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Human Centered Design

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1.0 Overview

Drug and Adverse Reaction Information (DARI) is a data driven application based on reported adverse events and drug information. After determining the niche of our application, we ensured that our focus would be relevant to our end users through a systematic design process and several user interface design heuristics.

2.0 Techniques

The first step in TechFlows Human Centered Design process is to gather as much information as possible from the user group and use that information in the process of our design techniques.

Brainstorming and Preliminary Research. From interviews and preliminary research on the topic, the user interest centering the drug risks and histories that have affected other users served as a priority need to address. While we found that expert users such as individuals who regularly take prescription medication - are very familiar with reading labeling information, reinforcing information about the drug would be a benefit for our users to know. Essentially, users would benefit from a data mix to shows adverse events data along with a more streamlined *labeling* data in order to reinforce their decision making based on the searches a user initiates. Figure 1, illustrates the working session for the vision discussion.



Figure 1. Vision Brainstorming Session

User Personas and User Stories. In order for the team to consolidate an understanding of our end users, we began with a user persona session and visualized their user stories through storyboards depicted in Figure 2. We referred to these user stories throughout the design process. Below is a list of the user personas:

- Consumer
- Healthcare Professional
- Legal Professional

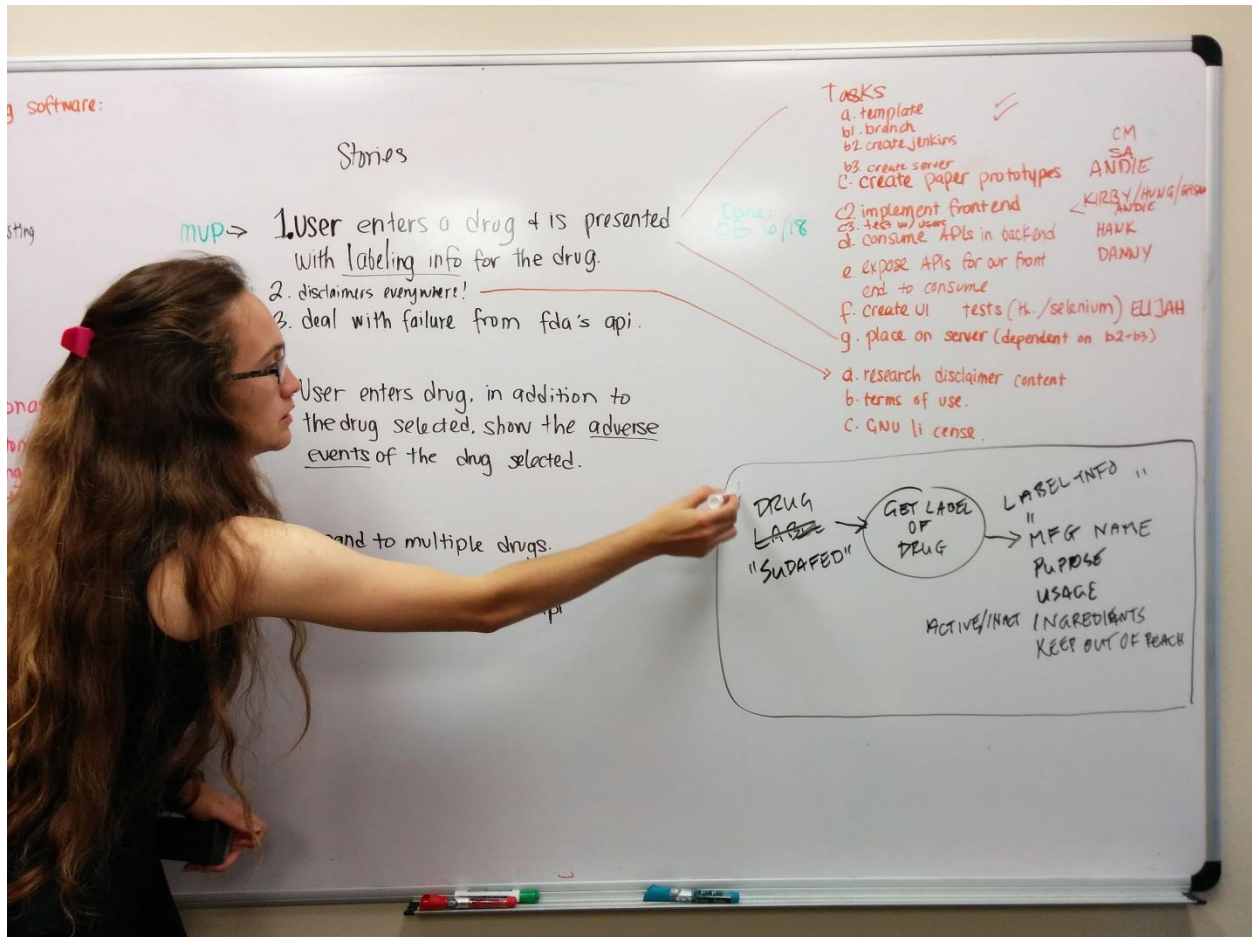


Figure 2. User Persona Session

3.0 Three Human Centered Design Techniques Used

3.1 Rapid Prototyping and Feedback

Low fidelity prototyping afforded instant human-centered feedback. Several iterations on early paper prototypes were evaluated and adjusted after critique from users and the team. User feedback early in the design process allows for agile changes before fully implementing the prototype.

3.2 Usability Testing

