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Team Website

# EasyAid Project Report

## Problem:

The COVID-19 pandemic has had a drastic impact on students and families in pursuit of higher education. Not only have students been widely isolated from campus, but the fiscal impacts of the pandemic have made paying for school and affording the necessities of online learning an enormous burden. With undergraduate enrollment falling by 2.5% in 2020 [1], taking steps to ensure that students continue to pursue education and begin pursuing education is critical for the post-pandemic world to resume.

With regular costs already being a massive burden to students and families in less unprecedented times, making sure that students are informed of the financial options they have is critically important. Yet, the resources available for students, caretakers, and families are difficult to understand and navigate. This inhibits students from getting the help they may be entitled to. This can be prevented by heuristic evaluation and deliberate attention to people's goals and reflecting that in the design. Our goal was to redesign the FSA portal for COVID-19 relief to create the optimal space to help students in need take advantage of federal programs that they might not be aware of.

## Design:

The design of EasyAid is centered around simplicity and task-oriented screens. This is unlike the current FSA website, which relies on a lengthy list of FAQs involving complex jargon. The purpose of the website is clearly indicated at the beginning of the web application;
"Did your financial situation change due to COVID-19? Find out what new financial aid programs you qualify for that can help you cover the cost of school".

If a student or parent needs to investigate the financial aid options available to them due to COVID-19 causing a change in finances, they'll be aware that this portal can assist them to meet their goals. This adheres to the principles of familiarity and consistency as described in "Designing User Experiences" in Chapter 5 [2]. As students and parents are largely aware of what these terms mean, they can effectively decide if this portal will help them in their goal.

The next portion of the web application is a checklist that includes all the required documentation needed to complete the FAFSA form and potentially document any changes to financial situations. A pain point that we discovered is the difficulty of knowing what materials were needed to complete FAFSA forms. By placing this at the beginning of the entire process, users can go through the potentially timely process of finding required documents. This lessens the odds of users giving up through the process in frustration over needing to leave midway to find their tax documents.

Following this is a login page, which is needed for students and parents to access previous FAFSA information. This follows conventional login patterns that should be recognizable. In cases where an account needs to be made or a password is forgotten, it is easily accessible.

While paper prototyping, we realized that our users might not be familiar with the association between this portal and the FSA. In an ideal implementation, we'd have this be a part of the FSA. As we're dealing with sensitive financial information, our application must look reliable. Unfortunately, that was difficult to convey with a prototype that didn't look similar to the FSA branding. In our implementation, we strove to closely adhere to the branding. Also, since our team members are in different time zones, we had to use Marvel as our paper prototyping tool. Initially, we thought making digital-paper-prototyping should be much efficient, but we discovered that it is much slower to make on-the-fly changes on the screen during testing than on papers.

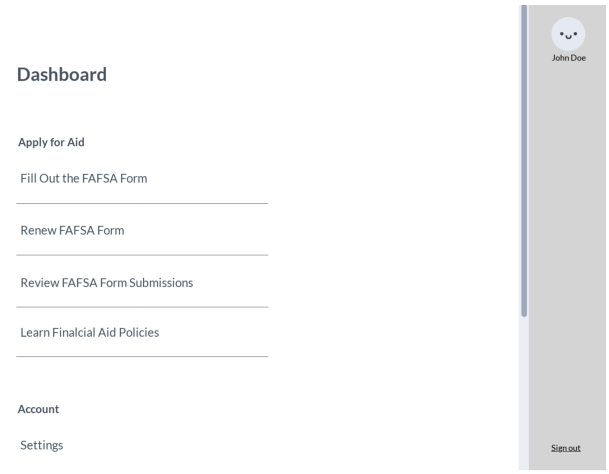



Figure 1. Home Screen (paper prototype)

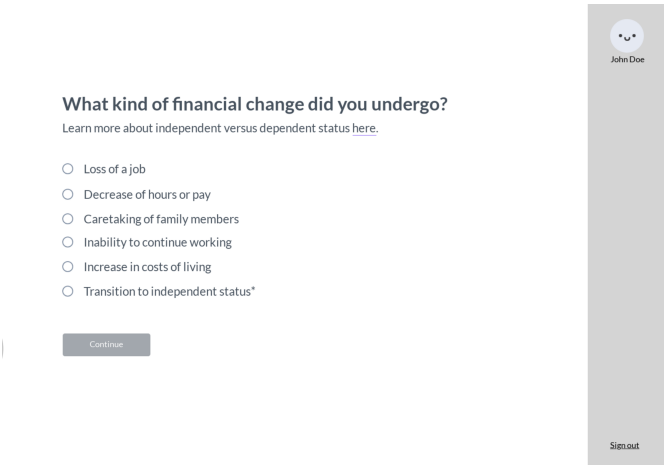



Figure 2. Form Screen (paper prototype)

