perform regularly code refactoring to ensure the code efficiency
    b. Source: post-meeting discussion
    c. Category: achieve
11. Name: using more efficient programming languages
    a. Definition: the program aims to use faster programming languages in order to reduce command / request run time.
    b. Source: post-meeting discussion
    c. Category: soft
12. Name: build on a more efficient framework
    a. Definition: build the server with more morden framework which ensures server scalability and stability.
    b. Source: post-meeting discussion
    c. Category: soft
13. Name: build a profound tutorial system training users
    a. Definition: design a training system to help user to master the program and reduce the using time
    b. Source: post-meeting discussion
    c. Category: achieve
14. Name: optimize user procedures to minimize log-in time per use
    a. Definition: minimize the user interactions for taks
    b. Source: post-meeting discussion
    c. Category: achieve
15. Name: design a simple user interface to smooth program learning curve

a. Definition: use will be able to achieve their goals through UI reminders easily
b. Source: post-meeting discussion
c. Category: achieve

Goal #5: Allow for easy growth and evolution for the software



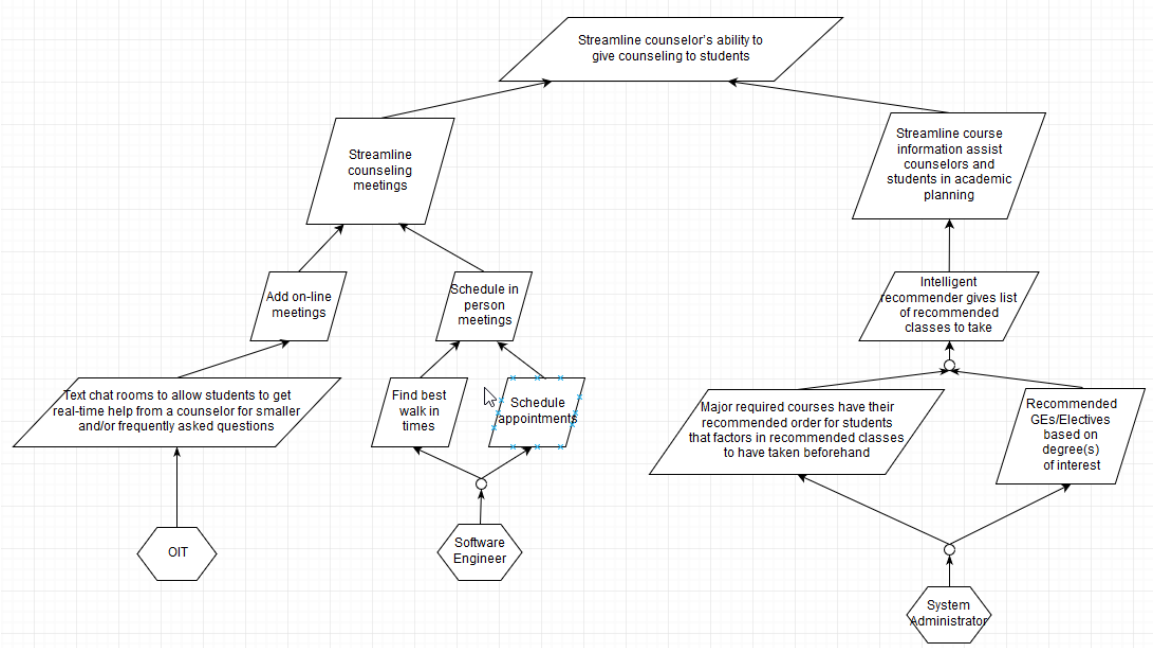
1. Name: Allow for easy growth and evolution for the software
    a. Definition: This goal is in place so that changes can be made to the software easily and with little to no backlash financially.
    b. Source: 27, 28, 29
    c. Category: Achieve
2. Name: Highly modular code
    a. Definition: Separating the coding in a lot of different simple modules so that changes can be implemented with ease.
    b. Source: 27, 32
    c. Category: Soft

3. Name: Making each module easier to understand, test and refactor
    a. Definition: To make the modules work as independent as they can for easier bug fixing.
    b. Source: 27, 32

c. Category: Soft

4. Name: Modularity in Organization as well as code.
    a. Definition: The organization of the software should be as fluid as the coding so there is an agile environment that is at work.
    b. Source: 27, 32
    c. Category: Soft
5. Name: Ability to adapt to new innovations
    a. Definition: The software needs to be built in a way that if something newer comes along and the stakeholders wish to implement that innovation, the software needs to be able to accommodate that.
    b. Source: 27, 28, 29, 32
    c. Category: Achieve
6. Name: Enable collaboration
    a. Definition: Enable schools and districts to be in collaboration with families, local community organizations and outside donors.
    b. Source: 28, 32, 33
    c. Category: Achieve

