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User Centered Requirements Analysis Design

I. Introduction

This document attempts to perform a requirement analysis on the task of a student selecting classes to take next quarter at the U of O. Interviews have been conducted and a hierarchal task analysis was built based off of the methods the students described using in doing the task. A problem scenario is also written based off of this information as well.

II. Scenario

1.) *Jordan starts to make preparations for next quarter*

Jordan is a junior student who is currently enrolled at the University of Oregon, and is majoring in economics. Every quarter, just like every other student, he must perform the task of deciding which classes to take for the next quarter. Since he is a junior student, Jordan obviously has done this task many times before. He has enough knowledge about computers to do research for classes to take on his own. He also has lots of experience in using DuckWeb to help him with this process, and also uses it to register for his courses.

However, choosing classes for next quarter is a stressful task for Jordan for a couple of reasons. One is that he must decide which general education courses to take and how many. So far, Jordan has satisfied his arts and letters requirements, but still need 12 credits in social science and 8 in science. Jordan ponders whether he should take one social science and one science, or take two sciences to finish his science requirements. Another reason the task is stressful for him is that he must compete with other students for available spots. Since he is a junior, he has the advantage of registering before sophomore and freshmen students, but senior students may fill the class up, especially if it's a popular course. Jordan also must ensure that based on his final decision, he will still be on time for his expected graduation date of the following spring.

2.) *Jordan evaluates his current degree requirements*

Jordan first decides on what types of classes he wants to take. He knows that he needs 12 credits in social science, and 8 in science in order to satisfy his general education requirements. He also needs to take 3 courses required for his major, and also needs 12 additional credits for electives. He speculates for a while on whether he wants to focus more on general education classes or classes related to his major. He ultimately decides to take two science courses, each worth 4 credits, and one of the three classes required for his major. Jordan reasons with himself that taking 8 science credits and satisfying his science requirements is better since it is one less requirement checked off of his degree requirements. Jordan is slightly worried that 8 science credits and one major-related course will be a lot of work, but he convinces himself that the payoff will be worth the hard work.

To make this task easier, Jordan will make a list of possible course choices. He pulls out some notebook paper and writes down the 3 courses he needs to take for his major, leaving a couple of lines in between each one. The rest of the sheet he plans to use for listing science classes that he is interested in taking. He plans to write all the available times for each of the three classes below where they are listed, and wants to do this for each science class he is interested in. This way, Jordan will have a list of classes he might be interested in with times he wants or is able to take them.

3.) *Jordan decides on a list of courses to consider*

Jordan decides to first pick his major courses, since they are easier to pick for him. He gets on his computer and goes to the course listings for next quarter and sees only two of the three courses listed. Jordan realized that the course not listed is not offered in the winter term, so he will have to take it later. Jordan then mentally charts the pros and cons of each of the two courses he could take. One of them is held at 8 in the morning, the other held at 2 in the afternoon. One is held twice a week for 2 hours each lecture, the other 4 days a week lasting and hour. Jordan is unenthusiastic of the idea of taking an 8 AM course, so he decides on the afternoon course.

With his major course selected, Jordan focuses on general education next. He opens a new tab and goes to the course listings for the general education classes and scrolls down to the science courses. Jordan is overwhelmed by the seemingly dozens of courses offered. However, Jordan knows that there are clumps of courses he can skip over according to the subject. For example, Jordan finds biology extremely boring and prefers to avoid any biology courses. Jordan is able to skip over all courses listed with the label 'BI'.

Using process of elimination, Jordan works his way through the general education course list. Jordan is interested in archaeology and has a fascination for physics. He also decides to keep an open mind for other subjects since he suspects that he won't get the classes that he wants. He scrolls the archaeology and finds that he cannot take any of the courses offered since he doesn't have the necessary prerequisites. He does have them for an introductory physics course, so he writes down the physics class on his list. He also chooses 2 psychology courses, and a geology course. Jordan picks more classes since he knows there is a possibility of one of the classes being full or conflicting with his schedule.

4.) *Jordan refers to DuckWeb for course availability*

With his list of classes picked out, Jordan uses Duckweb to see the availability for each course he picked out. Jordan opens yet another tab on his computer and goes to DuckWeb. He logs in and goes to the registration section where he can search each class and all of the available times offered. For each of the courses on his list, Jordan enters each one into the search engine and browses all of the open times, writing each one down on his list. He then crosses out any times that he absolutely cannot make. He cannot attend the physics class as it is held at the same time as his major course. One of the psychology courses is also held at the same time, and cannot be taken. Jordan crosses these two off his list.

In addition to the times offered, Jordan also takes note of other factors, including the class size and seats remaining. Since both the psychology course and the geology course are over 100 students in size, and being a junior, Jordan knows that he won't have an issue registering for either class. He writes each of the courses he plans to register into onto another piece of paper, along with his registration date and time. Jordan also doesn't want to worry about forgetting his registration, so he sets an alarm on his phone to remind him. Jordan huts off his computer, relieved that his decision is made and anxiously awaits for his registration time.

