Project 3: Expert Analysis

IN4MATX 131 | Winter 2024

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Informagics | Discussion 3

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Introduction

WebReg is a web application that manages the UCI database for course registrations. Used by more than 30,000 UCI students each year of all years and majors, WebReg is a system that all students utilize and is extremely important in their education due to its significance in determining the classes and path of courses they take in their college career. Regarding our persona, which is reflective of the subpopulation of freshmen at UCI, we had in mind a student who was new to UCI and the registration web application system. Taken into account of the many complaints we received previously in our interviews, we did this expert review in the mindset of the persona. For a user who first experiences the frenzy of registering for classes, WebReg has both strengths and weaknesses from the usability and accessibility principles that we discuss in class. Specifically, we will talk about the usability principles such as, Prevent Error, Support Internal Locus of Control, Design Dialogs to Yield Closure, Reduce Short Term Memory Load, and Seek Universal Usability. Keeping in mind that this system was designed from many years ago to keep the consistency, it still has a large gap in allowing users to interact with the platform with ease.

Usability Strengths

It is easy to critique the usability of an application, however it is important to highlight the strengths that the software may embody. WebReg has been a successful application for students throughout the years as a device for class enrollment. Two notable strengths lies in the two principles:

5. Prevent errors.

One of the strengths of WebReg is its ability in error prevention. Users are consistently brought up with error messages from the application as the system is preventing users from making any user decisions that may result in the system crashing or terminating. For example, when users attempt to submit a course registration, the application verifies the validity of the selected course, enrollment time, and any prerequisite conditions. If the conditions are not verified, the application does not enroll the student in the selected course, enabling the student to not make any serious errors.

7. Support internal locus of control.

Another strength of WebReg is the support for users to be in control of the interface. The application achieves this by providing various points of functionality and input for the user to be in full control. In order for the application to proceed, users are enabled to provide the information needed for their courses and the waitlists they want to enroll for. Furthermore, it is the user's responsibility to review and confirm their selections before finalizing their enrollment, ensuring that users remain in full control of their actions.

Usability Weaknesses

Severity Ranking

0 = I don't agree that this is a usability problem at all

1 = Cosmetic problem only: need not be fixed unless extra time is available on project

2 = Minor usability problem: fixing this should be given low priority

3 = Major usability problem: important to fix, so should be given high priority

4 = Usability catastrophe: imperative to fix this before product can be released

Principle	Ranking
4: Design dialogues to yield closure	2
8: Reduce short-term memory load	3
2: Seek universal usability	4

4. Design dialogs to yield closure

With software designed for user interaction, design dialogues are essential, creating a sense of communication and clarity with the user. WebReg is filled with various functionalities dictated by the user. To establish a good relationship between the user and the software, the user must understand that these functionalities are working properly and to their expectations. The current primary functionalities that WebReg includes would be registering for classes, signing up for the waitlist of a class, modifying your current study list, and viewing them. Currently, WebReg lacks the design dialogues and formatting to have a proper feedback system that informs users of the success or failure of their actions, therefore enabling a poor relationship between the user and the software.

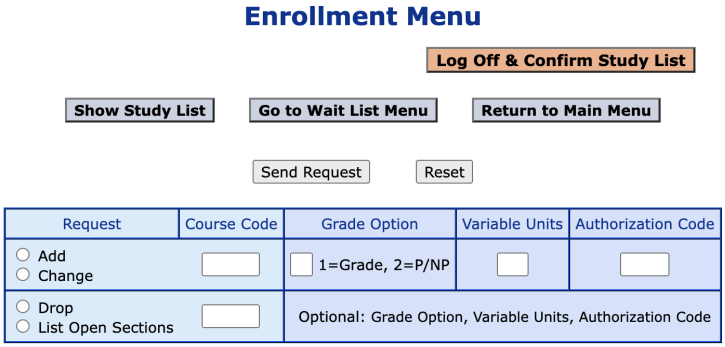
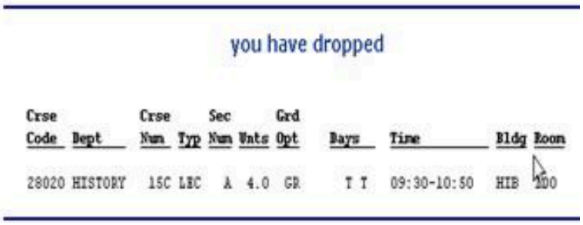