- Further usability testing on the high fidelity prototypes and final product provided insight into the flow of the application and how our users interact with the product.
- Please see the usability testing document for more details.



Figure 3. Usability testing with a consumer

3.3 User Interface Design

For the user interface design process we followed our standard process, based on the processes defined in usability.gov and outlined below:

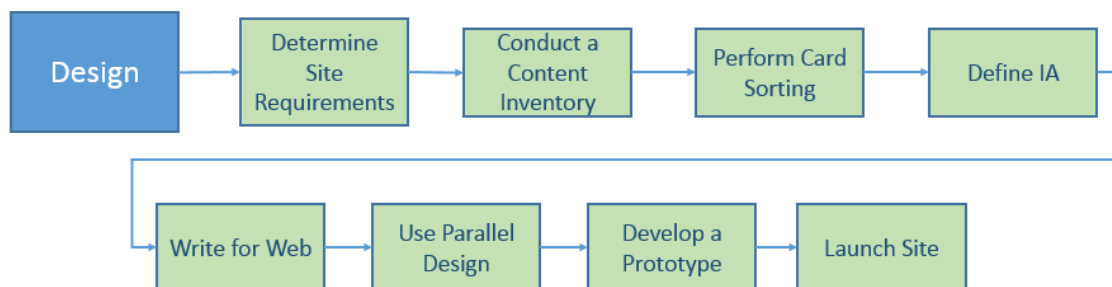


Figure 4. User Interface Design Process

Our user interface design approach coupled with our design principles and standards results in a user centric, easy to use application allows the user to easily search for the data they are looking for in the case of the DARI application.

4.0 Design Principles

This section will break down several design principles which our website application achieves. By abiding to these heuristics, we afford the application with features that prioritizes user needs and behaviors to decrease the learning delta and increase efficiency of use.

- **Visibility:** The primary functions of the application are made clearly visible to the user. For example, the initial search is provided as the only visible function on the landing page because other pages are hidden to the user until the query is evoked. We ensure not to clutter the page with too many features on any one section.
- **Feedback:** Whenever the page is loading, we provide visual feedback back to the user. Other forms of feedback is given by the correct error messages if the data does not load correctly.
- **Constraints:** Restricting the user from entering invalid search queries through the auto-complete feature guarantees only valid searches. We constrain the user to the top suggested options inasmuch as the user continues to type in correct spellings of the beginning search word.
- **Aesthetic and Minimalist Design:** White space allows for a streamlined look of the information with a 3-color palette to keep the application “easy on the eyes”. The use of other colors in the adverse event section attracts the user’s attention while the minimalist look makes the information easily legible and not overwhelming.
- **Error Prevention:** The auto-correct feature prevents invalid searches. If the entire application does not load or if there are loading issues, the application does not display any information.