

IS 4300 T2: Team Assignment #2: Requirements Analysis

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Project website: <https://github.com/ericayee/hci/>

Title

Finding Your Way

Problem

Northeastern's Degree Audit system is used to display a student's progress on the completion of their degree requirements. The current system is unintuitive for students because all the information is presented at once instead of what a user needs for certain tasks. It can be frustrating to navigate through because it displays information in a way that is difficult to understand. Our goal is to not only redesign the presentation and navigation of information in the degree audit, but also to combine useful aspects of program requirements in the university catalog. Connecting these sources of information, particularly by showing descriptions when the course numbers are mentioned, will facilitate tasks related to planning out course schedules for student users.

User analysis

Alexi Bell: undergraduate student in Explore Program (primary)

Alexi is a first year NUin student who studied in Ireland for her first semester. She is in the explore program and is trying to figure out which major she wants to formally pursue. She has always had wanderlust and was so happy to be in the NUin program. She always documents her travels in her notebooks and has a true passion for creative writing, especially poems. However, writing competes with her fascination of the human mind. She finds it fascinating the depth and breadth of human cognition. She hopes she can find a job in a future that can cater to both her passions and desires. Although she has a dream to put these two interests together, she does not have much of a clue of what the prospect for each major will be. She hopes to find her own path and eventually find a job that does not feel like a job.

Jonah Samson: upperclassman student (primary)

Jonah Samson is a fourth-year undergraduate communications student at Northeastern. He thinks he has two semesters left before graduation. Overall, he's enjoyed his time at Northeastern but looks forward to working full-time because he likes being on co-op more than classes. Jonah has a 2015 Macbook Air that he uses regularly for homework, to watch movies, check email, etc. Compared to his laptop, though, he spends much more time on his iPhone X, often on social media. As someone who grew up with computing technology, he is somewhat technically adept. But he still sometimes has trouble figuring out new applications or tasks and doesn't consider himself to be "techie." When he needs help with technology, he'll search on Google. But if he doesn't get easy instructions immediately, he might give up that task.

Clara Smith: academic advisor (primary)

Clara Smith has been a CS advisor for three years. She graduated from UMass Amherst in 2012 with a degree in communications. After college she worked as an HR representative in the private sector but decided to make the switch to student advising because she wanted a chance to directly help others. She does most of her work in her office in Meserve. Her office has a two monitor set-up which she likes because she is able to show students program requirements and prospective plans at the same time. She sometimes brings her work home with her, during which she uses her laptop. She values being available to students, especially during busy times, such as the beginning or end of the semester. This semester she is advising 100 undergraduate students.

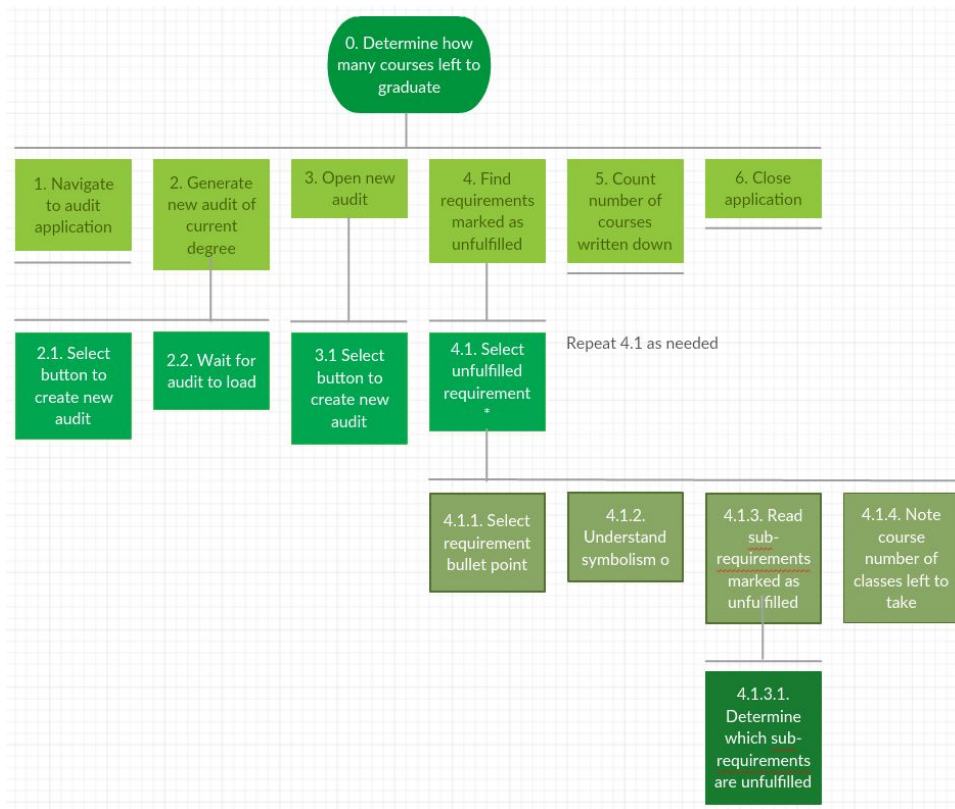
Vanessa Green: academic administrator (secondary)

Vanessa Green is the head of the music department. She has been a part of Northeastern's music department for 20 years. She splits her time between administrative tasks and teaching. She teaches a small class on shape-note singing during the spring semester. It has a prerequisite of the fundamentals of music theory and is only open to music or music industry majors. As the head of the music department she often gets emails from students asking with help registering for courses that are either capped or for which they do not fulfill the requirements. She also works with professors and students to approve requirement substitutions. She and the other music department administrators are in charge of deciding what classes are available each semester, who they are being taught by, and for what class size. This is often difficult because of the limited music department, though lately it has been extra challenging due to staff and degree program changes.