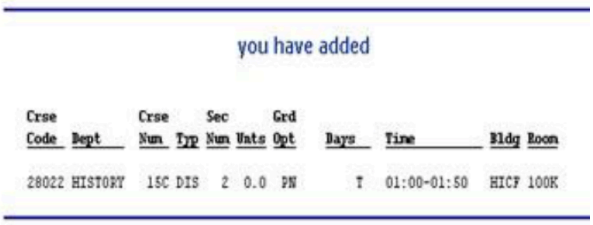
Figure 1: Screenshot of Enrollment Menu of WebReg

As someone enters the page to enroll for classes, they are met with three buttons of functionalities and immediately met with buttons to send a request and reset the interface. However, users need to select a course in order to send a request, hence disrupting the sense of flow of the application. Shneider suggests, "Actions should be organized into coherent sequences with a clear beginning, middle, and end." This implies that to have a seamless user experience, the application should have users search up the course that they intend to register for then provide them the ability to add the course to their study list.



you have dropped

Crse Code	Dept	Crse Num	Typ	Sec Num	Unts	Grd Opt	Days	Time	Bldg	Room
28020	HISTORY	15C	LEC	A	4.0	GR	T T	09:30-10:50	HIB	100



you have added

Crse Code	Dept	Crse Num	Typ	Sec Num	Unts	Grd Opt	Days	Time	Bldg	Room
28022	HISTORY	15C	DIS	2	0.0	PN	T	01:00-01:50	HICF	100K

Figure 2: Dropped Class Confirmation Page | Figure 3: Add Class Confirmation Page

Regarding the “end”, WebReg does provide confirmation dialogue for each user functionality, however it is extremely minimal. For ensured communication from the system to the user, the confirmation page for any functionality should have it made apparent and visible to the user. The confirmation UI is too similar to viewing the study list, therefore leading to a possibility of confusion for the user.

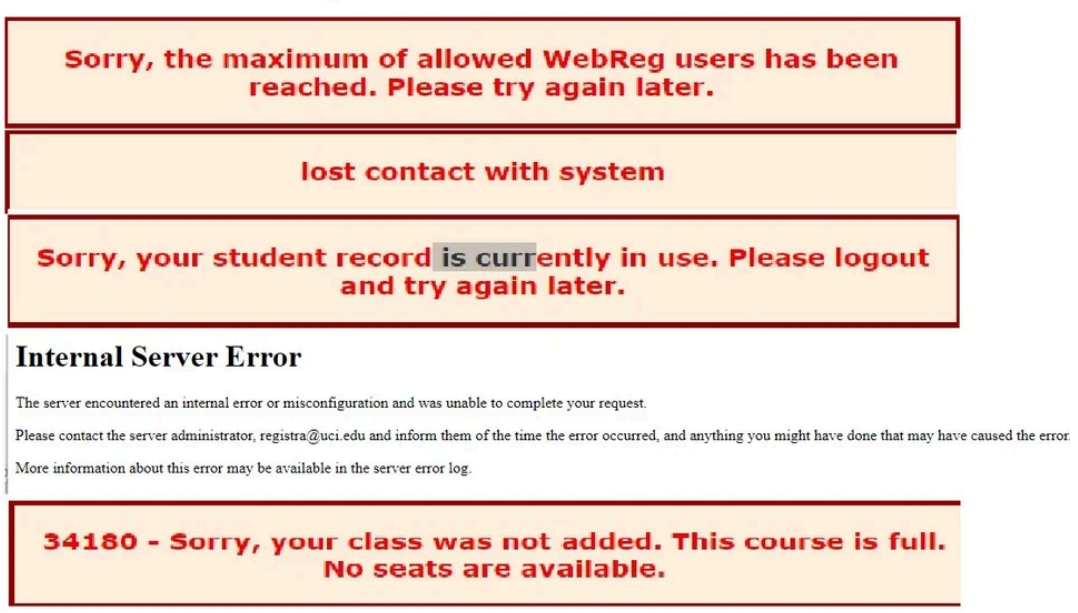


Figure 4: Images of Error Messages Presented by WebReg

This is an example of a clear error message made by WebReg. The bright red coloring with additional information provided is a good design choice for an error message. This is what the confirmation dialogue should resemble. However, to further dive deep into dialogs to yield closure, these dialogue messages should provide further clarification to keep it transparent towards the user. “Lost

