Usability Study Report

Note: Don't forget to add evidence of the recordings, and that I can access the document from john.guerra@gmail.com

Author: Ke Chen

Application scope

Application description:
A degree planner for students in the Khoury Align MSCS program.
The app will allow students to select specializations they may be interested in, and see a recommendation of courses to take for the entire length of the program and in what semesters to take them. They also have the option to modify the recommended degree plan to suit their preferences (perhaps after speaking with an academic advisor).

Users - Target audience: (user personas, as specific as possible)
NEU Align Student

Data description: (what data is stored and displayed)
1. User Data stored
   a. id
   b. email
   c. password
   d. fname
   e. lname
   f. program
   g. plan
   User Data displayed
   a. email //in Profile
   b. fname //in Profile
   c. lname //in Profile
   d. program //in Profile
   e. plan //in Dashboard
2. Courses Data stored: All Master of Computer Science courses in Khoury College.
   Courses Data displayed: All course options in dashboard while creating a plan.
3. Plan Data stored: Each plan is an array of courses the user chose
   Plan Data displayed: Once the user create one, it will be displayed in Dashboard.

Main tasks - use cases: (specific, measurable, concrete)
- T1 - Tell me what the website is for.
- T2 - Create an account for this website.
- T3 - Create a degree plan based on recommendation.
- T4 - Delete a plan.

- T5 - Find the profile tab.
- T6 - Modify first name in profile tab.
- ...

Experiment

Preparation

Introduction
- Welcome participants
- Ask for consent to record
- Ask to think out loud
- Remind them that they aren't being evaluated, and that they can leave at any time
- Ask participant to think like the target audience

Prepare demographics questions (offer option to refuse to answer any of the questions. Only include relevant questions for the target audience)

Prepare recording setup (audio, video and screen)

Prepare Script of the tasks to be read to participants:
- Script for welcome:
  Hello, this is my friend XXX, we are going to do the usability study. This video will be recorded, and you're welcome to leave at any time.
- Script for T1
  Currently we are looking at the homepage, is it clear to you what the website is used for?
- Script for T2
  Do you know what you should do if you want to use this website?
  Could you please sign up for an account?
- Script for T3
  You are looking at the dashboard now. Could you please create a degree plan if you want to choose Data Science as your future career path?
- Script for T4
  Could you please delete the plan you just created?
- Script for T5
  Do you know where you can check your profile?
- Script for T6
  Do you know where you can edit your profile? Could you please update your first name?

Prepare Post questionnaire Likert Scales
- How effective was the application for T1
- How intuitive/easy to use was the application for T1
- How effective was the application for T2
- How intuitive/easy to use was the application for T2
- How effective was the application for T3

- How intuitive/easy to use was the application for T3
- How effective was the application for T4
- How intuitive/easy to use was the application for T4
- How effective was the application for T5
- How intuitive/easy to use was the application for T5
- How effective was the application for T6
- How intuitive/easy to use was the application for T6
- How effective was the application overall
- How intuitive/easy to use was the application overall
- Any final comments suggestions of improvement

Experiment Notes

Participant 1 - Neil
Demographics answers
Detailed notes
- Notes for initial approach: N/A
- Notes for T1: N/A
- Notes for T2: N/A
- Notes for T3:
  - It was hard for him to find the courses he wanted to choose. He recommended adding a search box for that.
  - He was wondering do we have to choose all 5 semesters courses?
- Note for T4: N/A
- Note for T5: N/A
- Note for T6: N/A

Post-test questionnaire results (Likert scales):
- Score for T1: 4 + 4
- Notes for T1:N/A
- Score for T2: 5 + 5
- Notes for T2:N/A
- Score for T3: 3 + 4
- Notes for T3:N/A
- Score for T4: 5 + 5
- Notes for T4:N/A
- Score for T5: 5 + 5
- Notes for T5:N/A
- Score for T6: 4 + 4
- Notes for T6:N/A

Participant 2 - Molly
Demographics answers
Detailed notes
- Notes for initial approach: N/A

- Notes for T1: Not very clear description.
- Notes for T2: N/A
- Notes for T3:
    - Layout of dashboard is kinda confusing.
    - No need to choose all 5 semesters courses.
    - Can you tell me if I create or delete a plan successfully?
- Note for T4: N/A
- Note for T5: N/A
- Note for T6: No need to change everything when editing a profile.