III. Hierarchal Task Analysis

HTA is shown on next page.

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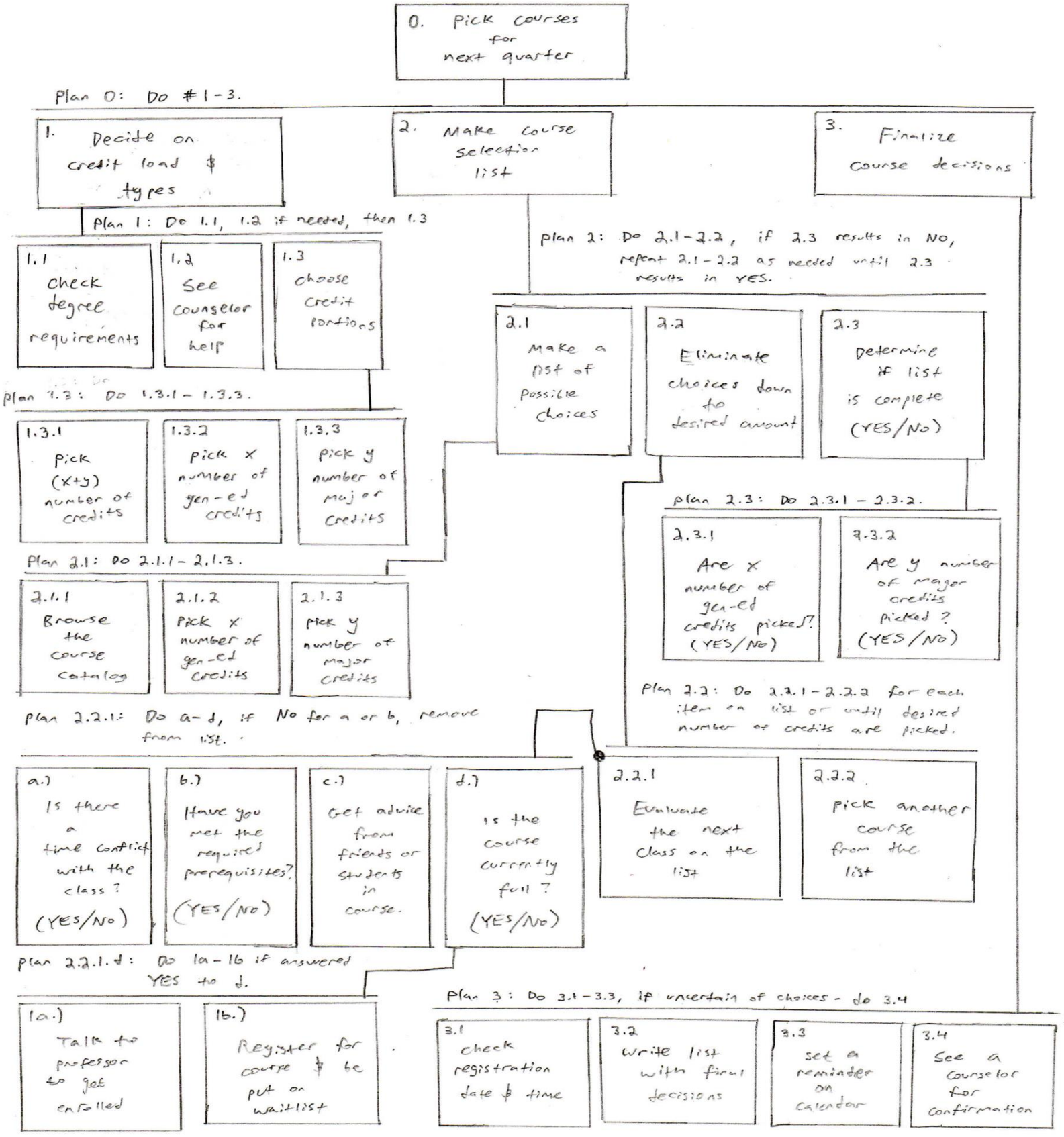

IV. Reflection

Upon completing the project, I have learned how complex a user-centered requirements analysis can be. Even for a seemingly simple task given that we may do in our everyday, analyzing it and breaking it down into a well-structured hierarchal task analysis can be challenging. It also can be very difficult conducting useful and informative interviews if you don't ask the right questions. The task of selecting courses can sound simple enough to anyone, but the requirements analysis was much more complex than expected, especially since some students may have different methods of doing some of these subtasks.

The task given to be analyzed was picking courses for next quarter. This is a task students usually perform without thinking about how to do it as much as what courses they are selecting. When interviewing the students and observing them how they usually decide on classes, it was easy enough to summarize the general steps they took to accomplish the task. The student checks their requirements, they look at the course catalog, make a list, talk to the counselor, etc. However, each of these broader tasks could be broken down even further. Deciding which of these tasks were worth breaking down further was surprisingly difficult.

