

Introduction

My proposed project is to create a Tamper Monkey script that alters the appearance on Canvas within a web browser to make its layout more user friendly. Tamper Monkey is a Firefox plugin that allows the programmer to create scripts that alter the appearance of web pages. When the script is turned on, the appearance of a specified web page is altered when the user visits it. For example, during my internship at Accenture, I installed a script my coworker created that added an additional button to the webpage. The button fit seamlessly into the webpage, and when pressed, would take the user to a different related webpage. Another script my coworker created removed HTML elements from the page so that content that was being covered by the surrounding interface could be better viewed. After my experience using these scripts, I was inspired to create my own script that could potentially improve Canvas.

Objective

To research user interfaces for Learning Management Systems, receive feedback from Canvas users, and then create a Tamper Monkey script that changes the layout of Canvas so it better fits students' needs.

Materials and Methods

I sent out a seven question survey through Google Surveys. To get respondents, I sent the link to several different CPP affiliated Discord Servers. I received 16 responses. The questions were:

When you open up the Canvas website, what page do you navigate to first? How many clicks does it take you? What tasks do you need to complete with Canvas? What issues do you face while completing this task? What features of Canvas do you think are the most useful? Are there any features from Blackboard you wish Canvas had? Are there any other features you wish Canvas offered?

To host the script, I used the user script manager Tamper Monkey. This can plug into Firefox browsers, allowing a JavaScript program to run when an indicated page is visited.

Results

Part 1: Feature Canvas Already Had Implemented

For the first part of my project, I created and sent out a survey. The survey had 7 questions asking students about their experience using Canvas and what features they might want added to canvas. I also asked if there was anything from Blackboard that Canvas is missing. The survey received 16 responses and I used these results to decide what feature to implement. With these survey results, I found that many of the suggestions were already implemented in Canvas but were unknown to students.

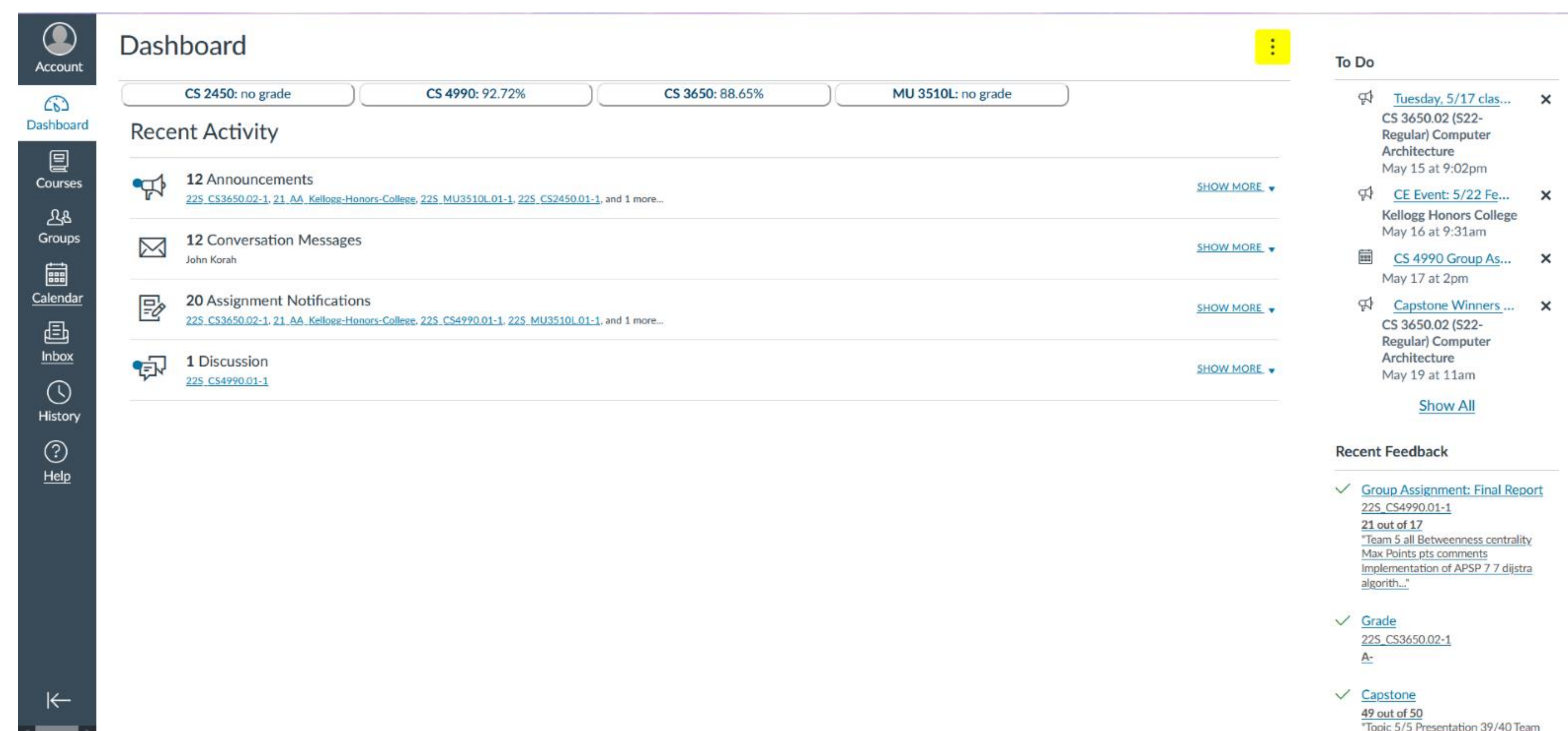
Students said they would like a reminder feature for assignments and a way to filter through different types of notifications. This functionality is already available, but not obvious. Students can switch their dashboard to a view that highlights recent activity by clicking an ellipse button in the top right-hand corner of the screen, where types of announcements are already filtered by homework, messages, assignments, and discussion.