Post-test questionnaire results (Likert scales):
- Score for T1: 5 + 5
- Notes for T1:N/A
- Score for T2: 5 + 5
- Notes for T2:N/A
- Score for T3: 3 + 4
- Notes for T3:N/A
- Score for T4: 5 + 5
- Notes for T4:N/A
- Score for T5: 5 + 5
- Notes for T5:N/A
- Score for T6: 4 + 5
- Notes for T6:N/A

Participant 3 - Logan
Demographics answers
Detailed notes
- Notes for initial approach: N/A
- Notes for T1: N/A
- Notes for T2: N/A
- Notes for T3:
    - Hard to choose all courses because they are not in order.
- Note for T4: N/A
- Note for T5: N/A
- Note for T6: N/A

Post-test questionnaire results (Likert scales):
- Score for T1: 4 + 4
- Notes for T1:N/A
- Score for T2: 5 + 5
- Notes for T2:N/A
- Score for T3: 2 + 3
- Notes for T3:N/A
- Score for T4: 5 + 5
- Notes for T4:N/A
- Score for T5: 5 + 5
- Notes for T5:N/A

- Score for T6: 5 + 5
- Notes for T6:N/A

Times tamp	T1: How effecti ve	T1: How easy	T2: How effecti ve	T2: How easy	T3: How effecti ve	T3: How easy	T4: How effecti ve	T4: How easy	T5: T1: How effecti ve	T5: How easy	T6: How effecti ve	T6: How easy
2022/ 12/09	5	5	5	5	2	3	5	5	5	5	5	5
2022/ 12/09	4	4	5	5	3	4	5	5	5	5	4	5
2022/ 12/09	4	4	5	5	3	4	5	5	5	5	4	4

Prioritized list of issues and corresponding changes:

Summarize the most crucial issues and changes proposed

Issue: Dashboard Layout
Change: Created cards for each component, so that to make the dashboard more organized and easy to use.
Priority: (Must, Could, Should, Would): Must
Was implemented? How?
Yes.
Created cards for each component.

Issue: Course Select
Change: Make a new feature that the user can add all courses in one specific recommendation
Priority: (Must, Could, Should, Would): Could
Was implemented? How?
Yes.
When the user chooses a recommendation, he or she can add all courses into the plans.

Issue: Form labels are not obvious when it's selected
Change: Made modification to form label and input box style
Priority: (Must, Could, Should, Would): Could

Was implemented? How?
Yes.
Used Google login style as reference, Made modification to form label and input box style.

Usability Study Report

Note: Don't forget to add evidence of the recordings, and that I can access the document from john.guerra@gmail.com

Author: Jeremiah Asala

Application scope

Application description: The CS Degree Planner is an application that will allow Computer Science students to create course mappings for their degree program by selecting specializations they may be interested in and seeing a recommendation of courses to take for the entire length of their program and in what semesters to take them. They will also have the option to modify the recommended degree plan(s) to suit their preferences.

Users - Target audience:

The typical user of the application is a Computer Science student who is looking to create and manage degree plans/course mappings for their degree program. The following are some user personas and user stories:

User Personas:

• Ben was recently accepted to the Align MSCS program at Northeastern University. He's transitioning from a career in Law and has no idea what courses to take for a future career in tech. He needs an application that offers suggestions on what courses to take each semester depending on his desired specialization.

• Grace just completed her first year of the Align program. She realized that she is interested in a couple of CS specializations but is undecided on what path to pursue.

• Neil is an international student who just started his first semester of MSCS-Align program at Northeastern University. As an international student, he needs to make course plans for his internship or Co-ops arrangement.

User stories:

• Ben was recently accepted to the Align MSCS program at Northeastern University. He's transitioning from a career in Law and has no idea what courses to take. He can use this application to make plans for what courses he will take in each semester, because this app can offer suggestions for various specializations.