Goal #6: Streamline counselors ability to give counseling to students

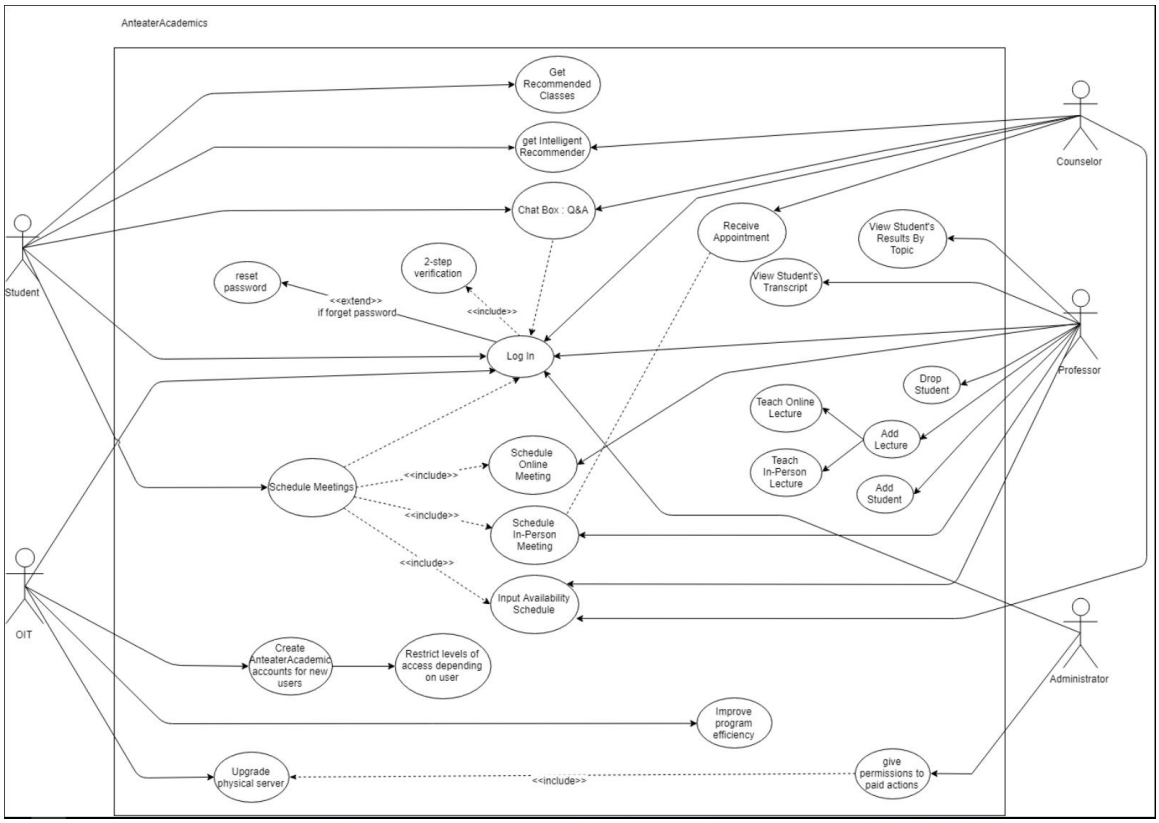


1. Name: Streamline counseling meetings
    a. Definition: Allow students to easily set up meetings with their counselors
    b. Source: 9, 11
    c. Category: Soft

2. Name: Streamline course information to assist counselors and students in academic planning
    a. Definition: Streamlining course information will help make academic planning much easier and allow for better assistance to students
    b. Source: 7
    c. Category: Soft
3. Name: Add on-line meetings
    a. Definition: Allow users to contact counselors through the software
    b. Source: 11
    c. Category: Achieve
4. Name: Schedule in-person meetings
    a. Definition: Through the system the user should be able to set up appointments with their counselors
    b. Source: 9
    c. Category: Achieve
5. Name: Intelligent recommender gives list of classes to take
    a. Definition: The system will have an intelligent recommender that will automatically give a list of classes that are recommended the student should take
    b. Source: 7
    c. Category: Achieve
6. Name: Text chat rooms
    a. Definition: Allows students to immediately contact a counselor on the site for smaller questions that don't require in-person meeting
    b. Source: 7, 9
    c. Category:Achieve
7. Name: Find best walk-in times
    a. Definition: Students should be able to easily locate walk-in hours that work with their schedule
    b. Source: 11
    c. Category: Achieve
8. Name: Schedule Appointments
    a. Definition: Students should be able to schedule appointments with their counselor through the system
    b. Source: 7, 8, 9
    c. Category: Achieve
9. Name: Major required courses have recommended order
    a. Definition: All major required courses the intelligent recommender recommends should take into account all pre-reqs and the student's intended graduation time

