Milestone 4

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Study Protocol for each technique:

- Heuristic Evaluation
    a. Allowed our testers to use the site freely to become used to it
    b. Requested our testers to perform certain tasks
    c. Had our users fill out an evaluation form after testing
- Cognitive Walkthrough
    a. Requested participant to complete selected benchmark tasks
    b. Requested that the participant voice anywhere where they found an issue with the site
    c. Issues were noted
    d. Benchmark tasks:
        - We chose these tasks because they gave a realistic walkthrough of what a real user would do when using our site for the first time
        - Have the participant sign up for an account
        - Have the participant sign into their account
        - Have the participant try to request a new password
        - Have the participant contact a member of DSS and send a message
        - Have the participant contact a doctor and send a message
        - Have the participant access a document via MyDocs
        - Have the participant upload a document
        - Have the participant upload a document, then find it in MyDocs
        - Have the participant select a MyDocs document, and apply one accommodation per class
        - Have the participant log out

- Predictive Evaluation (KSLM)
    a. Task:
        - Sign In (user already has account)
        - Upload a Document
        - Apply Accommodations
    b. Procedure:
        - Marked each action
        - Calculated total time via KSLM chart from Card et al 1983
    c. Results:

Actions	KSLM Action Name(s)	Cost	Cost	Multiply factor	Total Cost
Navigate to 'Sign In'	P + P1	1.1	0.2	1	1.3
Navigate to Email	P + P1	1.1	0.2	1	1.3
Type Email (15 chars)	15 * K	0.2		15	3
Tab to Password	K	0.08		1	0.08
Type PW (10 chars)	10 * K	0.2		10	2
Navigate to 'Sign In' button	P + P1	1.1	0.2	1	1.3
Navigate to 'Upload Docs'	P + P1	1.1	0.2	1	1.3
Navigate to document upload area	P + P1	1.1	0.2	1	1.3
Choose/Select file	P + P1	1.1	0.2	1	1.3
Navigate to 'Done' button	P + P1	1.1	0.2	1	1.3
Navigate to 'Apply Accommodations'	P + P1	1.1	0.2	1	1.3
Make 5 adjustments:					
Navigate to class	5 * (P + P1)	1.1	0.2	5	6.5
Adjust Accommodations	5 * (P + P1)	1.1	0.2	5	6.5
Navigate to 'Done' button	P + P1	1.1	0.2	1	1.3
Total Cost	19 * (P + P1) + 26 * (K)				29.78

- Retrospective testing interview
    a. Requested participant to complete the same benchmark tasks as above (Cognitive Walkthrough)
    b. Questioned the participants' behavior regarding the task after each task had been completed
    c. Behaviors were noted

- Think aloud evaluation
    a. Requested participants to complete the same benchmark tasks as above (Cognitive Walkthrough)
    b. Requested participants to speak aloud what they thought each button did before they completed an action
    c. Spoken thoughts were noted
    d. Participants were required to fill out a questionnaire after

Demographics of users

- Heuristic evaluators
    a. 1st Evaluator was a 20 year old Asian female.
    b. 2nd Evaluator was a 20 year old Asian male.
- Test Users *(We maintained user anonymity by replacing their name with a participant code (J1, C1, etc.))*
    a. Participant J1 was a 21 year old Asian male. The evaluation was conducted virtually, and used verbal “start” and “stop” indicators to tell when she began and finished a benchmark task. Participant J1 did not have any disabilities.
    b. Participant C1 was a 19 year old Latina with several learning disabilities. The evaluation was conducted virtually, and used verbal “start” and “stop” indicators to tell when she began and finished a benchmark task.
    c. Participant C2 was a 17 year old Caucasian male with several learning disabilities. The evaluation was conducted in-person, so no special indicators were needed.
    d. Participant M1 was a white male with ADHD. The evaluation was done via screen share (Discord). The participant was given an explanation of the procedure beforehand and walked through each step with clear directions (“start” and “stop” indicators were given).
    e. Participant M2 was a biracial female with no disabilities and no direct experience of the current accommodation system. The participant was given clear explanations and carefully guided through the process using “start” and “stop” indicators
    f. Participant A1 was a 20 year old Caucasian female with several mental disabilities that affected her learning. The evaluation was conducted virtually, and used verbal “start” and “stop” indicators to tell when she began and finished a benchmark task.
    g. Participant A2 was a 23 year old Black male with no documented disabilities or experience using university accommodations software. The evaluation was conducted virtually, and used verbal “start” and “stop” indicators to tell when she began and finished a benchmark task.