• Grace just completed her first year of the Align program. She realized that she is interested in a couple of CS specializations but is undecided on what path to pursue and what courses will best prepare her for the future. She can use this application where she can manage her degree plan(s) as she continues to explore her interests.

 • Neil is an international student who just started his first semester of MSCS-Align program at Northeastern University. As an international student, he is able to use a 12 months CPT to be employed for internships or Co-ops during the entire length of the program. So, he is actively looking for next year's internships and Co-ops. But there are strict Khoury academic and co-op policies that he has to follow before CPT approval and starting Co-ops. He can use this application as a planner where he can make eligible plans for graduating on time and taking advantages of the CPT length

Data description:

The data stored and displayed in the application is stated below:

1.   A comprehensive list of all courses Computer Science, Data Science, and Cybersecurity courses offered by the Northeastern University Khoury College of Computer Science. This includes:

    a.   Course code

    b.   Course title

2.   A list of career paths/specializations e.g. Software Engineering, Data Science, etc.

3.   A list of course recommendations for each specialization by semester

4.   User information like name and email

Main tasks - use cases:

Some of the tasks performed as part of the usability study are listed below:

- Navigate to a web application given a website Uniform Resource Locator (URL)

- Create an account by providing information such as name, email, and password.

- Log into the user account and view the dashboard.

- Interact with the application by creating and managing degree plans.

- View user profile and manage profile information.

- Delete user account or log out of the application

Experiment

Preparation

Introduction

- Welcome participants

- Ask for consent to record

- Ask to think out loud

- Remind them that they aren't being evaluated, and that they can leave at any time

- Ask participant to think like the target audience

Prepare demographics questions (offer option to refuse to answer any of the questions. Only include relevant questions for the target audience)

Prepare recording setup (audio, video and screen)

Prepare Script of the tasks to be read to participants:

- **Welcome message**: Hello _____ and thank you for agreeing to participate in my usability study. Over the next 10 – 15 minutes we will go through the web application and get your feedback on user experience and usability.

- At first glance, what do you see on the homepage and what does it tell you about the application?

- Script for T1

  - Can you sign up/create a new account?

- Script for T2

  - Looking at the dashboard, are you able to see the different sections and figure out their functionality?

- Script for T3

  - Can you create a plan, view a plan, and delete the plan?

- Script for T4

  - Can you navigate to your profile settings?

- Script for T5

  - Can you log out or delete your account?

Prepare Post questionnaire Likert Scales

- How effective was the application for T1/T2

- How intuitive/easy to use was the application for T1/T2

- How effective was the application for T3

- How intuitive/easy to use was the application for T3

- How effective was the application for T4/T5

- How intuitive/easy to use was the application for T4/T5

- How effective was the application overall

- How intuitive/easy to use was the application overall

- Any final comments suggestions of improvement

Experiment Notes

Participant 1

Demographics:

- Current Master in International Business (MIB) student at Hult University, Boston MA

Detailed notes

- User was willing to participate in the study and was happy to interact with the application

- User understood that participation was voluntary

- Upon navigating to the website, the user was able to read content on the front page and provide a summary of the purpose of the application

- User was able to create an account using their information with no hassle

- User was able to log into the application with ease

- User took a couple of minutes to get familiar with the interface. The user clicked on drop downs to view courses.

- The user had some questions about the creating degree plans.

- The user noted that they had no idea what courses to select for each semester.

- The user scrolled to the bottom of the page and found recommendations for courses

- The user noted that having recommendations next to select boxes for creating plans would be more intuitive and user friendly

- The user was able to create and delete degree plans. The user pointed out that the website was slow

- User was able to navigate to profile information

- User noted that finding the log out button/link was challenging

Post-test questionnaire results (Likert scales):

- How easy was it to create a user account and log in?

  - Score: 5

- How easy was it to understand the layout of the dashboard? Was it intuitive? Were you able to find what you needed/were looking for?

  - Score: 2

- How easy was it to log out?