    b. Source: 7, 8
    c. Category: Achieve
10. Name: Recommended GEs
    a. Definition: Intelligent recommender should recommend GEs based upon the student's major and interest in fields to give the student more satisfying GE courses
    b. Source: 7
    c. Category: Achieve

Appendix 3. Usage Model:



Use Case 1:
Peter Anteater is a freshman at UCI creating his four year plan so that he knows which classes to take in the future and when he will graduate. He is trying to go get some counseling from the ICS counselors, but every time he goes to the office, there is always a massive walk-in line. He tries to wait for his turn, but after an hour of waiting, he simply doesn't have the time to waste and has other commitments to attend and must leave. He tries, but fails to create his four year plan himself, so he decides to try and use AnteaterAcademics. He has the option to either schedule a meeting with the counselors for a future date so he doesn't have to wait in line, or simply have the system provide suggested classes to help him build his four year plan. He decides to have the system provide him with suggested classes, so the system generates his four year plan for him. From AnteaterAcademics, he can not only see his entire schedule (both past, present, and future) but also see all the options that are available for each quarter. He can manually decide to take specific classes and AnteaterAcademics will adjust his recommended classes accordingly. Peter is now able to create his own four year plan without having to consult any counselors.

Sources: 7, 8, 9, 10, 13, 14

Section	Content/Explanation
Use Case Name	Facilitate Student Interaction with Counselor and Respective Information
Author	Brandon Soo Hoo
Priority	High
Source	Sources: 7, 8, 9, 10, 13, 14
Short Description	Allow students to gain some knowledge possessed by counselors, either through an automated system or by scheduling a meeting and removing the amount of waiting time from both parties.
Goal(s)	Minimize time student must wait to get counseling and incorporate more information into one site.
Primary Actor	Student
Secondary Actors	Counselor
Preconditions	Student has login credentials and is a UCI student
Success End Condition	Student gains the knowledge they need from counselors to facilitate their time at UCI.
Failed End Condition	Student doesn't the information required or is giving incorrect information, thus leading to incorrect conclusions
Trigger	Student requests counseling help (or automated help) through AnteaterAcademics

Basic Flow (Main Success Scenario)	Student is trying to complete a four-year plan Student requests automated help from AnteaterAcademics Student provides intended major(s) and minor(s) Software provides a recommended schedule. Student is trying to complete a four-year plan Student schedules a future appointment with a counselor through the software Student arrives at the appointment, does not have to wait, and gets the assistance he requires
Alternative Flows	Student is trying to complete a four-year plan Student requests automated help from AnteaterAcademics Student provides intended major(s) and minor(s) Software provides a recommended schedules Student manually inputs specific classes and times they want to take said classes System adjusts the recommended schedule accordingly
Exception Flows	Student is trying to complete a four-year plan Student requests automated help from AnteaterAcademics Student provides intended major(s) and minor(s) Software provides a non-optimal schedule Student is trying to complete a four-year plan Student schedules a future appointment with a counselor through the software Student does not arrive to the appointment or a counselor is not available during that appointment time
Relationship to other use cases	Related to Use Case 3 as it is the facilitate student and faculty meetings and give the student with the information they require as quickly as possible
Supplementary Information	Scheduled appointments can be changed or even held online so that the student does not have to go to the counselor in person Appointments may be postponed or delayed depending on previous appointment lengths
Open Issues	Students may require information that counselors may not be able to provide