Description of tasks selected for the evaluation and why those tasks were chosen over other tasks

- The tasks selected for the evaluation were to test the efficiency of the core functions of DocuMed. We wanted to see how long it would take our participants to conduct each task that might come up when using the portal; everything from signing up to uploading a document and finding it in MyDocs. These tasks were chosen over others because we felt they gave us the best insights on how efficient and effective DocuMed is as a system. If times were too long, then the system must not have been as efficient as we had thought.

Discussion of the results

- The results of the overall test were very telling. Our evaluations gave us insight on a few minor changes that we could make in our second iteration of DocuMed. First and foremost, the left panel was not as functional as it could have been. The overall opinion on the color scheme was also up for debate amongst participants. Finally, the feature that users found the most difficult to use on average was the 'apply accommodations' feature.

- With these insights in mind, a second iteration of DocuMed might include several design changes. The first of which would be to change the left panel menu so that the selected item shows in bold rather than maintain its font weight. A second iteration may also look very different in terms of the color scheme used. Trying a more simplistic design here may help. Finally, maybe adding some animations to the accommodations page to indicate functionality better would help make the page more user friendly. Also a few participants noted confusion with the "Apply Accommodations" section, perhaps a second iteration of DocuMed could include a new name for the page and direct access via the sidebar. Furthermore, the lack of confirmation messages when attempting certain actions was also reported.

- In terms of what worked well, the data suggests that just about every other aspect of the DocuMed portal was executed excellently. Participants found that the site was too easy to use for them to have made any mistakes, and that the website flow was intuitive and natural. We utilized many collaborative online platforms to coordinate our work such as Google Forms, Google Docs, and Figma. Figma was an amazing tool that allowed us to create beautiful site mockups which easily translated to our actual design.

- With that being said, there were things that did not work too. Figma is an excellent tool but also had a bit of a learning curve. Many of the design ideas we wanted to originally implement, such as separate portal designs for DSS and doctors, simply were too ambitious to achieve even designing them. There were a few features that we wanted to include, such as a settings page, that got cut from the final prototype due to time constraints.

- All things considered, where would we go if we had the opportunity to further the DocuMed design? If we had that opportunity, we would likely spend more time on the patient portal instead of trying to rush out a doctor and DSS portal. While we collected a good amount of data on this iteration of the patient portal, we think it would be best to make the requested improvements, and maybe add a couple of new features (such as contacting professors) as well to improve functionality. We would also include accessibility settings to help those with certain vision disabilities.

Materials Used

Heuristic Evaluation Questionnaire:

https://forms.gle/TGeagGK1gzifNJbf7

Evaluation Process:

Pre-test questions

These questions were asked so that we could estimate how experienced our participants were in using a webapp, to adjust how we valued their data

1. How many times a week does the participant use a computer?

2. How does the participant feel about the current system of acquiring accommodations for medical issues for school?

3. Has the participant ever had to acquire accommodations for school?
   Y N

4. Has the participant ever had any difficulty obtaining doctor's notes to approve accommodations they were seeking?
   Y N

5. Does the participant think that a fully online system for obtaining doctors notes and applying accommodations for each of their classes would be a more ideal setup?
   Y N

Benchmark Tasks

these tasks were chosen because they gave a realistic walkthrough of what a real user would do when using our site for the first time

Time the participant in the following benchmark tests:

Task	Time taken (s)
Have the participant sign up for an account.	
Have the participant sign into their account.	
Have the participant try to request a new password	
Have the participant contact a member of DSS and send a message	
Have the participant contact a doctor and send a message	
Have the participant access a document via MyDocs	
Have the participant upload a document	
Have the participant upload a document, then find it in MyDocs	

Have the participant select a MyDocs document, and apply one accommodation per class	
Have the participant log out	

Post-Evaluation Questionnaire:

These were questions for our participants to judge where we went right with our site, and what could be improved moving forward.

https://docs.google.com/forms/d/e/1FAIpQLSf78yejIDMF8m8SzXxyn57HwRoqq2jHjlNlpMMhAMmpPVTrWA/viewform