contact with the system" provides no context to the user and leaves them confused as to why this error had possibly occurred, providing them a poor user experience.

While WebReg does provide design dialogues for certain actions, it may often lack the necessary depth and clarity to provide users with a sense of closure, thus undermining the overall user experience.

8. Reduce short-term memory load.

An application like WebReg requires users to know various pieces of information in order to input it in the software, such as the course code, enrollment time, capacities of each class and more. With requiring users to remember so much information, the cognitive load is increased for users, leading to frustration and error. Often, the user experience with WebReg is that users need to pull up a secondary application in order to register for their classes to remind themselves of what classes they plan on registering for.

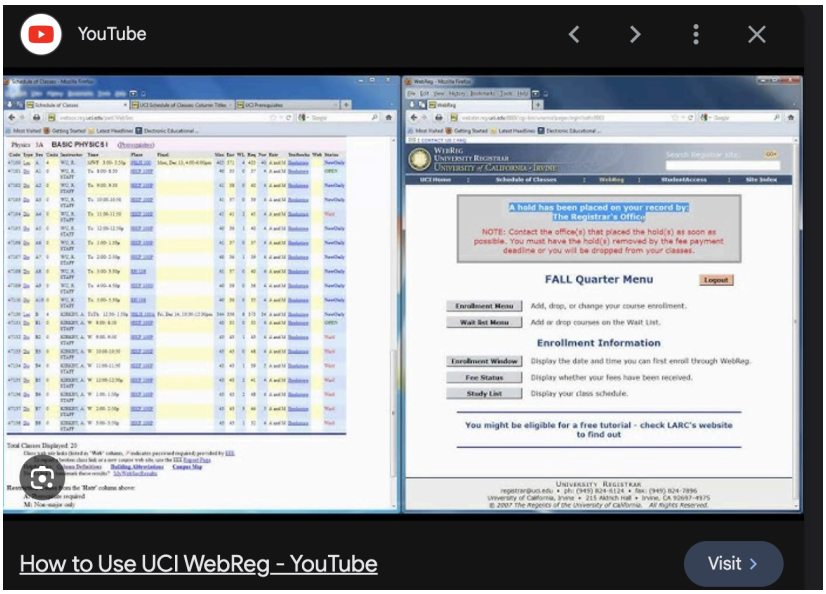


Figure 5: Youtube video with user having the registrar on the side and WebReg on the other

To reduce short-term memory load for the user, there should be some sort of implementation of the university registrar within the application. With that type of implementation, we would reduce the need for users to pull up another application to remember the classes they need to register for. Furthermore, to further efficiency within the application, WebReg should implement a calendar view of the classes registered. This will allow users full visibility of their enrolled classes, helping them to better manage their schedules and reducing the risk of registration errors.

2. Seek universal usability

Recognize the needs of diverse users and design for plasticity, facilitating transformation of content. Novice to expert differences, age ranges, disabilities, international variations, and technological diversity each enrich the spectrum of requirements that guides design. Adding features for novices, such

as explanations, and features for experts, such as shortcuts and faster pacing, enriches the interface design and improves perceived quality.

Here are some ways that WebReg passes this principle. For example, the webpage provides alt text when you hover over menu items, however it fails because the design has a very similar font, lots of white space, and it's hard to see what changes or not when a user does an action. The website also does not adjust its layout based on the device being used, and if a user tries to log onto their mobile device but at home webreg is open on their desktop, they will be logged out of both devices and not be able to login.

