Assignment P1

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Abstract—This is the JDF for Assignment P1 for Human Computer Interaction. In this assignment we are asked to discuss an interface from the perspective of a processor model, from the perspective of a participant view, the process of submitting an assignment to canvas in terms of discussion of feedback cycles, and an activity that struggles with a large gulf of execution/evaluation.

1 QUESTION 1

1.1 Select one of the interfaces you use as a Georgia Tech student

I have chosen Canvas to be the interface of discussion. As a Georgia Tech OMSCS student who has finished eight classes so far, I have actively utilized canvas to finish my course work.

1.2 Discuss that interface from the perspective of the processor model of the user. The processor model is concerned with objective, measurable outcomes, so note the efficiency with which you can accomplish different tasks.

My main objectives typically when I login to Canvas is to look at grades, look at assignments, look at syllabi, look at lessons, and look at the files provided for a certain course. When I first login to Canvas I'm brought to a dashboard that shows assignments due for each of my courses. This is shown in figure 1 below. From a quantitative measurement standpoint I am able to very quickly access assignments that are due soon. It takes me about 1-3 seconds to process the beginning information, and scroll down to see other assignments I might be interested in.

In addition to that, everything I need access to can be found on the left hand sidebar. From a click time perspective I am able to very quickly access everything I need from my discussed main objectives. That is in order to access course syllabi, I can click on Courses > Class > Syllabus and this takes about 1-3 seconds to navigate through the links. I am able to perform the other tasks required above by following a similar series of steps by clicking on something on the left hand

side and then clicking on a series of other links from the new page that I'm brought to.
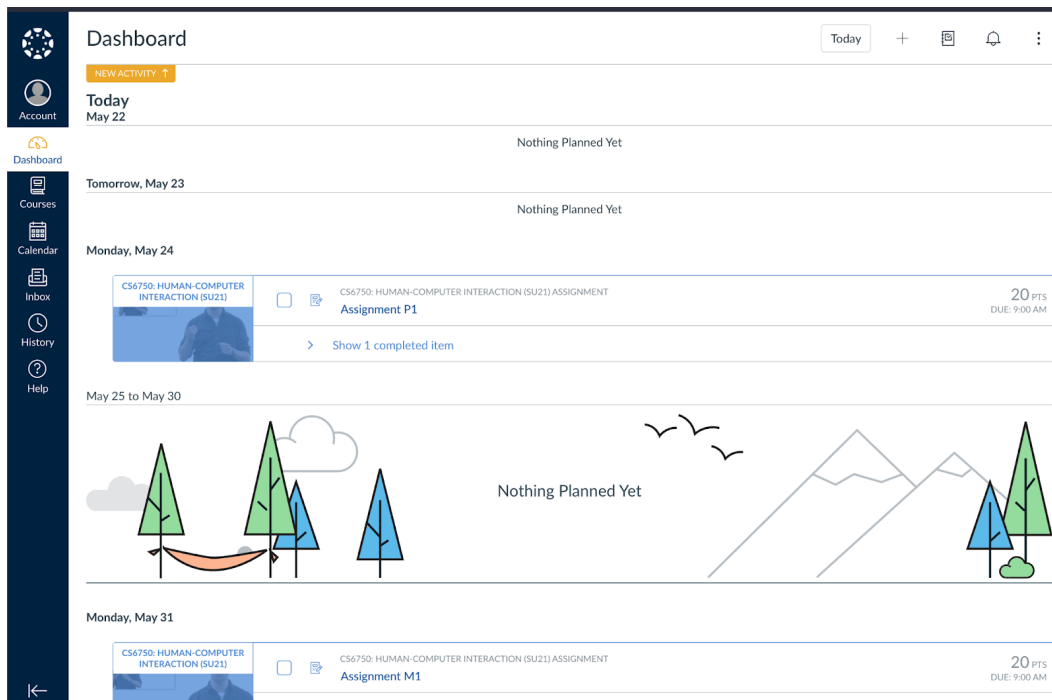

Figure 1—Screenshot of HCI Canvas Dashboard (first screen after login)

1.3 Discuss that interface from the perspective of the predictor model of the user. The predictor model is concerned with what you predict will be the outcome of your action, and whether you can interpret whether the outcome matched your prediction, so focus on how the user perceives and interprets what they should do and whether it was successful.

From a predictor model perspective, thinking about the thought process and predictions from the user. Looking at the canvas dashboard, there's not many indicators on where/what to press in order to access the class syllabus. In addition to that, each class has a different structure setup and utilizes canvas differently. Some classes utilize canvas to host their lessons, take quizzes, and etc. While others utilize Canvas only to host some initial material. I have learned to be adaptive and flexible with the system, however from a human computer interaction perspective with prediction in mind, the system currently doesn't take into account the predictor model of the user and requires a brute force approach to determine how to access certain aspects of a course. For example, the

first time navigating Canvas, it's not obviously clear that to access a syllabus you have to click on courses. And it's not clear if a course has useful files or not, because some classes I've had files that are useful and others had an empty section of files. It would be more beneficial if there were some indicators for important sections of a class.

