CS-571 Building User Interfaces, Fall 2021, Professor Yuhang Zhao

Javascript *β* (2 Points)

Empathy-Driven Redesign Using Component Libraries

GitHub Classroom Starter Code for JavaScript ß

In this assignment, you will practice design thinking and visual design methods to improve upon Badger Bank. You will complete this assignment in three parts.

In the **first** part, you will practice using the "empathy" method (the think-aloud protocol) that we have discussed in class as a method that will give you the most bang for the buck in terms of understanding user needs, preferences, and behavior. Specifically, in think-aloud, you will (1) identify users who represent your target group of users, (2) identify/develop tasks that represent the functioning of the target system, (3) observe users as they perform the tasks, and (4) analyze your data to develop design insight.

In the **second** part, you will practice the ideation and visual design principles you have learned in class to turn your design insight in the first part into a redesign of the Badger Shop website you have created, expressed in a layout sketch.

Finally, in the **third** part of the assignment, you will implement the design you created in the second part using the Bootstrap component library. This three part assignment will take you through user research to ideation and from sketching to implementation of user-facing elements. Follow the instructions below to complete the assignment.

Part 1: Think-aloud

(0.1 Points) **Step 1. Identify users.** Who uses online shopping? Describe below the characteristics of this user group, identify one person (a roommate, a friend, or a family member) who might be willing to take part in your user research, and ask the person for their interest/availability. (If the person you identified is in this class, it is acceptable to swap roles.)

Users who use online shopping for the most part use it for simplicity. This simplicity allows them to save time and money that would otherwise be spent on traveling to a location and browsing an entire store. This user group can usually navigate through online stores relatively quickly, but this is not always the case. This user group also expects easy access interfaces that won't require much help from someone or something else. Both the user and the online store benefit from the easy to use and quick access model. For my project I chose my roommate to be my user tester.

(0.1 Points) **Step 2. Develop tasks.** Study the new Badger Shop application, Javascript **β,** to develop a set of tasks that users might perform with the system. Rank your list in terms of importance (simultaneously considering impact, frequency, prevalence) and identify the top three tasks. Describe each task in 1–2 sentences in a way that your users can understand.

Note: Your tasks can focus on the general visual and click-through navigation of the site and interact with personal information in a very limited sense.

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1. Purchase the flash sale Item
2. View account / family plan
3. View previous orders
4. Get contact information
5. Get invoice and order history pdfs

1. Purchase the flash sale item - Find and purchase the items that are on sale today.
2. View account / family plan - Locate your account information and step through the features/settings available. e.g. "Add a member to your family plan, and locate your account to unsubscribe from the membership services." - Badger Shop
3. View previous order - Find previous order history and find your current subscription, also download this information for records of your purchases.

(0.2 Points) **Step 3. Perform think-aloud.** Hold a think-aloud session with your representative user (e.g., over Zoom using screen sharing) *on **a real shopping website*** (NOT the Badger Shop interface). First describe to your user how the think-aloud will work (refer to the reading and class notes), describe the tasks one at a time (answer any questions you might have), and ask them to perform each task while they say out loud what they are thinking.

Pro tip: If you see your user performing the task but not speaking, probe them by asking what they are thinking or reminding them that they should be describing.

As you observe your user performing the tasks, take notes (using the other sheet) of important actions, problems they encounter, confusions they might voice, and so on. For anything that stands out, after each task, ask your user why they did that or said that. Your observations and notes will form your data. Include your data below.