Use Case 2:
Peter Anteater, a new student as UCI, was recently given an AnteaterAcademics account but is worried about the security and validity of the new system. Since Peter is logging in for the first time, the system prompts him to change the password and to further secure his account through the use of 2-step verification system and gives him the options of receiving the verification code through either text or email. As Peter is worried about his information and account security, he chooses to verify his 2-step verification through text, and so receives a 7 character code through text message that he will be able to input after logging in to the system in order to verify it is him logging in. Since Peter is a student, his account was given student level access in which he is able to view information of the classes that he has signed up for this quarter. While logged into the system, Peter is also not able to access any information that his account is not allowed, such as information related to other students which is strengthening his view of the validity of the system. As he knows that his information is safe in the system, Peter logs off for the time being. A couple of days later, Peter remembers he needs to check some information pertaining to his classes, and so decides to login to AnteaterAcademics. But as he is logging in, he seems to input the incorrect password, so the system prompts him that he will be locked out of his account if he inputs the wrong password two more times. Peter tries his hardest to remember what combination of characters he used for his password, but sadly was unable to recall his password and inputs the wrong password two more times. This prompts the system to lock his account for 15 minutes, while also contacting him through email and his verified phone number in order to handle the situation and change his password. To change his password, Peter decides to use the email option where he is sent an email with a link that he will follow allowing him to create a new password. After the 15 minute account lock is up Peter is now able to access his account, with the use of his new password and the 2-step verification, allowing him to view his class details.

Section	**Content/Explanation**
Use Case Name	AnteaterAcademics account security
Author	Thomas Kang
Priority	High

Source	Elicitation questions 26, 30, and 33
Short Description	Provides a new user with with the situation of logging into their account for the first time, and having to set up 2-step verification. User is also given a situation where they are only able to access information that pertains to their account type. Lastly, the user is given the situation if they would forget their account password, and what they would do from there.
Goal(s)	Make sure that users know and feel that their information is secure within the system.
Primary Actor	Student
Secondary Actors	OIT and system administration
Preconditions	User is given an AnteaterAcademics account.
Success End Condition	The user is able to login to their account with the use of 2-step verification.
Failed End Condition	User is unable to login to their account and is unable to change their login information.
Trigger	First login, and multiple failed login attempts.
Basic Flow (Main Success Scenario)	User is given an AnteaterAcademics account. User logs into their account for the first time. System prompts the user to change password and setup 2-step verification. User is able to login and view the appropriate information related to their account .
Alternative Flows	User attempts to login but fails to remember their password. The system prompts them that multiple failed attempts will lead to their account being locked for 15 minutes. If user continues to fail to login, their account will become locked.

	The system will send the user a password reset link through a verified email and/or phone number. The user will follow one of the links in order to change their password. Once the 15 minute account is up, the user will be able to use their newly changed password, and 2-step verification to login to their account.
Exception Flows	Following the basic flow, but the user is unable to login due to forgetting their password. Instead of trying and failing to login multiple times, the user just requests a password change which will be sent to them through email. The user changes their password, while not being locked out of their account for 15 minutes due to multiple failed login attempts.
Relationship to other use cases	Related to use cases 1, 3, and 6, as they all need to be logged into AnteaterAcademics to use the features.
Supplementary Information	N/A
Open Issues	Although rare, an account may be assigned the wrong level of access, such as a new counselor account only being given the access level of a student.

Use Case 3:
Peter, a student in In4MatX 113, is struggling a lot in In4MatX 113 with Professor Navarro, but unfortunately, the student has yet another class during the time professor Navarro give her office hours. Due to a busy schedule from both the professor and student, along with the inefficiency of emails, the pair struggle to find a time when both parties are available. Communication is sporadic and the planned available dates frequently come and go before each party can decide the best time to meet. Both student and professor decide to record their respective availability times on AnteaterAcademics and allow the system to decide the best time. The system produces a time and day that works best for the two parties. All the student and professor have to do is agree on the provided location, time, and date, and it is set. This limits the number of emails to one (from AnteaterAcademics) and allows for Peter and Professor Navarro to meet up without the hassle of trying to figure out when is the best time to meet. Similarly, they can also choose the option to meet online in order to best optimize time and help

Source: Question 9, 11, 12, 14

Section	Content/Explanation
Use Case Name	Schedule Outside Meeting Between Student and Professor
Author	Brandon Soo Hoo
Priority	Medium
Source	Question 9, 11, 12, 14
Short Description	Facilitate scheduling meetings outside of office hours and lecture between the professor and student to help student learn and improve where they are weakest. Provide a more personal meeting between professor and student.
Goal(s)	Help professor give more individualized assistance to students
Primary Actor	Student
Secondary Actors	Professor
Preconditions	Student is enrolled in the professor's class Student is logged into AnteaterAcademics
Success End Condition	Successful meeting scheduled time and date between professor and student.
Failed End Condition	Unable to coordinate a time and day for professor and student to meet.
Trigger	Student requests a meeting