1.4 Compare the insights you gained from each of the previous discussions. What sorts of improvements would the processor model suggest, and how do they differ from the sorts of improvements that the predictor model would suggest?

As previously mentioned, it's not very clear how to access a syllabus. It would be simpler if it showed your syllabi on the dashboard, because the syllabus is such an important part of each course for the OMSCS program as it will dictate what you will need to do over the course of the next few months. This would take the guesswork out of trying to find the syllabus for each course as the syllabus would be there on the first login page. The initial dashboard currently is not very useful, because you would need to have known about the assignments due already. Perhaps making the current initial page into an assignments overview page that can be accessed on the left hand sidebar would make more sense. Overall I think if the canvas dashboard was developed with the students priorities in mind, it would provide a better more effective experience. In addition to that, having indicators for important files/modules/etc for each class would be beneficial. For every single one of my classes, I've heavily relied on brute force and the piazza forums to find important information regarding the class.

2 QUESTION 2

2.1 Select one activity you perform with a computer interface in multiple contexts

I utilize my youtube music application on my Android phone in multiple contexts. I use it when I'm walking down the street, sitting at my computer, driving my car, when I'm eating, when I'm cooking, and wherever I can listen to music (almost every scenario in my life).

2.2 Discuss how the different contexts surrounding the app add different constraints or challenges to using the app.

When I'm utilizing my youtube music app, there are many different constraints and challenges. An interesting scenario is when I am cooking, my hands are busy or dirty with preparing and cooking food, so I will utilize Google Assistant to attempt to switch music.

Another scenario is when I'm driving I will utilize the Android Auto Youtube Music player integration to switch music. Here I'm using a car user interface between me and my car which is connected and powered by my Android device. I will either use the car user interface or google assistant because the interface is built in a convenient spot for me when I'm driving so that I can easily see the road and the car display user interface to switch music while still driving and using Google Maps to navigate to my destination.

When I'm at my computer, I'll actually utilize the web application through my browser on my computer and not use my Android phone to access the youtube music application. Or at a more physical level, instead of using Google Assistant with my voice or using my fingers on my Android device, I'll use the keyboard and mouse to navigate to Youtube Music. Because my attention is already focused on my monitors when I'm at my computer, it's easier for me to switch tabs/windows to access the youtube music web application to choose which music I want to listen to.

2.3 Describe how the design of the interface might be altered to perform differently depending on your context to overcome those constraints.

In the three scenarios I described above, the first interface when I'm cooking is through the Voice User Interface (VUI). This interface allows me to control and utilize the youtube music app through my voice and hearing. The Google Assistant will say what it's going to play so I don't have to look at the device and touch it to switch music. This is an extreme alteration of the design of the interface to overcome the cooking context constraints and challenges and shows a very clear attention to human computer interaction.

The second interface in the car is also an extreme alteration of the original interface on the phone as it's now connected to a display in the car. The interface is altered to have larger buttons and to be constantly displayed on the screen

while still showing the Google Maps navigation. By having larger buttons I am able to more easily switch between music without having to pay as much attention to where I'm pressing on the screen. In addition to that, Google Assistant is also activated so that I can control Youtube Music through the VUI in order to switch songs without having to take my eyes off the road.

The third example, through the computer web application, is more straightforward as it's more of an original concept. Through the computer, as my hands are already controlling the keyboard and mouse, navigating to a web browser and accessing the Youtube Music application through the browser Graphical User Interface (GUI) makes it more convenient for me. Or in other words it overcomes the constraints of having my hands and eyes tied to the monitors that my computer is connected to.

3 QUESTION 3

3.1 Describe the process of submitting an assignment to Canvas in terms of our discussion of feedback cycles.

The process of submitting an assignment to Canvas first starts with navigating to https://canvas.gatech.edu/. From there I will attempt to login to the Canvas portal, this involves utilizing the Georgia Tech identification login portal. Georgia Tech's system will then utilize a third party called Duo to perform multi-factor authentication and call my phone in order to confirm that I am Frank Hu. From there, I will answer my phone and press the number 1 after Duo tells me to press a number to confirm. Then I am logged into the Georgia Tech Canvas system, from there I look for the assignment on the dashboard as seen in Figure 1 above. I click on the assignment I'm attempting to submit my report to and then from there click on the button to upload my assignment and then click upload. Then I will receive a confirmation text saying that the assignment has been submitted.

3.2 For each of the three stages of the gulf of execution, describe how Canvas either successfully carries the student across that stage, or in what way it fails to carry the student across that stage.

Identify Intentions - In this scenario my goal is to access the course canvas to upload an assignment to the course or in other words to get graded for the work I did based on the assignment, assigned to me, by the teacher of the course I'm

taking. In order to do this, I need to login, find my course assignment, and upload the file to the respective assignment. Canvas helps do this by having a login portal, and showing all the assignments on the Canvas dashboard. From the Canvas dashboard I'm able to find my assignment easily to upload a file.

