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Intro to Human Factors

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Hierarchical Task Analysis

California State University of Long Beach makes use of the web system Beachboard. Beachboard is a content management system put in place to create and maintain a bridge of communication and contact between instructor and student as well as between student peers outside of the classroom. While class instruction is pivotal in a student's academic career, for a student to maximize their potential for success it is vital that the academic and learning process not be confined to the limited scope of scheduled classroom hours. Thus the overall system goal of Beachboard is to allow for instructors to communicate, interact and provide course material that can be accessed at the student's availability just as it is the goal to allow students to access course material readily and conveniently.

Much like any website, there is maintenance staff put in place to ensure that systems are running optimally as well as to alert the user population when there may be interruptions in what would be otherwise issueless functionality. This is required due to the fact, for the most part, all content posted on Beachboard is done by CSULB faculty and staff. There can be a major disconnect between instructor and student if Beachboard is not operating optimally, with impact varying from slight inconveniences to substantial detriment, determined largely by the degree to which the instructor implements the Beachboard system into their course.

As the instructor is given much more freedom and options in the use of Beachboard due to elevated access permissions as well as being the designer of the course which is being hosted, it is dire that the system be made easy and useable for the majority population which is the

students. Beachboard offers a multitude of functions that provide versatile useability for students, however the most important features offered to students via Beachboard, determined by frequency of use, is the retrieval and printing of lecture slides as well as the submission of assignments via Dropbox feature. The purpose of this task analysis is to train students who are new to using the Beachboard system to assure that course material and course work can be accessed and submitted in a clear and timely fashion. Training is required due to the consequences students may suffer when these tasks are not carried out correctly, such as a deduction in assignment points which could have been avoided were the interface more easily understood.

Instructors may or may not provide lecture slides for their students to follow along with in class or at home. Due to regulations on paper handouts as well as instructor availability, the student may not always be guaranteed a handout from their instructor. Beachboard allows the instructor to provide students with digital versions of handouts that the student may or may not print out on their own time at their own convenience. A hierarchical task analysis was performed to examine the steps required to retrieve and print said handouts.

Task Goal: Print out Lecture Slides

1. Log into Beachboard

1.1. Enter the Beachboard website into your browser.

1.1.1. Double Click browser icon on desktop

1.1.2. Input Beachboard URL into browser search bar

1.1.3. Press Enter Key

1.2. Input Campus ID and Password

- 1.3. Click Log-In button
2. Navigate to Correct Course and Lecture
 - 2.1. Find “My Courses” on the right hand side of the Beachboard Home Page
 - 2.2. Click the hyperlink with the correct course name.
 - 2.3. Click the “Content” button near the top left of the page.
 - 2.4. Search “Table of Contents“ for correct lecture.
 - 2.5. Click the correct lecture PDF link.
3. Print Lecture Slides
 - 3.1. Click the printer shaped icon at the top-left of the in-browser PDF reader.
 - 3.2. Wait for in-browser printer prompt to appear
 - 3.3. Prepare printer for print job.
 - 3.3.1. Turn printer machine on.
 - 3.3.2. Place paper inside printer.
 - 3.3.3. Check for ink levels.
 - 3.4. Click “Print.”

Cognitive Task Analysis

Task Component	Processor	Estimate
Locate printer shaped icon	Perceptual	100ms
Place mouse cursor on icon	Motor	100ms+
Click printer icon	Motor	100ms+
Observe printer settings	Perceptual	100ms

Turn on printer machine	Motor	100ms+
Place paper inside printer	Motor	100ms+
Recall printer ink levels	Cognitive	70ms
Check printer ink levels	Perceptual	100ms
Click “Print” button	Motor	100ms+

Total Estimated Time: 870 ms+

Following the task analysis of the subtasks and analyzing the Cognitive Task Analysis, Beachboard’s printing function appears to be quite user friendly. If there were to be any errors, they would most likely be Slip or Mistake based in nature. Also, the device that would likely lead to the incompleteness of the task is the user’s printer and not the Beachboard system itself as even the interface portion of printing is based on the browser.