Another response stated that canvas would be better if it disallowed students from "navigating to a closed class". There is a way to remove classes from your course list if you press the "All Courses" link in the course tab of the navigation bar, and then press the star icon.

Another student suggested; "an easier way to check all of my grades at a glance". There is a View Grades button on the bottom right of the dashboard that shows all grades for each class, however this is a click away and navigates you to a different page. Additionally, the button isn't very prominent on the screen, so this is not ideal. Another student asked for "a chat feature" inside their course. This also exists in a form through Canvas's messages, as well as a chatrooms embed that professors have the option to put in their course. Finally, a student asked for an "Ability to get to zoom links for lectures easier", which again is a feature that instructors have the option to place in their courses.

Part 2: Features I Implemented in my Script

The first feature I created in my script was highlighting the dashboard view button so it would be more visible to students. Many students mentioned that they would like to see their homework, notifications, and to-do list in one place. This page already exists in Canvas and can be accessed by switching the dashboard view. Highlighting this will encourage the user to explore this feature. Next, I added buttons which allow students to get to their courses faster, improving two of the dashboard views. I also placed their grades on these buttons, to give students a quick look at their grades.



Summary and Conclusions

While comparing the survey results to the features Canvas already has, I was very surprised on how many features are unknown to students. Many of the features that I thought I may be able to help implement were already present. This indicates that the issue with Canvas is not that it lacks features, but that these features are unknown to students.

Based on the survey results, I made a script that makes these features more visible: highlighting the dashboard view button, modifying dashboard views to have additional buttons to take students directly to their courses, and showing their grades. I found writing a Tamper Monkey script for Canvas was very tedious and frustrating. The HTML is filled with dynamically filled information and customized to each school and student. Each div classes looked akin to a keyboard smash. Additionally, if there are any updates to Canvas, like format changes, my script will likely break and need to be updated.

To conclude, I found that creating a Tamper Monkey script is not an ideal solution, which poses many more research questions.

Future Work

Future research could be done on how best to introduce new features to users. As seen with my survey results, many students are unaware of many of the Canvas features. Research could be done on why this is and how to make students more familiar.

Additionally, future research could be done on how Learning Management Systems can best give and present customization options to students. Canvas already has three dashboard views, however, none of these are perfect for every student, and most students appear to be unaware of their existence.

Finally, research could be done on why professors are not taking advantage of the optional features canvas offers, such as Zoom embed and chatroom features. As seen in my survey results, students want these features. Despite these options being available, professors and students are rarely taking advantage of them. There are many possible explanations why this could be; such as low awareness, difficulty of use, or perceived lack of value. Research could be done to find exactly why they are not being used, and whether making use of them is worth the instructors' efforts.

Acknowledgments

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