  - Score: 3

Participant 2

Demographics:

- Current Master in Business Analytics (MBAN) student at Hult University, San Francisco CA

Detailed notes

- User was willing to participate in the study and was happy to interact with the application

- User understood that participation was voluntary

- The user had no issues figuring what the website was for at first glance

- User was able to create an account using their information with no issues

- User was able to log into the application with ease

- The user was able to scroll up through the dashboard to get a better sense of functionalities available.

- The user noted a description of courses would be useful while trying to select courses for semesters.

- The user scrolled to the bottom of the page and found recommendations but further noted that course description would be much appreciated.

- The user was able to create and delete degree plans. The user pointed out that the website was especially slow.

- The user also noted that after creating a plan, they were not able to map courses to the appropriate semesters

- User was able to navigate to profile information albeit by accident. The user noted that it was not easy to find the user profile

- User noted that finding the log out button/link was challenging

Post-test questionnaire results (Likert scales):

- How easy was it to create a user account and log in?

  - Score: 4.5/5

- How easy was it to understand the layout of the dashboard? Was it intuitive? Were you able to find what you needed/were looking for?

  - Score: 3/5

- How was the process of creating and deleting (managing) plans?

  - Score: 3/5

- How easy was it to log out?

  - Score: 3/5

Participant 3

Demographics:

- Former Master in International Business (MIB) student at Hult University, San Francisco CA

Detailed notes

- User was willing to participate in the study and was happy to interact with the application

- User understood that participation was voluntary

- Upon navigating to the website, the user was able to read content on the front page and provide a summary of the purpose of the application

- The was able to create an account with no hassle

- User was able to log into the application with ease

- The user was able to scroll through the dashboard describing what they saw. The user identified the "create plan," "recommendations," and "view plans" sections of the dashboard.

- The user was able to select 10 courses (two per semester for five semesters) and create a plan.

- The user was able to create and delete degree plans. The user pointed out that the website was slow

- The user changed some of the courses from the course selections and created more plans successfully.

- User was able to navigate to profile information with ease

- The user was able to find the "edit profile" button and edit some of their user information

- User noted that finding the log out button/link was easy, but a "log out" text would be more intuitive

Post-test questionnaire results (Likert scales):

- How easy was it to create a user account and log in?

  - Score: 5/5

- How easy was it to understand the layout of the dashboard? Was it intuitive? Were you able to find what you needed/were looking for?

  - Score: 4/5

- How easy was it to log out?

  - Score: 3/5

Prioritized list of issues and corresponding changes:

Summarize the most crucial issues and changes proposed

Issue: Users pointed out issues with the layout of the dashboard. Specifically, they noted that rearranging components of the dashboard to bring course recommendations close to select boxes for creating plans would result in a better user experience. Furthermore, upon plan creation, some users noted that they were not able to tell what courses were assigned to the different semester. A user further suggested including brief course descriptions.

Change: The major change was to bring course recommendations next to the plan creation panel to allow for ease of creating plans. Also, pagination was introduced to allow users to quickly shuffle through plans before selecting the appropriate courses for plan creation

Priority: Must

The change was implemented by creating a row in the main section of the page and creating 3 columns; one to view degree plans, another to create plans, and finally a third panel to view

recommendations. The main advantage of this change is that key functionalities now sit horizontally on the same plane, which makes it easy to glance at a recommendation detail to see courses. Further pagination was implemented to make it easy to shuffle through plans and recommendations without needing to scroll through the page. It improves overall usability

Issue: Some users noted that during plan creation, the action of clicking on a select box and being presented with a "million" options was not user friendly and made it difficult to create plans.

Change: The key change that was made to address this issue was to include a "use recommendation" button under each recommendation to allow the user to populate the select boxes in one click.

Priority: Must

The feature was implemented by introducing a button to the "Path" component. On click, the button takes an array of the courses of that particular recommendation (which is one of its props) and uses this list to change the options of all select fields to the courses of the recommendation. With this, the user can simply click on "create plan" to create a plan based on the recommendation. In a total of two clicks, a new plan is created.