Identify Actions - The actions necessary to upload the files are clicking on the graphical user interfaces to navigate through the required steps. The logging in experience is similar to many other logging in experiences, so I am able to easily identify the actions necessary to do that, although the initial interface doesn't make it abundantly clear where to login (it's odd that I have to click a button to access the login page). From there, I easily see the assignments on the dashboard and am able to scroll through to find the assignment that is available. Since I see the assignments, I am able to easily identify that these are the assignments I need to complete and in order to upload a file I most likely need to click on the assignment accordingly. It isn't particularly clear that clicking on the assignment is how I need to upload an assignment though at first glance. I only know that I upload the file to the assignment once I've clicked on the link to the assignment and see the file upload module in the web application. From there, I can infer that this is most likely the area to upload the assignment. Sometimes this is wrong however, such as classes that utilize gradeoscope or other means to grade assignments.

Execute in Interface - Executing in the interface is fairly straightforward as all the links are similar to clicking on hyperlinks to access new pages. This is much like accessing anything else on the web, whether utilizing Google to search the web or using youtube. Clicking on a hyperlink to access a new part of a webapp or a new webpage is naturally intuitive for a computer user. If you were new to a computer, and weren't familiar with how hyperlinks work then it would be a difficult process to understand how to execute in the canvas interface. That is why I would argue that being computer proficient is a prerequisite for the Canvas system.

3.3 For each of the three stages of the gulf of evaluation, describe how Canvas successfully communicates the student the outcome of their action, or in what way it fails to communicate the outcome of their action.

Interface Output - When logging in, the interface will continuously change visually and prompt me for information as well as ring my phone in order to get

input from multiple sources to confirm my identity. From there, seeing the assignment and clicking on the assignment I will then click on upload, which will then pop open a system window to find a file to upload to the canvas web application. The interface for submitting the assignment shows me an upload file module on the web application. From there, it provides me a system window to upload the file, and ultimately a submit button to upload the assignment. It also provides me with Google Doc, Box, Dropbox, and Office365 file upload options. The Google Doc, Box, Dropbox, and Office365 all require 3rd party identification systems to login and then gather files from the cloud storage systems to choose to upload the file to Canvas.

Interpretation - The interpretation of the system when I click on the upload button, the automatic window opening allows me to realize that the canvas web application is asking me to utilize the system file manager to find a file to upload. After finding and clicking on it, the text on the page will change saying the name of the file, and then because of my previous background knowledge of utilizing other file submission tools, I will automatically click submit to finally upload the file. After that, the confirmation text that is displayed to me let's me know that I have finished uploading the file. It is easy to interpret the file upload module as it says file upload, and because of background knowledge on the cloud storage systems, I know that I can use them to gain access to the files in the cloud as well as on my local computer.

Evaluation - My evaluation of the interfaces are also described in the interpretation. If I didn't have a lot of background knowledge on common web application processes, I may not have known how to utilize the file manager to upload a file. And after clicking on a file, I don't receive any notification saying file uploaded, it only provides the name of the file on the web application and a submit button. When I click the submit button, I receive the submission text making me realize that the file has been uploaded. Ultimately I'm able to evaluate that I have multiple options to upload files to Canvas.

4 QUESTION 4

4.1 Select an activity from your regular life that struggles with a large gulf of execution or gulf of evaluation, especially due to a weakness of the interface involved in the activity.

An activity that I have issues with in terms of gulf of evaluation is when I attempt to utilize Android Auto with my Buick Encore 2017. I will connect my phone to my car, and from there, it should automatically connect to the car and display Android Auto. There is about a failure rate of 50% however, and I will need to continue to unplug and replug the phone in to attempt to connect Android Auto, and the only notification I get is that Android Auto was unable to connect please replug it in. I will then fiddle with the settings on my Android phone such as disabling bluetooth and clearing all active applications to attempt to connect my phone to my car and I am still not sure why Android Auto won't connect. The interpretation from the interface output of the Android Auto connection is insufficient as the provided solution doesn't resolve the issue and Android Auto will continue to provide the wrong solution to the user. Not knowing what to do to resolve the problem makes the gulf of evaluation wide if not impossible to cross.

4.2 Select a different, but similar, activity from your regular life that does a better job bridging its gulf of execution or gulf of evaluation

Attempting to access a web page and receiving an error message is typically much more clear compared to the Android Auto experience. The web page is able to bridge the gap by providing a multitude of error codes that explain why accessing the web page failed. If it was a 500 error then I know that there isn't much I can do and I should come back later. If it was a 403 error then I know that I need to login properly to access the web page.

4.3 Describe what lessons could be borrowed from the second activity's interface to resolve the wide gulf in the first activity.

If Android Auto could create a series of numbered error codes that I could map to and determine the best next steps that would make it easier for me to evaluate and interpret next steps to resolve the problem. Or Android Auto could even skip the error code and provide directions on how to properly resolve the problem instead of attempting to just replugin the usb cable which hasn't worked multiple times before causing frustration to the user.