Basic Flow (Main Success Scenario)	Student provides an availability schedule Student requests further assistance and to meet from a specific professor for a specific class Professor inputs availability schedule Software provides an optimal time and day for student and professor to meet Professor provides availability schedule to allow students to quickly meet with him on a shorter notice Students input availability schedule and request a meeting Software provides an optimal time and day for student and professor to meet
Alternative Flows	Student provides an availability schedule for the next 3 days Student requests further assistance and to meet from a specific professor for a specific class Professor inputs availability schedule Software is unable to find optimal time and day for student and professor to meet, so it requests more information Student provides extended availability schedule Software provides an optimal time and day for student and professor to meet
Exception Flows	Professor provides availability schedule to allow students to quickly meet with him on a shorter notice Students input availability schedule and request a meeting Software schedules an optimal time and day for student and professor to meet Student cancels the meeting Software notifies both parties that the meeting has been cancelled
Relationship to other use cases	Related to Use Case 6 in that it tries to connect student with faculty for further, more individualized assistance
Supplementary Information	This feature will also allow professor and student to have an online conference call, thus best optimizing time that student and professor can meet and eliminating travel time
Open Issues	Although the system produces a time and day for the student and professor to meet, it does not produce a destination Does not provide immediate assistance, only assistance in the future

Use case 4:
Parth Aneet is a senior software engineer in the UCI OIT department. Parth has been working there for a long time. He was around when UCI had different platforms for students such as MyEEE. He was also on the team that decided to make the move away from MyEEE and onto canvas. Now with the designing of AnteaterAcademics, Parth is tasked with making the system intuitive so the system can allow for easy growth and evolution of software. Given the nature of software, software evolves with the time that passes. Parth will be implementing high level languages and newer innovations to make AnteaterAcademics more intuitive.

Source: Question 27, 28, 29

Section	**Content/Explanation**
Use Case Name	Allow for easy software updates & changeability
Author	Niijan Al-Amin
Priority	high
Source	Elicitation Questions 27, 28, 29
Short Description	With the nature of software, Anteater Academics needs to be able to adjust with the times and growing innovations. The software needs to be intuitive.
Goals	- Allow for easy growth and evolution for the software - High modular code - Making each module easier to understand, test and refactor - Modularity in organization as well as code - Ability to adapt to new innovations - Enable collaboration: Schools and districts to be in collaboration with families, local community organizations and outside donors.
Primary Actor	OIT
Secondary Actors	Students, Professors, Administration
Preconditions	
Success End Condition	The System will be better than it was previously.

Failed End Condition	Most likely a migration to a better system.
Trigger	The faults in the previous system
Basic Flow (Main Success Scenario)	The engineers implement ideas made to make the software intuitive and adaptable.
Relationship to other Use Cases	The OIT use case for making software changeable and intuitive effects/involves all the other use cases because they all depend on the OIT department to make the system.

Use case 5:
Peter is a tech lead in the UCI OIT department. One day, Peter was working and he receives a warning message from AnteaterAcademic sever saying “the server load is at peak”. After notifying his boss, he was given a task of upgrading the server capacity. Peter was able to upgrade the physical server with additional rams and better CPUs for scaling up the server capacity. At the same time, Peter also sends a request to his boss for permission replacing existing physical servers or adding more to the existing grid. After the attempts upgrading the physical layer of the server, Peter was able to access the source code of the program and modify it for better code efficiency. He improved the user working procedure also to help the user reduce their log-in time on the server.

Section	**Content/Explanation**
Use Case Name	Allow system to handle extremes
Author	Zhongjie Shen
Priority	Low
Source	Goal Model 4: **Allow system to handle extremes**
Short Description	Concise description of the use case (approximately 1-3 sentences)
Goal(s)	● Improve hardware ○ Improve server capability

	■ Upgrade server capacity ● Installing new servers ● Extending existing servers ■ Upgrade server speed ● Upgrading the old servers ● Buying new servers ■ Outsource the server ● Improve software efficiency ○ Optimize code efficiency (Developer/maintenance team) ■ Using more efficient programming languages ■ Build on efficient framework ○ Optimize user procedures to minimize log-in time per use (Developer Team) ■ Build a profound tutorial system training user ■ Design a simple user interface smoother program learning curve.
Primary Actor	OIT, Administrative
Secondary Actors	Student
Preconditions	System is already deployed.
Success End Condition	The program will not crash while handing user inputs at the highest traffic of each quarter.
Failed End Condition	The program can crash or cannot output correct outputs more than 5 times per week.
Trigger	Program send the warning to the OIT saying “the server load is at peak”
Basic Flow (Main Success Scenario)	1. OIT staff receives a warning message from AnteaterAcademic sever saying “the server load is at peak”. 2. Notifying boss and is given a task of upgrading the server capacity. 3. Staff upgrade the physical server with additional rams and better CPUs for scaling up the server capacity.

