CS 314 User Interaction In-Class Exercise

Instructions:

In this exercise you need to do 5 things: study the User Environment Design of a simple advising system, identify a usability goal for the Edit Plan place, create 1 UI design for the Edit Plan focus area, create 1 paper prototype for this design, evaluate your paper prototype with another team, discuss the evaluation results and decide how you would proceed with more designs/evaluations/etc. You need to work in your teams for this exercise, and turn in 1 answer sheet and the paper prototype for your team. Please make sure the names of all the team members present and who participate in this exercise are written on the answer sheet you turn in.

If this exercise spans 2 classes, then you MUST turn in the work you accomplished during the 1st class, and it will be returned for the 2nd class.

System Description:

An advising support system will provide automated support for undergraduate advising in the Computer Science department. The system allows both students and advisors to create and modify a plan of study for the student, and compare actual progress against the plan. It also can be used to explore alternative plans.

I. The system keeps track of the following information:

1. The latest approved plan of study for a degree, that contains:
   a. Planned degree and major, additional majors if the student is pursuing a double major, additional minors if the student is pursuing any minors.
   b. Completed classes, including semester the course was taken, grade, and number of credit hours earned.
   c. Classes currently being taken and their number of credit hours.
   d. Planned classes, including the semester the student plans to take the class and the number of credit hours that will be received. The expected graduation date is included.

2. Progress on the latest approved plan of study: At the end of each semester, information regarding the actual degree credit hours the student earned versus the plan is updated.

3. Previous plan history: Any time an approved plan of study is changed and officially approved, the previous approved plan is saved so that a history of changes can be obtained for as long as the student is at the university.

4. Multiple drafts of plans of study may be retained for a month to be used by the student and advisor to create an officially approved plan of study.

II. The system has access to data stored in external systems:

1. A general catalog that contains course descriptions, published times when the course is offered (e.g. spring only, or spring/summer/fall), credit hours, pre- and co-requirements.

2. Every department’s degree requirements for all majors and minors offered by the department that includes the number of required credit hours and a list of required courses, including a history of changes.

3. Planned class offerings for the CS department for the next 2 semesters. (Note that these sometimes change due to unforeseen circumstances.)
Four possible system uses:

**A. Student query.** In this system use, the student can find out their expected date of graduation.

1. After gaining access to the system, the student sees their approved plan of study as described above (I.1), and their progress against this plan (I.2).

**B. Student planning tool – freshman planning.** In this system use, a student can explore what classes they could take to earn an undergraduate degree. The steps could be the following:

1. After gaining access to the system, choose a major (for example CS or ACT), a minor (for example Math), and/or any second major. If the student doesn’t know any of these, the system should assume a CS major since they have accessed this CS system.
2. The system shows the students the courses required for the combined major/minor/2\textsuperscript{nd} major. Where there are choices, the system indicates which choices will apply to the most of the combined major/minor/2\textsuperscript{nd} major. The student can see (or hide) additional information about the courses, such as their description, pre- or co-requisites, and when they are offered.
3. Where there are choices, the student can choose which classes they would like to take.
4. The student can then request the system to figure out a plan of courses. The system will then take the student’s choices into account, along with any pre- or co-requisites, and produce a plan of study that uses only Fall and Spring semesters, with a full 12 hours of credit, that clearly shows the estimated graduation date.
5. The student can request the system to propose a plan with an earlier graduation date, in which case the system can also use Summer and up to 15 credit hours to create a plan.
6. The student can change the classes where there were choices and request additional proposals as desired.
7. Each proposal, along with the accompanying student input (e.g. class choices or earlier graduation choice) is saved as long as the student is in the system so that the student can go back and forth as desired.
8. The student can also request the system to save particular proposals, for up to a month.
9. The student can choose a particular proposal to forward to their advisor for additional work or for approval to create their official plan of study.

**C. Student ‘what if’ system use.** In this system use, the student has an official plan of study and is curious to see what might change if they add a 2\textsuperscript{nd} major, add or change a minor, or change their major.

1. After gaining access to the system, the student’s official current plan of study is shown (I.1), and their progress against this plan (I.2).
2. The student can request a different major, a 2\textsuperscript{nd} major, a new or different minor, or just to change some of the classes that had choices.
3. The student enters the new/changed information and the system creates an updated progress towards graduation based on the changes. New plans are based on 12 credit hours for Fall and Spring semesters.
4. As in the previous system use, the student can request a plan for the earliest graduation date, the student can change the choice of classes where possible, etc.
5. Also as in the previous system use, the student has access to any proposal created while they are using the system, and they can save any plans for up to a month.
6. The student can choose a particular plan to be forwarded to their advisor for approval or further work.
D. Advisor system use. In this system use, an advisor can see the progress a student is making towards graduation and perform ‘what if’ analyses or approve a plan.