Beachboard also works in the favor of student’s saving paper as well as the system allows them to submit assignments without the need to print from home or school. With a device such as a USB flash drive, the user population can print from any location as long as they have access to the internet as a USB port. A HTA was performed to examine the steps required to submit a file to Dropbox.

Task Goal: Turn in an assignment through Dropbox

1. Log into Beachboard

1.1. Enter the Beachboard website into your browser.

1.1.1. Double Click browser icon on desktop

1.1.2. Input Beachboard URL into browser search bar

1.1.3. Press Enter Key

1.2. Input Campus ID and Password

1.3. Click Log-In button

2. Navigate to Correct Course's Dropbox

2.1. Find "My Courses" on the right hand side of the Beachboard Home Page

2.2. Click the hyperlink with the correct course name.

2.3. Click the "Dropbox" button near the top left of the page.

3. Submit Assignment Via Dropbox

3.1. Find the correct assignment title

3.2. Click "Add a File" button.

3.3. Click the "Choose File" button.

3.4. Find correct file

3.4.1. Determine correct upload folder

3.4.2. Locate correct file

3.4.3. Click "Open"

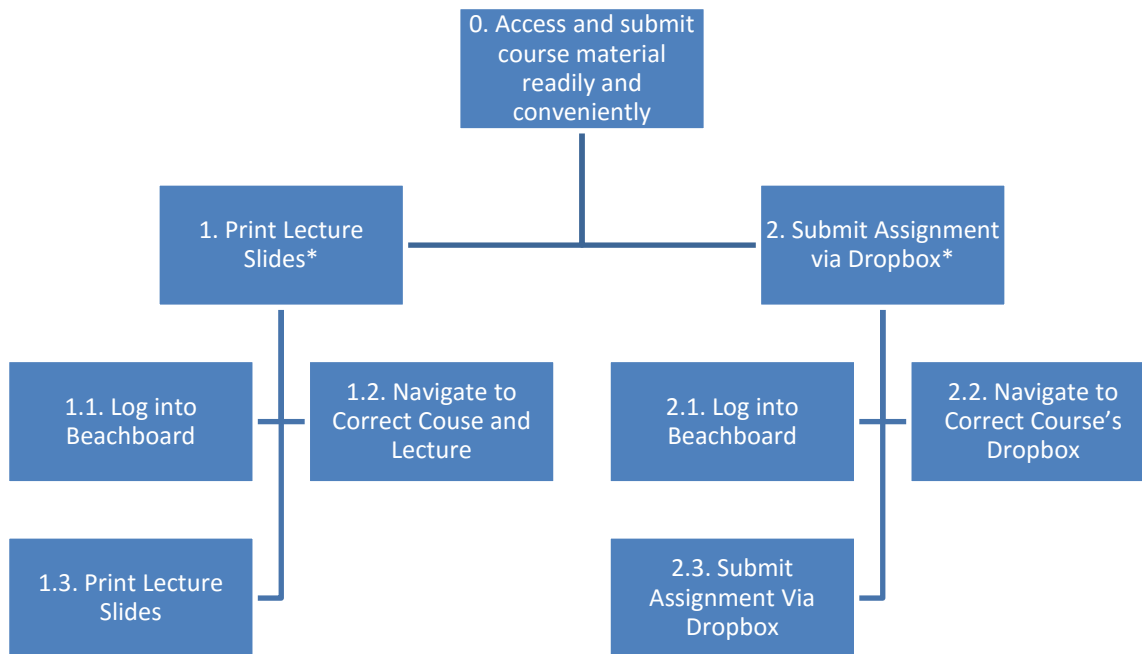
Cognitive Task Analysis

Task Component	Processor	Estimate
Determine the correct folder for upload	Perceptual	100ms
Recall correct file name	Cognitive	70ms
Scroll through files in upload folder	Motor	100ms+
Locate correct file to upload	Perceptual	100ms
Place mouse cursor on file name	Motor	100ms+
Click file name to select	Motor	100ms+
Locate "Open" button	Perceptual	100ms
Place mouse cursor on "Open" button	Motor	100ms+
Click "Open" button	Motor	100ms+
Locate "Upload" button	Perceptual	100ms
Locate "Upload" button	Motor	100ms+