Task analysis

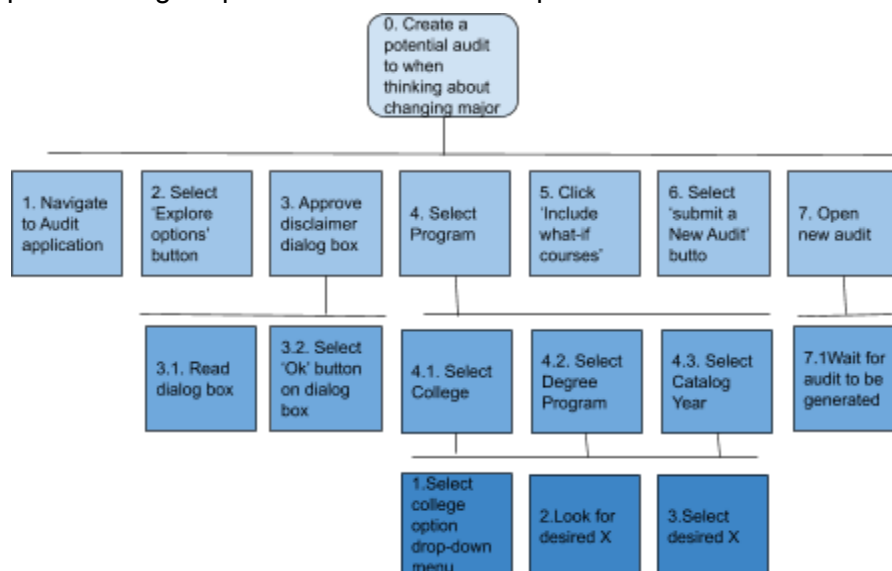
Determine how many courses left to graduate

A common task in the current degree audit is determining how many courses a student has left to graduate. Both students and their advisors may perform this task, either separately or in-person together. Depending on students' situations and how complicated their programs are, some students may only complete this task once over their undergraduate career, while others may check dozens of times. A possible mistake in this task would be misunderstanding the symbolism used to label different parts of the information. A slip might be the user miscounting requirements due to human error, which could be exacerbated by the interface.



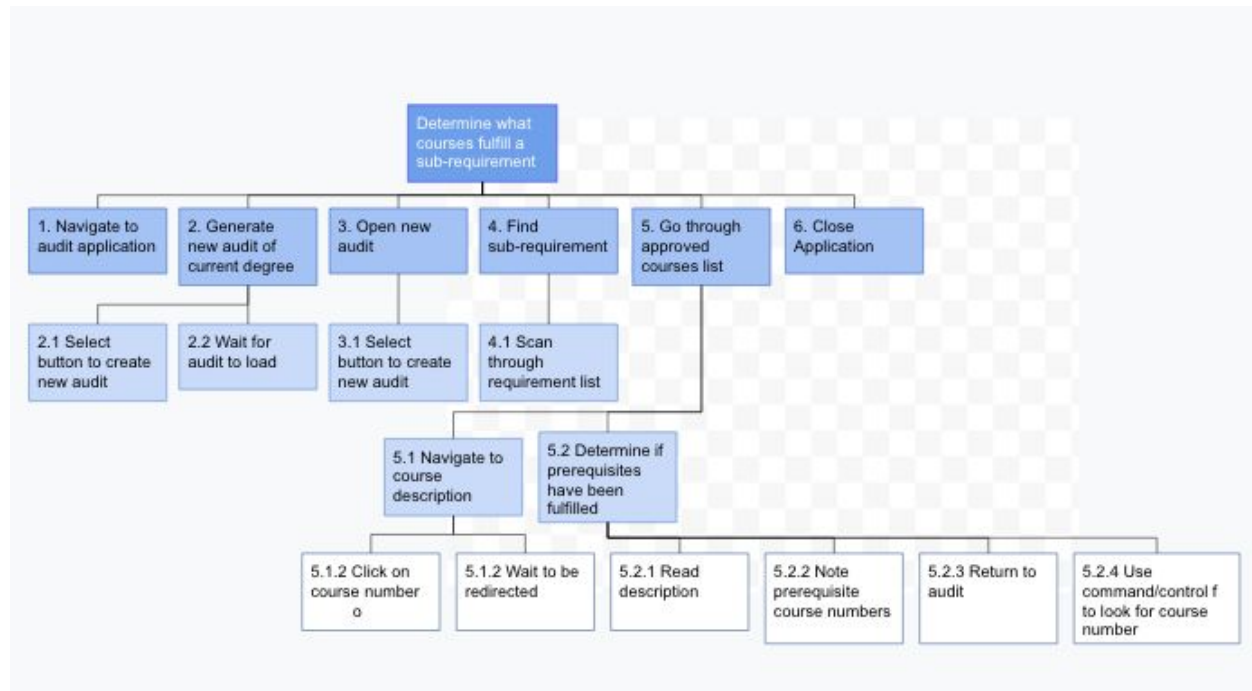
Create a potential audit to when thinking about changing major

