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3380-Object_Oriented_Design

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Github_link: <https://github.com/nicksettoon/3380-xCourse>

Project Requirements for xCourse

1. User logs in to the app
 - a. Greeted with xCourse logo
2. User clicks “x” and selects a mode: Plan, Compare
3. If the user selects Plan
 - a. Enter [Plan Mode](#)
4. If user selects Compare
 - a. Enter [Comparisons View](#)

5. Comparisons View

- a. User can create comparison pairs and save them for later use
 - i. A comparison pair is a set of two degree flowcharts saved to the user account
- b. User enters Comparisons View for the first time
 - i. Enter create new comparison pair
- c. User clicks button to create new comparison
 - i. User's current degree is loaded and displayed in a smaller square
 - ii. User clicks "add degree" button
 1. list of degrees is provided
 2. user hovers over degree
 - a. shows small flowchart
 3. user clicks preview button on degree
 4. pulls up fullscreen flowchart for degree (doesn't leave page, has to be fast and seamless)
 5. user selects degree from list
 - a. degree added to [Comparisons View](#)
- d. User clicks comparison pair
 - i. User clicks a degree display box
 1. enter [Plan Mode](#) for that degree
 - ii. User clicks Compare button
 1. Enter [Compare Mode](#)

6. Compare Mode

- a. Two [Plan Mode](#) modules are displayed side by side
- b. New layer is generated and added to both plan modes
 - i. Displays classes in both degree paths in yellow
- c. Compare mode works the same as Plan Mode but with two charts, side by side.
- d. User clicks Plan edit button
 - i. Enter [Plan Mode](#) for that degree
- e. User clicks zoom out button
 - i. Enter [Comparisons View](#)

7. Plan Mode

- a. User's current degree plan is automatically loaded
 - i. Flowchart for degree is retrieved/generated
 - ii. courses-taken layer is generated and displayed on the side as checkbox
 - iii. unavailable-prereq layer is generated and displayed on the side as checkbox
 - 1. this layer shows the courses a user cannot take since they don't meet the prereqs yet
 - iv. time-conflict layer is generated and displayed on the side as checkbox
 - v. Previously created/scheduled layers are generated and displayed on the side as checkbox
- b. Metadata such as semester credit hours, time to graduation estimation, gpa estimation, etc... is calculated
- c. User clicks on coursebubble on flowchart
 - i. Course description is displayed
- d. User checks box for any layer
 - i. the colors for all courses in that layer are recalculated
- e. User unchecks box for any layer
 - i. the colors for all courses in that layer are recalculated
- f. If the user drags layer above another layer
 - i. the new top layer's colors will override the layers underneath for all courses
 - ii. the colors for all courses in flowchart are recalculated
- g. User checks box to display courses-taken layer
 - i. If a course has been taken it will be colored dark green
- h. User checks box for unavailable-prereq layer
 - i. if they cannot take a course due to prereqs it is colored orange
- i. User checks box for time-conflict layer
 - i. if there is a course in the entire plan with a time conflict it is colored red
- j. User clicks button to make new plan
 - i. User selects a semester to assign the plan to (fall, spring, summer, intercessions)
 - 1. after selected, plan layer displays semester choice on the sidebar entry

- ii. Empty name field at the top is highlighted or something
 - iii. Enter [Edit Mode](#)
- k. User hovers over elective slot
 - i. available electives are shown in a list or mini flowchart? if they have prereqs
 - ii. popup is interactive and courses inside it can be clicked to bring up their information cards
 - iii. course can be selected to slot in for this elective
 - iv. if the elective was already in another semester plan and is being changed, check layer's lock status
 - 1. if locked inform user they can't change it since the plan layer is locked
 - 2. if unlocked inform user they are changing a previously created semester plan
 - 3. recalculate color of elective box based on layers, courses taken, and prerequisites
- l. User clicks button to lock semester plan
 - i. semester courses and grades cannot be changed, but it's color and name can be
- m. User clicks button to unlock semester plan
 - i. semester courses and grades can now be changed again on that semester
- n. User clicks an unlocked plan layer
 - i. Enter [Edit Mode](#)
- o. User clicks button to duplicate layer
- p. User clicks button to delete layer
- q. User clicks button to hide layer from sidebar list
- r. User clicks button to export flowchart
 - i. save as pdf, png, jpg, json options given
 - ii. send directly to advisor/faculty member
- s. User clicks zoom out button
 - i. Enter [Compare Mode](#)
- t. User presses button that says "Add a Minor."
 - i. List of Minors is displayed
 - ii. User selects desired minor.
 - iii. Adjusted flowchart is generated and displayed.

8. Edit Mode

- a. the name of the layer will display at the top
 - i. user clicks name of layer at the top to edit the name
 - ii. user clicks name of layer entry in the sidebar to edit the name
- b. Meta data such as semester credit hours, time to graduation estimation, gpa estimation, etc... is calculated
- c. plan specific metadata will be displayed underneath the degree-wide meta data
- d. top of Calendar View is visible to indicate its existence

- e. If a course has a time conflict with other selected courses, it turns red
- f. If the student can't take a course due to prereqs, but still selects it, it will be colored orange
- g. If the course is valid and can be scheduled during that semester, it is blue
- h. User clicks focus button
 - i. all other layers are turned greyscale to only focus on the current semester plan
- i. User clicks the body of a course
 - i. add to current plan layer
 - ii. update Calendar View, metadata, and time conflicts
- j. User drags course to a different plan layer
 - i. adds that course to that layer
 - ii. does not leave current layer's edit mode
- k. User clicks on a different layer
 - i. switches to editing that layer
- l. User clicks grade option on course
 - i. drop down for A+, A, A-, B+, ... F, Pass, Fail, Withdraw, Incomplete is displayed
 - ii. after selecting one, global and semester metadata recalculated
- m. User clicks elective slot
 - i. see clicking elective slot in Plan Mode
 - ii. user selects course from popup
 - iii. color of box is re-evaluated
 - iv. see user clicks body of a course
- n. User clicks finish-plan button
 - i. prompt to select a color displays
 - ii. if name hasn't been given, prompt for name
 - iii. After finished,
 - 1. lock the semester plan
 - 2. return to Plan Mode, recalculating metadata