	4. Server stop yelling “the server load is at peak” and running smoothly.
Alternative Flows	Trigger condition: Administrative allows the purchase of new servers. 1-2: same 3: Staff replace the old server with the new one 4: same
Exception Flows	Trigger condition: Administrative refuses to pay for the server upgrade or replacement 1-2: same 3: cannot do anything 4: issue cannot be resolved.
Relationship to other use cases	This use case is behind other use cases and supports the smooth running of others
Supplementary Information	N/A
Open Issues	This use case is assuming OIT have access to the physical server. This use case is assuming OIT has technicians who are capable of modifying existing servers.

Use Case 6:

Peter is a second year student at UCI who wants to register for classes next quarter but doesn’t know what classes to take. Peter logs onto AnteaterAcademic and goes to course registration. The intelligent recommender gives Peter a few courses he can take but he decides he wants advice from a counselor. Peter sends a request to talk to a counselor and a chat window is opened. The counselor takes a look at what classes and GEs they need to take and takes a look at the intelligent recommender to familiarize themselves with the student’s current situation. After talking on the chat room the student decides they would like to come in for an in-person appointment. The student then goes to look through open

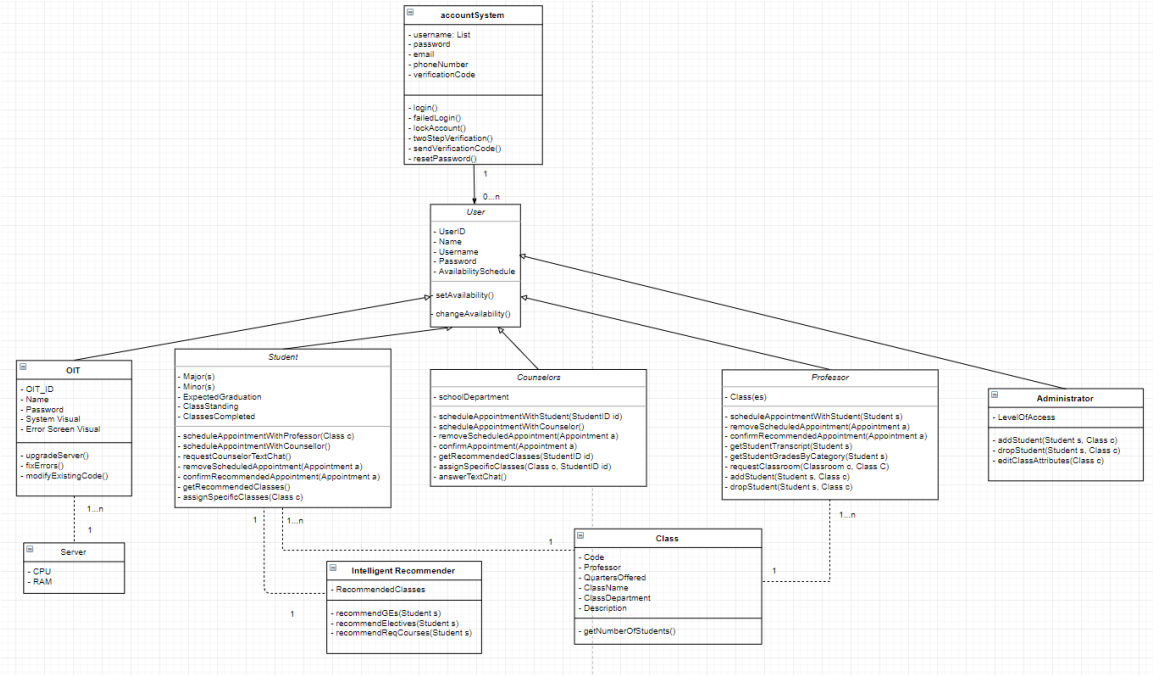
times and finds a time slot that works with their schedule. The student then books the appointment and logs off.