A great utility of the degree audit is creating audits to explore different degree requirements. A student may try to explore on their own to see what classes are needed. It also is a way to see if a student has any classes that fulfill requirements in another degree program. If a student ever had the desire to switch majors they are able to see what other classes are necessary. It is also used by advisors, typically before a meeting with a student. They often transfer this data into a possible degree plan for a student on a spreadsheet.



Determine what courses could fulfill a sub-requirement

Students often use the degree audit to figure out what classes might fulfill a degree requirement. This often occurs in later years of study, once students have fulfilled their general requirements. Once a student figures out what courses fulfill a degree requirement, they often look up course descriptions to help them decide. Course listing also list prerequisites for a course, which a student can verify they meet by cross-referencing their degree audit. As not all courses are offered every semester, many students also check the next semester's course list. Advisors might complete this same task with their students.



Problem scenario analysis

An upperclassman student needs to determine how many courses left to graduate.

Since Jonah is approaching his last year in college, he thinks it's time to schedule out the rest of his time at Northeastern so he can ensure he graduates on time. He considers scheduling an appointment with his academic advisor, but doesn't feel like carving time out of his busy schedule to go to the advising office. Jonah remembers using the degree audit with his advisor during his freshman year and decides to try it out again by himself. He opens up his laptop while sitting on the bed in his off-campus apartment. Once he finds the link from the myNortheastern portal, he opens the application and is immediately struck by how outdated the interface looks. He is able to navigate through some of the confusing menus based on guessing as well as vague remembrances of using it with his advisor years prior, but he's not sure what some of the buttons and checkboxes do. Once in his current degree audit, he spends several minutes scrolling through all the textual information and trying to figure out the labels. He eventually determines that he has a mix of required classes, required categories of classes, and optional elective spaces left. Satisfied that he has an idea of what his last two semesters should look like, Jonah closes the degree audit tab. Then he immediately realizes that he didn't write down

the names of any of the required courses he has left since he only saw the course numbers. He's frustrated with himself but knows he can go back to the degree audit when it's time to register for classes and find them. The thought of repeating this process fills him with dread, but he thinks he can figure it out more easily next time now that he knows what he's looking for.

An Explore Program student creates a potential audit to when thinking about different programs. Sean just came back from first semester abroad from NUin in London. Being his second semester he is finishing up the foundational requirements in engineering. He knows that he wants to be an engineer, but is struggling to see the difference in the courses to make his decision final on what to declare himself as. His academic advisor told him that he can always access his Degree Audit to search different majors through myNortheastern. He decided that he should explore the different options and see if the core requirements differ in any way. He found the link on myNortheastern and was taken aback by the look of the site continued to the site. He noticed a button that said Explore Options and decided to start there. He saw a dialog box that mentioned a warning, but decided to continue on. He saw a dropdown for all the majors available. He was a bit overwhelmed by the options and was a bit confused by the encodings for each major and tried to find anything that said engineering. After selection he realized he had to submit each option one at a time and he would have to repeat this a few times. He decided to only look at three options for now. For the first audit he was confused on where to go to find the information. Once he found the category name he was still confused on what of the course list really differed. He was going to pull out a pen and paper to write down the classes need for each, but decided to make an appointment with his advisor to flesh things out more because he had other homework to finish up and he already spent his time way longer than he expected.

An academic advisor shows a student what courses would count for a requirement they need to fulfill. It's two weeks before class registration opens and Clara has an appointment with a sophomore student, Ben. Ben is a CS-Art major and has taken all the fundamental courses requirement by his degree. For the first time he has the opportunity to choose between a few courses that fulfill his "computer interaction" requirement. Clara and Ben meet in her office. She starts off by asking Ben if he has checked his degree audit. He has not. Clara then shows him how to pull up a degree audit. She then uses her second screen to pull up Ben's current plan of study. She sees that next semester he is meant to fulfill his "computer interaction" requirement. Ben says he does not know which courses would fulfill this requirement. Clara then scrolls through Ben's degree audit, finding the section on "computer interaction". Under this requirement there is a list of three courses that would fulfill the requirement. Clara opens the course list for next semester and goes through each of the courses. For each course she checks if they're available, and if they are she pulls up the description. It seems that "GUI design" is not available, but the other two courses are. Ben is still unsure which course he prefers and decides to take some time to think it over. So Clara composes an email to Ben with the name of the two courses he could take.

Usability requirements

Efficiency: User will be able to find a desired requirement section in under 10 seconds from opening the application.

Learnability: After completing an initial standardized task, users will be able to complete the same task with a different input without errors.