Navigation also was a major issue we discovered during our usability-testing phases. We initially had the navigation on the right side as shown in the figure 1, which wasn't where many users immediately seemed to look as it was not the traditional convention. By moving the navigation

bar to the left, we were able to combine the FSA logo with the “home button”, so users could easily navigate back to the home screen by clicking on the logo. In addition, users could not navigate between different tasks unless they were at the home screen, so we included our four main tasks in the navigation bar so that users are able to move through the application much more easily, it gives users the freedom of control [3].

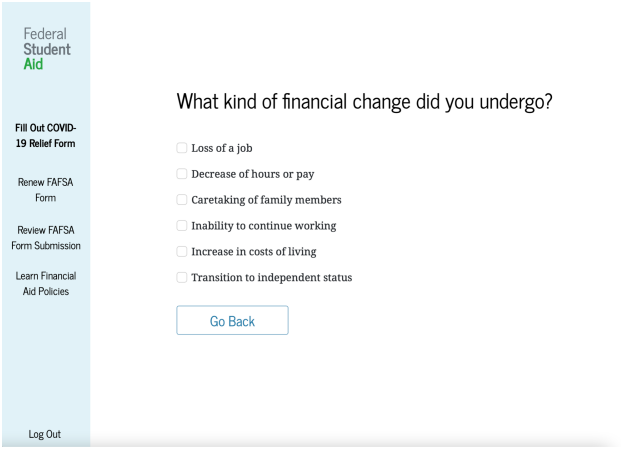



Figure 3. Form Screen (Final edition)

After the usability testing, instead of listing our four tasks as a normal list on the home page, we decided to lay out the tasks as four big buttons with icons to make our interface more task-oriented, it allows users to quickly locate what they are looking for once they logged in. Another important design decision we made was to make the “continue” buttons only pop up when the forms had been filled, so it will not give users a false affordance where they could click on “continue” without entering the required information, it also reduces the distraction as suggested in Chapter 21 of “Designing User Experiences”[2]. Also, to prevent input errors[3], we check the format of users’ input based on what’s needed. For example, an error message will show if an inputted email address is invalid; if an input box allows numbers only, then users are not able to input characters or anything else.

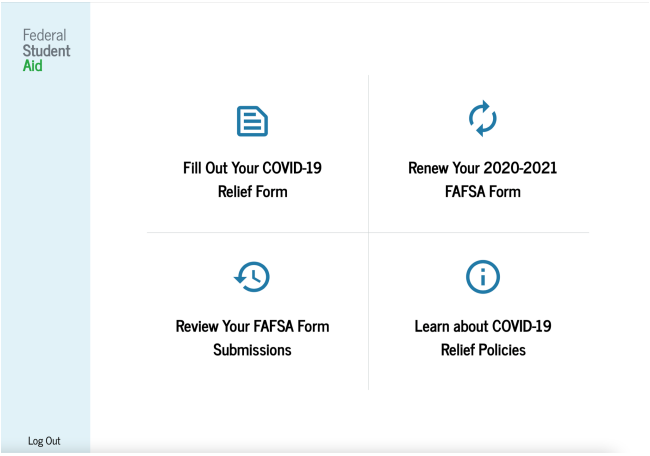



Figure 4. Home Screen (Final edition)

Through the heuristic evaluation process, we learned of a few pain points other teams had encountered. The major confusion that both teams encountered was brought by the

student/parent screen (figure 5.) as the users were asked to fill out the form for their partner, but they were not able to find where the “partner” option is. Therefore, we decided to remove the screen since users can still select who they are filling for later in the form. Other details about how we updated the interface based on the evaluation are included in the appendix.