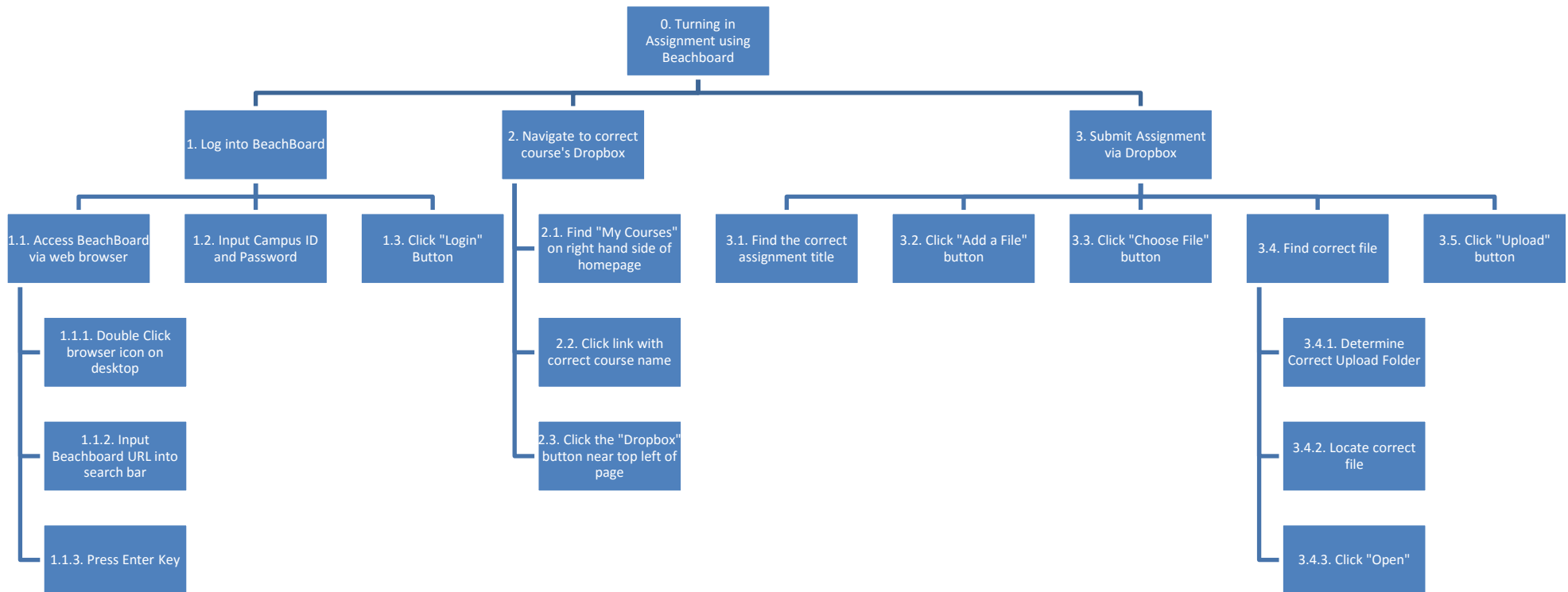
Total Estimated Time: 1070 ms+

Upon examining the subtasks and components that would lead to a successful submission of work, the Beachboard system possesses a user friendly interface; however it possesses room for improvement. For example, there is the potential to spend a large amount of time merely searching for the file that the student must turn in. A suggestion for improvement is the application of a word processing feature built into the system which can work alongside the Locker function. This word processing feature would allow for documents to be saved directly to the user's Locker and would allow for minimal guesswork and tedious searching in order to find the file meant for submission.

HTA – Overall Goal of Beach Board



HTA – Goal of Turning in Assignment



HTA – Goal of Printing out Lecture Slides