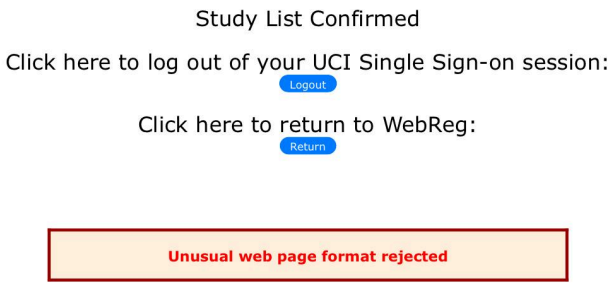


Figure 6: Picture of WebReg Failing format when logging onto mobile

To enhance universal usability, Webreg should prioritize a comprehensive testing framework that integrates automated testing, manual insights, and or direct user feedback. Testing will act as a cornerstone, methodically scanning the platform for compatibility and functional discrepancies across an extensive range of devices and browsers. As seen in figure 6, when a user tries to login through their mobile device, some devices are rejected, not allowing for accessibility for all users.

Accessibility Principles

Operable: Success Criterion 2.2.6 Timeouts

Users are warned of the duration of any user inactivity that could cause data loss, unless the data is preserved for more than 20 hours when the user does not take any actions. For example, when students are trying to look for classes while Webreg is open, Webreg automatically times the user out after a certain amount of time with no alert or warning. In addition, after being logged out, if you didn’t personally press a log out button, the website keeps you logged in internally, but externally will not allow you to sign back in.

Addressing the challenges associated with user session management and data preservation requires an approach that enhances both security and user experience. A potential solution involves implementing an advanced session management system that dynamically monitors user activity and provides timely notifications about impending session timeouts. This system would alert users well in advance of an automatic logout, offering them the opportunity to extend their session with a simple action, such as clicking a button or interacting with the application, thereby preventing unexpected data loss.

Understandable: Success Criterion 3.1.2 Language of Parts

Accessibility principle for the language of parts ensures that the language used on the web page is understandable. In many instances, programmers may need to shorten words or have the terms be on the page without much explanation as it is served as labels. The WebReg Enrollment Menu page is not often used by students enough because the only function of this page is for adds and drops during registration times. In this case, the words used here are independent from one another and make it difficult to

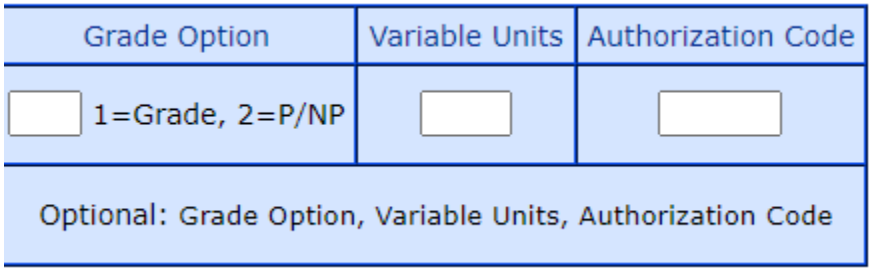


Figure 7. The right half of the Enrollment Menu which displays that these are optional

In Figure 8, WebReg includes the Grade Option, Variable Units and Authorization Code all on the same page as the Add and Drop classes. In the case of a user, having these words and boxes as stand-alone text boxes does not help reveal what the use of these boxes mean. Without the option of alt-text, these words do not provide enough context in the perspective of a user. In addition, it clutters up the page as the other texts on this web page are “Add course” and “Drop course”.

Conclusion

To conclude with our analysis on WebReg, the application has done a great job with the process of enrollment for classes, however along with all other applications, there are imperative improvements needed to provide an even better user experience. There were three usability principles that were highlighted for the betterment of the application. Firstly, WebReg lacks design dialogs to convey the proper messages to the user. Secondly, the user requires too much information needed to enroll classes and not enough functionalities from WebReg to assist with that. And lastly, there are several design choices that could be improved in order to enhance accessibility for all users. With the accessibility principles as a guideline, it is clear that there are areas where WebReg can improve. By prioritizing these improvements, WebReg can continue to be an important resource for students in enrolling for classes while ensuring that it provides an accessible and clear experience for all users.

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