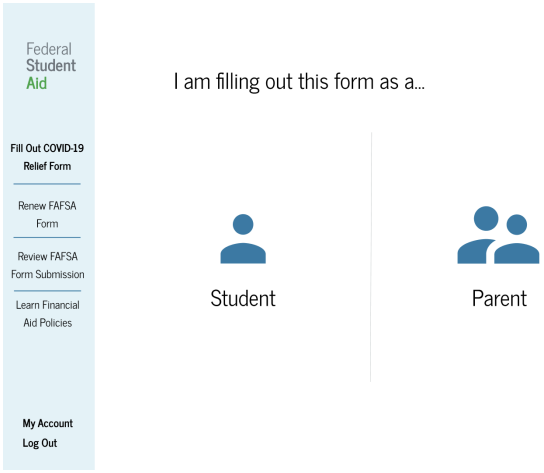



Figure 5. Student/parent Screen (Removed)

**Implementation:**

During the birth of the project before Yu joined the team, Ellen and Andre had thought about using Python or Java for the bulk of the project. With the addition of Yu Lin into the team and discussions that the team had in regards to what language or route to take, we took a closer look at web development languages.

As was suggested in the class, the sooner you start writing the code, the more reluctant you will feel to make design changes. Therefore, before starting the coding, we used Figma to do the prototype and went through several iterations to finalize our design, and coding happened in the last two weeks.

The decision to migrate over to Figma was critical as it allowed us to create design changes as quickly as possible before committing them to the code. These on-the-fly changes gave us the leverage we needed to be able to experiment without having to commit too many resources into an idea that might’ve not necessarily worked out.

In addition, plugins in the Figma allowed us to transform our design into HTML and CSS, which speeded up our implementation process quite a bit. Overall, the variety of convenient features that Figma offered allowed us to be able to develop this project at a much faster pace than we would’ve had we completely started from scratch.

One drawback of Figma was that the functionalities the program offered were somewhat limited. What we mean by that is that most of the functionalities in our original demo were canned responses so while the feedback we received from user testing was helpful, it was also limited in return.

Once we started coding, there were plenty of resources and libraries available online for web development, such as bootstrap, to help speed the development process.

**Status:**

Overall, we are pleased with the simplicity and task-oriented nature of our website. However, there is always room for improvement. Some of our evaluators suggested reordering the flow from the checklist of needed documents after log-in. Although there's a logistical reason for this (the checklist specifies having login credentials), revisiting this with more user interviews would be beneficial.

Similarly, some users wanted a clearer way to exit the form. This could be incorporated further, as we added the save timestamp to make users feel more comfortable with navigating away. We could create a home icon that is more clear than the FSA logo.

Also, one evaluator suggested that the covid policy page will become cluttered if the text gets longer in the future. This also has not been addressed since our current text fits in a single page without scrolling, we decided to keep it as it is right now. In the future, if the text gets longer, we will add a drop-down for users to efficiently navigate to the section they want to read.

**Evaluation:**

To evaluate our interface, there are a few ways we could effectively evaluate whether our interface was more successful. We would want to run interviews with both individuals and small groups as described in Chapter 7 of "Designing User Experiences" [2]. Individual interviews would consist of students and financial aid staff, while group interviews would be for both the student and their parents, partner, or provider. These interviews would be semi-structured to focus on how our implementation addresses their needs compared to the existing solution. We'd also want to explore pain points specific to our interface as a standalone product. Besides the interviews, we will also keep Nielsen's Heuristic Principles in mind when making further design changes.

**Reflection:**

In the future, we would want to expand this project to the entire FAFSA process, not just COVID-19 relief. As students ourselves, we are aware of how confusing, repetitive, and cumbersome the process is year to year. By taking the same approach of reducing the volume of information and keeping the application task-oriented, we believe we can improve this aspect of student support.

As previously mentioned in the evaluation section, we'd want to run more user testing with students & their parents in their interviews.

Ideally, we'd want to give submission results right away, instead of making users wait a time to find out what they qualify for. If it was possible to predict what aid students would be approved for, this would help students get the answers they need promptly.

If presented with the opportunity to redo aspects of the project, we would interview financial aid faculty at Northeastern to identify more pain points that might be hard for parents and students themselves to see. We'd also want to pay even more attention to accessibility, particularly color contrast and screen readers to ensure WCAG standards are met. Also, if we will use Figma again in the future, we will start by carefully stacking components in frames because the plugins for generating HTML creates "divs" based on the frames, it would bring us much less trouble when doing the CSS if we did the design in Figma more carefully.

**Appendix:**

**References:**

[1] Writers, S., 2021. *Coronavirus Impacts on Students and Online Learning | BestColleges*. [online] BestColleges.com. Available at: <https://www.bestcolleges.com/blog/coronavirus-impacts-on-students/> [Accessed 23 April 2021].

[2] Benyon, D., n.d. *Designing user experience*. 4th ed. Pearson, pp.117,154.