Issue: At least two users pointed out that after creating a plan, they were unable to tell what courses were assigned to semesters.

Change: The key change was to have each course in a recommendation hold information about its assigned semester.

Priority: Should

The feature was implemented by going into the MongoDB database and adding an extra semester key/value pair to each course. Then, when course details are read from the database, the semester information is included in the display panel.

Informed Consent Document – CS5610 Web Development Project 3 Usability Report

Northeastern University, Khoury College of Computer Science

Name of Investigator(s): [John Alexis Guerra Gomez & TAs, Jeremiah Asala]

Title of Project: CS Degree Planner

Sponsor: N/A

Informed Consent to Participate in a Usability Study

I am inviting you to take part in a usability study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Key Information

- **Your consent is being sought for participation in a research project and your participation is voluntary.**
- **The purpose of the research is to identify any usability issues with the web application of interest by allowing users to interact and perform tasks on the application.**
- **The anticipated amount of time that your participation will take will be approximately 10 minutes.**
- **The procedures that you will be asked to complete will be:**

- ○ **Navigate to a web application**
- ○ **Create a user account**
- ○ **Log in to the application**
- ○ **Create and delete plans**
- ○ **Change user profile information**
- ○ **Delete account/logout**
- ● **We do not foresee any risks to you as you interact with the web application.**
- ● **We hope that you find the application useful and perhaps request access to the application for personal use (especially if you are a Computer Science student).**

Why am I being asked to take part in this research study?

We are asking you to be in this study because you are a current student who may use a degree planner to manage course mappings for your degree program or wish to use one.

Why is this research study being done?

State the purpose of the study in lay language.

The purpose of this research is to develop a survey that will be useful in identifying usability issues with a web application in order to fix those issues and provide a better user experience

What will I be asked to do?

If you decide to take part in this study, we will ask you to:

1. **Navigate to a web application. The URL of the web application will be provided**
2. **Provide a summary of what you believe the application is about.**
3. **Create an account by providing information such as name, email, and password.**
4. **Log into your account and view your dashboard.**
5. **Interact with the application by creating and managing degree plans.**
6. **View your user profile and manage your profile information.**
7. **Delete your user account or simply log out of the application**

Where will this take place and how much of my time will it take?

We anticipate that each task outlined will take an average of 2 minutes. The entire study should take 10 – 13 minutes for each participant.

The study will take place over a video conference call, preferably using Zoom.

Will there be any risk or discomfort to me?

We do not anticipate any risk or discomfort to you.

Will I benefit by being in this research?

While there is no direct benefit to taking part in the study, you may find the idea of a degree planner interesting and perhaps choose to use one during the course of your academic study

Who will see the information about me?

Your full name may be visible to the researcher and Supervisors (professor and Teaching Assistants) of the study. No further information about you will be accessible to anyone else.

If I do not want to take part in the study, what choices do I have?

You may choose not to sign this consent. You have the right to refuse participation before or any time during the study.

What will happen if I suffer any harm from this research?

You are under no obligation to participate in this study. You may outrightly refuse to participate or opt out of the study at any point during the study.

Who can I contact if I have questions or problems?

You may contact Jeremiah Asala at asala.j@northeastern.edu

Who can I contact about my rights as a participant?

You may contact Jeremiah Asala at asala.j@northeastern.edu or John Alexis Guerra Gomez at john.guerra@gmail.com

Will I be paid for my participation?

There will be no payment for participation in this study

Will it cost me anything to participate?

We don't any cost to you by participating in this study

Is there anything else I need to know?

We believe that all relevant information has been provided but you may choose to reach out to the researcher with questions.

This study has been reviewed and approved by the Northeastern University Institutional Review Board.

I agree to *[have my child]* take part in this research.

_____
_____

Signature of person [parent] agreeing to take part   **Date**

_____

Printed name of person above

_____
  _____

Signature of person who explained the study to the   **Date**

participant above and obtained consent

_____

Printed name of person above

I agree to be contacted for follow up or for future research studies

_____

Contact Information (email or phone)