Section	**Content/Explanation**
Use Case Name	Streamline counselors ability to give counseling to students
Author	Zachary Cloutier
Priority	High
Source	Questions 7, 8, 9, and 11 from elicitation
Short Description	Students have complained that the counseling process isn't that easily Accessible or very useful. Anteater Academics needs to be able to Streamline the process to make it easier and more desirable for Students to seek counseling.
Goal(s)	○ Streamline counseling meetings ■ Add on-line meetings ● Text chat rooms that can be used while on the academic planning portion of system, Allows students to get real-time help from a counselor for smaller and/or frequently asked questions ■ Schedule in person meetings ● Find best walk in times ● Schedule appointments ○ Streamline course information assist counselors and students in academic planning ■ Intelligent recommender gives list of recommended classes to take ● Major required courses have their recommended order for students that factors in recommended classes to have taken beforehand ● Recommended GEs/Electives based on degrees/degrees of interest

Primary Actor	Students
Secondary Actors	Counselors
Preconditions	System is deployed, student has login information, and counselors are able to utilize the system fully
Success End Condition	Student has either booked an in-person appointment to seek further help or student has found the help they need and no longer needs it
Failed End Condition	Student still needs advice and help and doesn't seek further assistance
Trigger	The student begins seeking courses to register for upcoming quarters
Basic Flow (Main Success Scenario)	Student goes to the schedule of classes seeking new classes to enroll in. Student then requests counselor for online support. The student decides to seek further help by booking an appointment
Alternative Flows	Following the basic flow the student books an appointment. However upon looking at the schedule of classes again they decide they no longer need assistance and decide to cancel their appointment with the counselor.
Exception Flows	Following the basic flow the student sets up an appointment with counseling to receive further help. However the student fails to show up for their appointment. Thus the student has not received the help they need and the system has failed
Relationship to other use cases	Facilitate Student Interaction with Counselor and Respective Information. This use case is an extension of this use case that deals with counselor interaction, while the former deals with allowing the students to gain the information they need

Supplementary Information	N/A
Open Issues	The system assumes counselors will have the necessary knowledge for them to use the system

Appendix 4. Domain Model:



Account System: contains functions that handle login information inputted by a user in login()
User: The parent class of all users. Contains basic information about the user including a unique identifier and login credentials
OIT: This is the OIT actor. Derived from User class, contains functions and methods related to OIT users
Server: describes the physical server being interacted with by OIT
Student: This is the student actor. Derived from User class, contains functions and methods related to Students
Counselors: This is the counselor actor. Derived from User class, contains functions and methods related to Counselors
Professor: This is the professor actor. Derived from user. Contains the classes the professor is teaching and gives the ability to add and drop students, confirm appointments with a student, and reserve a classroom to teach additional lectures.

Administrator: This is the administrator actor. Contains high level of access for administration to change functional aspects of classes and add/drop students from classes
Intelligent Recommender: Class that handles functions related to the intelligent recommender, which recommends classes to a user
Class: contains all methods for classes students can take and professors can teach

Appendix 5. Elicitation Material:

Part1: Class Enrollment

Student

1. What's your existing workflow for registering classes?
    a. Open up webreg and a list of available classes for the quarter
    b. Copy class code into webreg and enroll for the class
    c. There are two sites need to be opened side-by-side
2. How would you like the site look like? Minimalist? Like the other school sites?
    a. Current is too cluttered and confusing
    b. Too many unnecessary options, more minimalist
3. What's the most frustrating part of using the current enrollment sites?
    a. Timeout system
4. which part of the original site user interface is unnecessary?
    a. Most of the search options for schedule of classes
    b. Only one really important search option

Professor

5. What are the top 3 things you usually do with Websoc?
    a. Get add code for students

Staff:

6. What data would you like to see in the academic report?
    a. Student grade
    b. Ability to compare with the rest of the class (Class average on specific assignment)
    c. Graduation year
    d. Number of times student has gone to counseling

Part 2: Academic Planning

Student

7. Do you have any issue figuring out your academic plan yourself?
    a. Yes
    b. Degree works and catalogue do not align

    c. Checking prerequisites are difficult, must use other sites
    d. Sign up restrictions (the info is not clear and difficult to find)
    e. Difficult to get authorized for classes
    f. There are so many different pages for different department.
8. Where do you find the resources for academic planning?
    a. DegreeWorks
    b. UCI ics Catalogue (for prerequisites)
    c. All are irritating to use
9. How often do you meet up with your academic counselor? Do you think the appointments worth the time? And why?
    a. Met with counselor one time
    b. After declaring major, seemed unnecessary and not worth time
10. Rate your experience meeting with an academic counselor. And which part of the experience with them is the most frustrating?
    a. Frustrating not getting credit for classes taken
    b. Better communication for class transfer between schools
    c. Unable to meet counselors outside of currently enrolled school
11. Will you be willing to talk to your counselor online? Advantages? Disadvantages?
    a. Yes
    b. Difficult communication online, but no need to wait in lines
    c. Difficult to share information (say what's on paper)
12. Which method would you prefer? Real-Time chat or forum or email? Which way? Email? Real-time chat? Or forum like platform and why?
    a. Real time chat for constant responses - ideally can have both voice and text based communication
13. What are the primary features that you wish to see and not see in the software?
    a. Keep everything more centralized instead of multiple pages
14. What features did you enjoy and dislike from the previous software?
    a. Catalogue is better designed, although there is a lot of information, all necessary information is in one location
    b. Likes:
        i. Webreg - added and dropped classes are updated and displayed immediately
        ii. Seeing scheduled classes while enrolling
    c. Dislikes:
        i. Separation
        ii. Aesthetics
        iii. Too cluttered
15. Where might the users be accessing the software?
    a. As all encompassing as possible