[3] J. Nielsen, "*10 Usability Heuristics for User Interface Design*," *Nielsen Norman Group*. [Online]. Available: https://www.nngroup.com/articles/ten-usability-heuristics/. [Accessed: 23-Apr-2021].

**Instructions:**

Zipped file:
https://drive.google.com/file/d/1Qfeu4tKFvXCSE2-7CoO5Twul1sSw9Axs/view?usp=sharing
Download the zipped file and unzip. Navigate to **final/html/welcome.html** to start at the beginning of the application, and you should be able to navigate through all the user flows.

**Briefing:**

Since people were impacted by the covid-19 pandemic, the need of applying for aid has been increasing. Our project idea is about redesigning the student aid website for corona pandemic relief. We felt that the existing website lazily lumped information together for the user to navigate through rather than taking the time to streamline information based on their needs. By redesigning the platform, it will make the aid-applying process a lot clearer than it is right now, and users can easily navigate and find what they need. Once you open the web we created, you should perform the tasks below on the interface as a way for us to discover our design flaws.

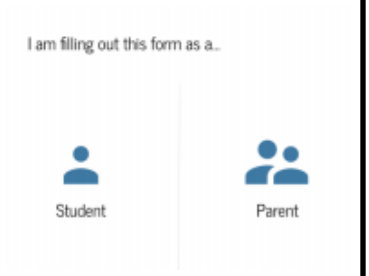
**Primary Stakeholders:**

Students attending higher education that interacts with the United States Federal Student Association

**Task Description:**

- Check off the list as you have gathered the necessary information to complete the COVID-19 relief form.
- Logging in to a FAFSA account and then logging out, the email and password can be anything.
- Complete the COVID-19 relief form as if your partner lost a job and submit the form.
- Review the Financial Aid Policies for financial aid to learn about how to stay eligible and the overall requirements.
- Review FAFSA Form Submissions, check the 2019 submission, and email it to 123abcd@gmail.com.

**Heuristic Evaluation Solutions to Team #5:**

<table>
<tr><td>Rank#1</td><td colspan="2">Problem: There is no clear way to exit the page while in the process of filling out a form.</td></tr>
<tr><td>Severity:Major</td><td colspan="2">Principles: Nielsen’s Heuristics: User Control & Freedom. When a user performs an action by mistake, they need a clear way to leave the page /stop the unwanted action.</td></tr>
<tr><td rowspan="2"></td><td>If a user starts filling out a form and in the process realizes they no longer want to proceed, there is currently no clear way to stop or “go back”. The user may have already inputted personal information that they do not wish to submit and would have to reload the page or log out to stop.</td><td rowspan="2"> 
</td></tr>
<tr><td>Recommendation: Add a way to quit filling out the COVID-19 Relief/FAFSA forms while in the middle of the process. Include a “cancel” or “stop filling out form” button.</td></tr>
</table>

**Solution:** We ended up removing this page as we felt it did not make sense in the context and only served to confuse the users. The next screen that it linked to has a “go back” button where it can take the user back to the previous page.

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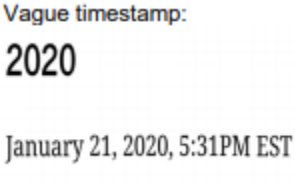
| **Rank#2** | **Problem:** Form submission history has dates but it isn't clear what form the dates correspond to | |
| **Severity:**Major | **Principles**: Nielsen's Heuristics: Visibility of system status | |
| | When looking over the past forms you've submitted on the website, it does not make it very clear what the dates related to the forms are. Do they mean the last time the form was submitted? Or the last time it was edited? Or the first time it was submitted? It is somewhat vague, and more clarity would make for a more pleasant user experience. |  |
| | **Recommendation:** Differentiate between these three different dates - date created, date last edited, date last submitted. Also specify which date is which. | |

**Solution:** The date means the date a form was submitted. To avoid the confusion, we added "Form submitted on " before each date, so the users can know what these dates indicate.