1. After gaining access to the system, the advisor must enter some identifying information about the student.
2. The system then shows the current official plan of study (I.1), and the student’s progress against this plan (I.2), or if this is a new student with no plan, a plan the student requested be forwarded to the advisor if one exists, or essentially a blank form.
3. If this is a new student who has not forwarded a form to the advisor, then the advisor can request a plan of study based on either an ACT or CS degree and the system will create one, which the advisor can approve.
4. If this is a new student who has forwarded a plan, the advisor can add notes to it if needed, create additional changes to it if desired, approve it if applicable, or save it/or an updated version for face-to-face advising.
5. If the student is not making adequate progress on a degree plan, the advisor can make notes in the system, and request follow-up advising with the student if desired.
6. If the student has requested a change to their plan, the advisor can add notes, create additional changes, approve it if applicable, or request follow-up advising with the student.

Tasks:

1. In-class:
   a. Decide on 1 usability goal for the Edit Plan focus area and write it as a measurable question that you can answer with your evaluation of your paper prototype.
   b. Create 1 UI design for a portion of the Edit Plan focus area.
   c. Create a paper prototype of the design on the provided 5x7” card.
   d. Send 1 member of your team to another team and evaluate your prototype with the 2 members of the other team.
   e. Go back to your team and decide how well your prototype met your usability goals and what you’d do in the next iteration to improve it of if it was OK, what additional usability or user experience goals you would address in the next design.

2. Post-class:
   Write an RSQC2 (recall, summarize, question, connect, and comment) of 3-4 typed paragraphs due next class period reflecting on the 2 most useful things you did in the 5 parts of the exercise. Recall these points, summarize them, question something about them, and connect them to other experiences. (Grading will take into account following instructions, and providing and justifying thoughtful answers.)
Undergraduate Advisor Support System User Environment Design diagram

Find plan
Purpose: Find a student’s approved plan, a persisted plan that is not approved, a working plan created during this session, or a plan that has been recommended to the advisor.

Functions:
- If user is an advisor, then find plans associated with a particular student, otherwise only find plans associated with the user
  - View plan
    - Entire plan or any combination of:
      - Classes taken to date
      - Classes planned for entire future
      - Classes planned for next semester
      - GPA
      - Estimated graduation
      - Applicable rule violations

Links:
- Find plan
- View rules
- Home

Manage plan - Advisor
Purpose: Handle proposed plans and deal with progress notifications.

Functions:
- Receive progress notification
  - Add notes to related plan
  - Request meeting with student
- Receive plan proposed for approval
  - View plan
  - View changes from existing plan
  - Add notes
  - Request meeting with student
  - Approve or deny plan
  - Defer plan decision
- View history of prior approved plans

Links:
- External: email system
- Edit plan
- View rules
- Print plan
- Home

Edit plan
Purpose: Create a new plan or change an existing plan.

Functions:
- Choose starting plan
  - New plan
  - Current approved plan
  - Persisted working plan
  - Working plan created during this session
- Set major/minor
  - Choose major
  - Change major
  - Choose a 2nd major
  - Change minor
  - Add a minor
  - Delete a minor
- View choices
  - Propose to satisfy the most requirements
  - Select choices
  - Show changes with respect to chosen approved or working or persisted plan
  - Optimize for earliest graduation
  - View plan

Links:
- Persists plan
- View requirements
- View rules
- Print plan
- Home

Recommend plan
Purpose: Forward plan to advisor for approval.

Functions:
- Forward plan
  - Choose advisor

Links:
- Home

Print plan
Purpose: Print any part of an approved plan, proposed plan, or working draft plan.

Functions:
- Clearly indicate approved versus other plans
- View detailed offerings for next semester

Links:
- Home

View course info
Purpose: View complete information about courses.

Functions:
- Choose department
  - View all courses in department
- Choose course
  - View all info about course
  - View description
  - View credit hours
  - View pre-, co-requisites
  - View general offerings (e.g. spring, fall, summer, all)
  - View detailed offerings for next semester

Links:
- Home

NOTE: Double line arrow means work done in the area pointed TO may be needed by work done in the pointing FROM area, and switching back and forth can occur.

Home
Purpose: Access Undergrad Advisor Support System

Functions:
- Login/Logout

Links:
- Find plan
- Edit plan
- Home

Persists plan
Purpose: Save a plan for up to a month.

Functions:
- Select to save plan
  - Name plan being saved

Links:
- External: Department requirements
- Edit plan
- Home
Task 1:
   a. What is the measurable usability goal you will test?

   b. Briefly explain the design you developed.

   c. Make sure to turn in your paper prototype, and that your names are on it.
   d. What are the results of your evaluation?

   e. What would you do next to address the evaluation results? What would you design during the next iteration?