What made it more difficult was deciding what the average student would do in a situation. For example, if a course was full, one student would just pick another from the catalog while another would enroll and be waitlisted. In addition, these different decisions that students make also will lead to different results. The student who simply chose another class will just join another class, while the student on the waitlist may or may not be admitted into the course in which case they may have to select another. These small differences in decision-making made analyzing the task more complicated.

Finally, learning how to ask the right questions can make a significant difference in the quality of information you will get out of interviewing the users. In general, I feel that my questions strongly captured specific actions students take when performing the task, or how they do it. However, my questions did not capture enough of why some students did certain things. This balance of how and why is important, along with the subtasks they do and the resources they used in order to effectively analyze the user-centered task given.

V. Interview Notes

Interview Questions

• What year are you (freshman, sophomore, etc.)

• Expected graduation date? (e.g. 2018)

• Have you signed up for classes before? How many times?

• What is your major?

• What kinds of classes are you required to take?

• How do you keep track of what classes to take/need to take?

• How to figure out which classes to take if you're unsure?

• Do you speak with a counselor? How do you contact one?

• How do you go about choosing your classes? (e.g. course offerings)

• What do you do if the desired class is unavailable/full?

• What other factors go into deciding? (familiar professor, time conflicts, etc.)

• How do you physically sign up for classes? (through duckweb?)

• What technology do you use throughout this process?

• What would make this process easier?

• Can the university do anything to make it easier?

• Any other online sources used throughout the process?

Take notes on:

• activities done

• artifacts used

• stakeholders (who is involved)

• social contexts

Interview #1 Notes

• Junior student; has chosen classes multiple times before, very experienced with process

• Must take whatever B.S. or B.A. requirements are, plus general education classes

• Refer to duckweb's degree guide to decide what requirements are met/need to be met

• If uncertain, go to a counselor for clarification

• If deciding on major-related classes, go to department site to see offered courses

• Pick 3-4 major courses or electives offered next quarter; read about them if allowed

• Go to duckweb and see available time(s), eliminate from list if time conflicts arise

• Narrow options to 1-2 classes, eliminate based off of difficulty and/or interest in subject

• Refer to UO site to see when person is allowed to register for classes.

• If gen-ed course requirements still need to be met, decide to take 1-2 courses

• Decide which category(s) to take (science, social science, or arts & letters)

• Go to course catalog and pick 4-5 courses from desired category

• Rank choices, search each on duckweb; if time conflict arises, remove it from list

• If 1-2 gen-ed classes do not conflict with other courses, write the course and offered time down

• If choices run out, pick 4-5 more and redo

• Talk to other students in chosen class(s) for more info if unsure

• Once the desired number of courses are chosen and no conflicts are present, write registration time and picked courses & times down, set calendar date for reminder if needed

• Uses primarily laptop, internet, duckweb, email for entire process;

• Stakeholders include student signing up, professors of courses, & counselors

• Students use duckweb and website(s) run by university, courses offered by professors

• Students also interact with other students (maybe) for more information if needed.

• The problem of deciding which gen-ed classes & major classes to take is separate in early stages, but connected later (student must ensure no timing/schedule conflicts are present)

• Another problem of which gen-eds to take (should I take arts & letters next or science?)

• Some information given by other students can be inaccurate; for example, student may say the course is boring/too hard, but the student enrolling might find the course very interesting/easy (misinformation)

• Student must also ensure they are still on track for their expected graduation date

Interview #2 Notes

• Interview was conducted with a student from a different college.

• Senior student, majoring in Kinesiology, has much experience with signing up/deciding on classes

• Needs to meet x amount of credits for gen-ed; y amount in each category (4-5 categories)

• Has access to a degree report, and also talks to a counselor for progress

• For deciding gen-eds, refers to the college course catalog where all are listed

• For deciding major classes, refers to the degree requirements

• In general, person prioritizes gen-eds slightly more, preferable to eliminate them first

• Prioritizes decision making based on 1.) the time held, 2.) the professor teaching, 3.) how easy/difficult is the course?

• Talks with students in course, friends who have taken it, counselors, professors

• Generally takes 12-16 credits a term

• Keeps a chart of each category of gen-eds and major courses met/need to meet; demonstrates high organization

• In the event of a wanted course being full, perform the following: 1.) talk to the professor about adding the student in, 2.) waitlist the course, 3.) select another class to replace it

• Do the same for both gen-eds and major courses

• Accesses the university website frequently, chart listing all the courses is also kept close when deciding what to take

• Uses the university website to manually search for classes and signing up for classes

• Stakeholders include student signing up, professors, other students enrolled in course, & counselors

• Artifacts include laptop, course catalog, interactions with other students, etc.