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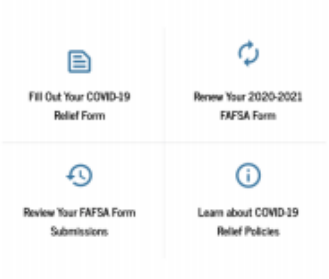
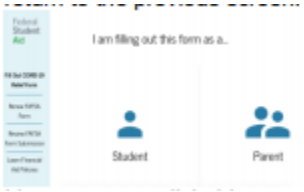
| **Rank#3** | **Problem:** There was no documentation regarding which form a user needs to fill out for their specific circumstances. | |
| **Severity:**Minor | **Principles**: Nielsen's Heuristics: Help & documentation. In some cases, it is important to provide documentation to help users understand how to complete their tasks. | |
| | The user may not be fully aware of which form(s) they need to fill out depending on their circumstances. This may lead to confusion and the completion of unnecessary tasks. The user also may not be aware of the exact benefits of filling out these forms upon first glance at the main screen (with the 4 options to either manage forms/view information regarding relief). |  |
| | **Recommendation:** Provide a short informational paragraph/text box with instructions on why a user would need to fill out a particular form. | |

**Solution:** There's only one menu item titled COVID-19 Relief Form and one for FAFSA itself, but if this were to come up in further user interviews we would investigate this concern further.

<table>
<tr><td>Rank#4</td><td colspan="2">Problem: There is no button to go back to the main screen that has all four options</td></tr>
<tr><td>Severity:Major</td><td colspan="2">Principles: Nielsen’s Heuristics: Recognition rather than recall. Minimize the user’s memory load by making elements, actions, and options visible.</td></tr>
<tr><td></td><td>The website had four main pages and the main screen that shows all these pages as options. Once you click on an option, there is no clear way to get back to the previous screen. I knew to try the “Federal Student Aid” logo in the top left corner, which did what I expected, however not all users would recall that this is sometimes a button to go back to the main screen.</td><td rowspan="2">There is no clear way to return to the previous screen:<br>  <br><br>I knew to try to click this to get back but not all users will know that:<br>  <br></td></tr>
<tr><td></td><td>Recommendation: Include a back button when you are on one of the four options screens (Fill out COVID-19 Relief Form, Renew FAFSA form, Review FAFSA Form Submission, Learn Financial Aid Policies).</td></tr>
</table>

**Solution:** Since we removed the student/parent screen, the next screen that it linked to has a “go back” button where it can take the user back to the previous page. Also, the user can still go back home by clicking on the top-left logo.

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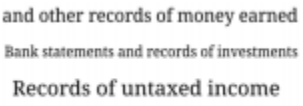
|---|---|---|
| **Rank#5** | **Problem:** Some items in the list of what you need are not clear or not specific enough | |
| **Severity:**Major | **Principles**:: Nielsen's Heuristics: Match between system and the real world. Speak the user's language and use words and concepts familiar to the user | |
| | The first thing that a user has to do when they get to the site is gathered the information they will need to fill out the forms. However, the naming of some of the documents is confusing and a user may not know for sure if they have the correct information before they begin. | Examples of confusing language:<br>  <br> |
| | **Recommendation**: Be more specific about what documents are required. Use the actual document names or codes that they might see on the paperwork (eg. 1098-T). If there are many different forms that fall into the category, provide some examples in a tooltip so people can see that information if they are confused. | |

**Solution:** We elaborated on the language used by giving examples. Another option could be using a tooltip if a detailed explanation is too long.

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| **Rank#6** | **Problem:** Log out button is not visible | |
| **Severity:** Cosmetic | **Principles:** Tog's Principles of Interaction Design: Discoverability. If the user cannot find it, it does not exist. | |
| | It was difficult to find the log out button because the screen was fairly bare but there was nothing indicating log out. It turns out you have to scroll to the bottom of the screen to see it, even though there isn't much else on the screen and the button could easily be placed in a visible location without scrolling |  |
| | **Recommendation**: Move the log out button to the top right-hand corner so it is always visible if you haven't scrolled down at all. | |

**Solution:** This was a problem coming from the Figma prototype where it did not adjust the screen resolution when displaying the pages. In the actual HTML, the logout button should be visible on the lower-left.

<table>
<tr><td>Rank#7</td><td colspan="2">Problem: The sign up and forgot password action items on the first page are difficult to see.</td></tr>
<tr><td>Severity:<br>Cosmetic</td><td colspan="2">Principles: Nielsen’s Heuristics: Consistency and Standards.</td></tr>
<tr><td></td><td>Given that many users will be using this interface for the first time and needing to create accounts, not having that being visible could be very problematic. Moreover, given that this is a low usage interface i.e. users will not be regularly logging in the long term, meaning forgotten passwords are likely to be more common than say a high usage interface. Both of these action items are way too subdued in color scheme and text size for their importance.</td><td rowspan="2">The action item’s text is the same color as any other text:<br>  <br></td></tr>
<tr><td></td><td>Recommendation: Make the links to those two pages more obvious by using a color that stands out more and a text size to match.</td></tr>
</table>

**Solution:** We removed the links of “forgot my password” and “create an account” since it is not part of our main tasks. We decided to remove everything else that’s not going to be functional in our interface to avoid errors.