b. At LEAST on computer and mobile device
c. At LEAST on campus and at home

16. What prerequisites do users have to satisfy in order to operate the software?
    a. No additional software security should be necessary
    b. Avoid steep learning curve o
    c. New incoming students won't know this information and it would make it more difficult to sign up for classes

Counselor

17. what kind of stats would you like to see in order to help students better ?
    a. Average GPA
    b. Pass/Fail rate
    c. How often student tries to enroll for filled class
18. What would be the most convenient way to view enrollment statistics? What time denomination? What you think is the most straight way to view them?
    a. Customizable time denomination (by quarter, year, etc)
19. what's the current workflow of helping students' academic planning?
    a. Come in for an appointment
    b. Open DegreeWorks, catalogue, and schedule of classes(everything)
    c. Give personal advice from previous knowledge based on the same information the students are provided
    d. Slack for special cases checking with prof directly
    e. Use website to compare transfer classes to classes at uci to see what credits it counts for
20. Which way do you think is more efficient figuring out students academic plan? Talking in real-time or forum or email?
    a. Real time
21. what are the top 3 tools/sites you use to help students' academic planning?
    a. DegreeWorks
    b. WebReg (counselor version)
22. With the inclusion of an intelligent recommender, will students still be able to meet with their counselors before they use it?
    a. Avoid restrictions when able, allow students to do as much as possible
23. Will counselors be allowed to add, edit, and delete course info, degree requirements, and prerequisites whenever they choose, or will they have a time window, like before student registration starts?
    a. No strict time window
    b. A single counselor's actions should be verified by someone else

OIT

25. How many users are, on average and at most, operating the software simultaneously?
    a. 20,000 at most
    b. 600 on average
26. Who accesses the the student's results and what do they do with it?
    a. Stored into a database
    b. Administrators add additional classes
27. Are there any other goals that can be satisfied with this software?
    a. Ability to revert back to a specific time
    b. Have a backup
28. What legal restrictions must be enforced on the software?
    a. Students accessing the software should have their information kept confidential
29. What part of the system works the slowest and prevents it from working faster?
    a. High traffic
30. What must be tracked by this software?
    a. Which students are trying to enroll or enrolled in which classes
    b. Enrollment windows for each students
    c. Permissions for each student
31. Are there any edge cases that would probably cause the system to fail?
    a. Extreme traffic
    b. Two students enrolling in a class simultaneously when the class is full

All

32. How do you see the software changing in the future?
    a. Must support growing student body, growing class courses
    b. Accommodate for new school majors
33. How is this software being distributed to the people who need it?
    a. UCI website
    b. Browser based
34. On average, how much time do users spend using this software?
    a. Students: about 10 minute intervals
    b. Counselor: all day
    c. OIT: all day
35. Where do you begin when operating the software?
    a. School website on either phone or computer

A.6 Traceability:

ID: FR 1

TITLE: Facilitate Student Interaction with Counselor and Respective Information
USE CASE: Usage Model
SOURCE: Elicitation Questions 7, 8, 9, 10, 13, 14
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR 2
TITLE: AnteaterAcademics Account Security
USE CASE: Usage Model
SOURCE: Elicitation Questions 26, 30, 33
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR 3
TITLE: Schedule Outside Meeting Between Student and Professor
USE CASE: Use Case Model
SOURCE: Elicitation Questions 9, 11, 12, 14
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR 4
TITLE: Allow for Easy Software Updates & Changeability
USE CASE: Usage Model
SOURCE: Elicitation Questions 27, 28, 29
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR 5
TITLE: Allow System to Handle Extremes
USE CASE: Usage Model
SOURCE: Goal Model 4
HISTORY: Raised by Snoring Pandas on February 19, 2019

ID: FR 6
TITLE: Streamline Counselors Ability to Give Counseling to Students
USE CASE: Usage Model
SOURCE: Elicitation Questions 7, 8, 9, 11
HISTORY: Raised by Snoring Pandas on February 19, 2019