**Heuristic Evaluation Solutions to Team #21:**

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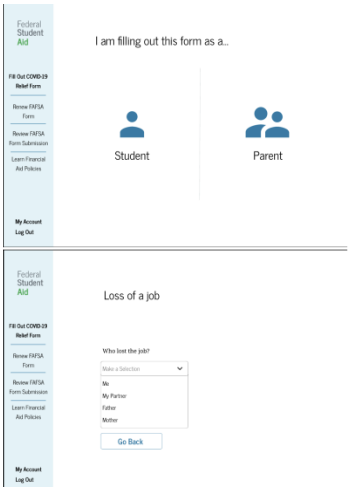
| **Rank#: 1** | **Problem: Problem: Fill the form out for ___ is somewhat confusing to accomplish** | |
| **Severity:**Minor | **Principles**:<br>Nielsen's Heuristics #4: Consistency and Standards | |
| | When completing the task of "complete the form as if your partner lost a job" it was confusing to have to choose between the student or parent options. After deciding on the student option and going through one other step I was asked to select who the form was being filled for. |  |
| | **Recommendation**: I think it makes more sense to change the screen to have the options to "Fill form for self" and "Fill form for another" in the first case there is no need to ask for who the form is being filled. In the second case, the first thing to be asked is who the form will be filled for (a partner, child, etc.) If the "Student" criteria are essential, then I suggest the user be informed that before they even make an account. | |

**Solution**:
We ended up removing this student/parent page as we felt it did not make sense in the context and only served to confuse the users.

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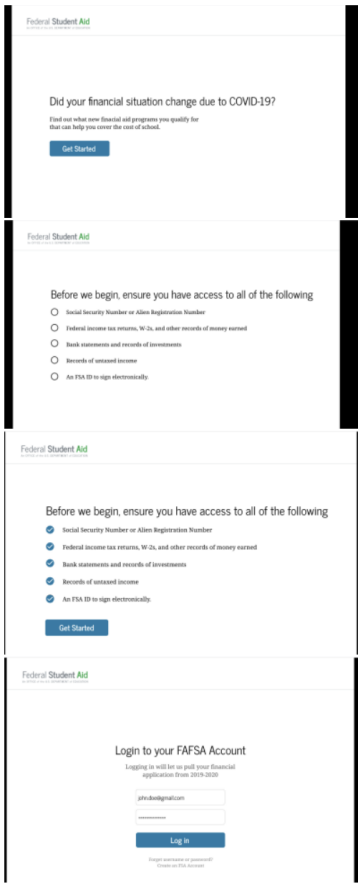
| **Rank#: 2** | **Problem: User is asked to check if they have forms before even signing in** | |
| **Severity:**Minor | **Principles**:<br>Nielsen's Heuristics #1: Feedback | |
| | Upon accessing the link given in the instructions the user is asked to confirm that they have access to all the listed forms before being asked to sign in. |  |
| | **Recommendation**: This step should probably be moved to a more relevant position if it is only needed for before the account is made then maybe only request it during account creation. If it is needed every time, they access a specific part of the interface during a task, then only ask for it then. In addition, there are no options/assistance links for the case in where a user does not have access to a listed form. In which case they will be stuck and unable to complete the task. | |

**Solution**:
We added a login button on the top-right corner to allow old users to quickly log back in without clicking through all the checkboxes every time.

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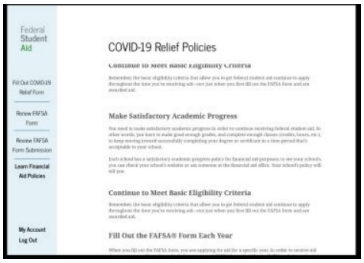
| **Rank#:** | **Problem: Information screen could get cluttered and annoying to navigate if more is added.** | |
| **Severity:**<br>Cosmetic | **Principles**:<br>Nielsen's Heuristics #7: Shortcuts/Flexibility/Accelerators | |
| | The relief policies page has a scrollable list of text entries which could be painful to navigate if it was expanded at all from its current state. |  |
| | **Recommendation**: A table of index at the top or making all of the entries a drop down would greatly improve the navigation when searching for specific information. | |

**Solution**:
Since the current policies are not overlong to navigate, it fits in a single page, so we decided to keep it as it is for now. In the future, if the policy gets longer, we will want to add a drop-down so that users can easily find the section where they want to read.