Note: If your tasks involve entering or reviewing personal information, you can ask your user to stop screen sharing while they perform these actions in order to preserve their privacy.
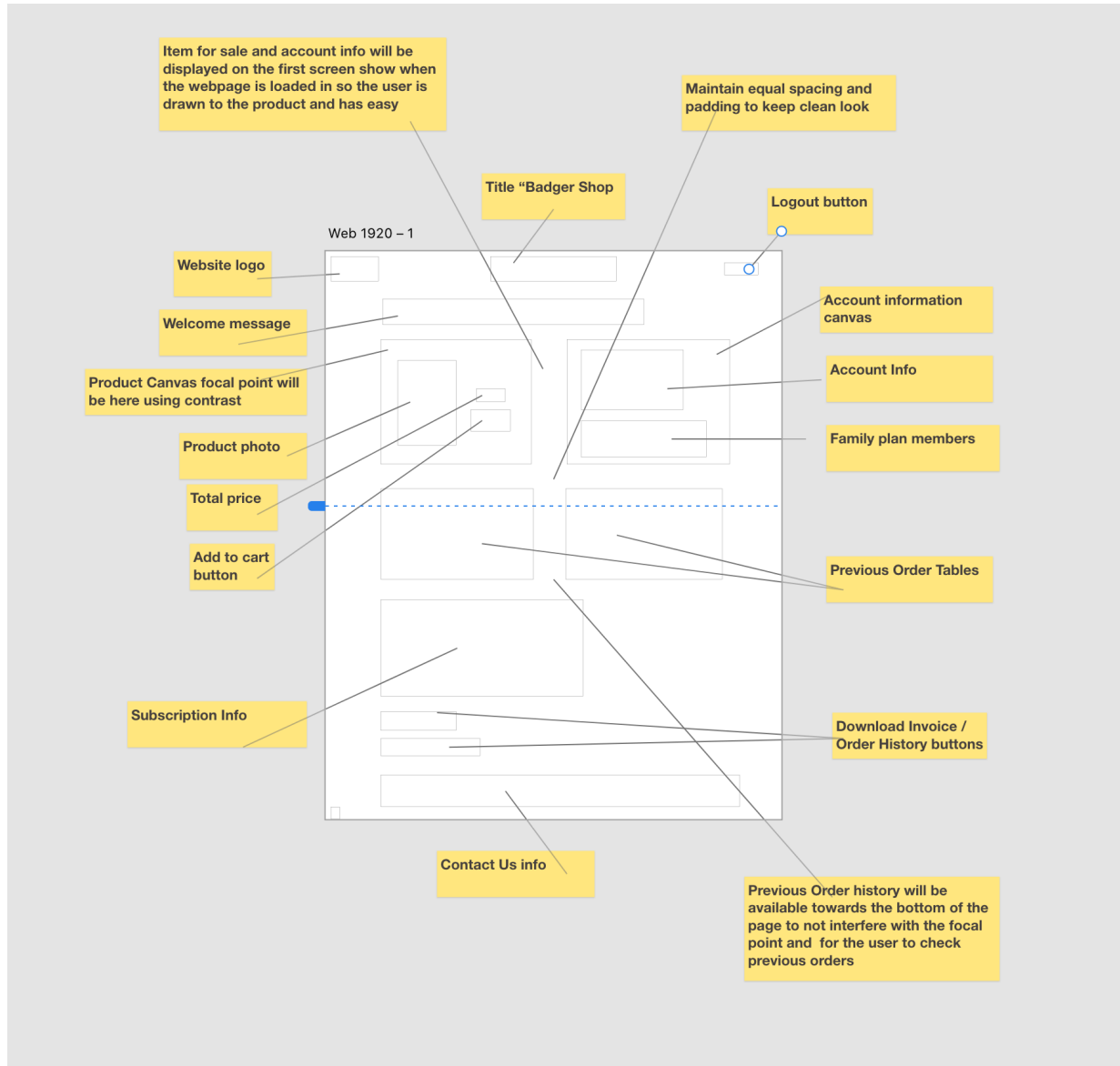
1. Purchase the flash sale item
   a. User is drawn to the focal point sale item on the page of many sale items
   b. User changes sizes and colors of items they seem to benefit from easy selection of these
   c. User comments on importance of item information such as picture, description, reviews etc.
   d. User mentions the importance of delivery estimation and return policy for items
2. Account information
   a. User identifies information should be presented neatly for the user to review
   b. User mentions sensitive information should be behind another password check
   c. Sensitive information also be starred out or possibly only partially available
   d. User prefers that all account information be somehow linked to be accessible from settings not spread out on other pages that may be hard to find
   e. Cancelling membership requires multiple screens and a lot of extra steps user mentions this should be easier and less of a hassle
3. View Previous order information
   a. User likes how multiple previous orders can be seen on the same screen instead of changing pages for each new order
   b. User appreciates seeing the price, buy it again, view item, details, date for purchase and returns, and pictures
   c. User likes thats items seems separate yet grouped together
   d. User likes that they can print or download the invoice/ order details to keep records
   e. User enjoys similar item suggestions for next purchase or purchase addons

(0.2 Points) **Step 4. Create insight.** In your data (e.g., notes), highlight where you saw significant breakdowns in functioning, need for better functioning, or user preferences that would require an alternative design. Make a list of your findings as design recommendations.

1. Badger Shop
    a. Use a common font for titles and then a separate one for regular text to create a well rounded look
    b. Create space between items but maintain closeness of similar items
        i. Purchasing Brazil nuts
            1. Use a layering technique to create a focal point to push users eye towards product information
            2. Add a picture for users to view item before purchasing
            3. Allow for quantity change for multiple purchases of the same product
        ii. Account information
            1. Group account information with family plan members in the same general area
            2. Maintain ease of member cancellation
        iii. Previous order information
            iv. Group tables to be close together, but also maintain separation
            v. Group in download options for invoice and history with order information area
            vi. Keep a clean layout with equal spacing between tables / orders

Part 2: Design

(0.4 Points) **Step 1. Visual Design.** Next, using knowledge of shopping operations from the think-aloud, you will redesign JavaScript **β** with the goal of improving its visual design. First consider what elements you must place on the canvas. All elements should have a function. If the original design included elements with no function or use, you can exclude them in your redesign. Next, consider the design principles, and ask yourself, "how can I direct user attention appropriately," "do I need to create contrast between elements," "how do I achieve unity," and so on. You will need to go back and forth between the elements and principles. For example, you must determine what user attention should be directed to, such as a product photo, a button, or a paragraph of text, in order to place the focal point to it. Similarly, you should think about the composition of elements to create an appropriate level of balance on the page. Your redesign should be in the form of a digitally- or hand-drawn wireframe with annotations that justify the use of the elements and principles.

Item for sale and account info will be displayed on the first screen show when the webpage is loaded in so the user is drawn to the product and has easy

Maintain equal spacing and padding to keep clean look

Title "Badger Shop

Logout button

Web 1920 – 1

Website logo

Welcome message

Product Canvas focal point will be here using contrast

Product photo

Total price

Add to cart button

Subscription Info

Contact Us info

Account information canvas

Account Info

Family plan members

Previous Order Tables

Download Invoice / Order History buttons

Previous Order history will be available towards the bottom of the page to not interfere with the focal point and for the user to check previous orders
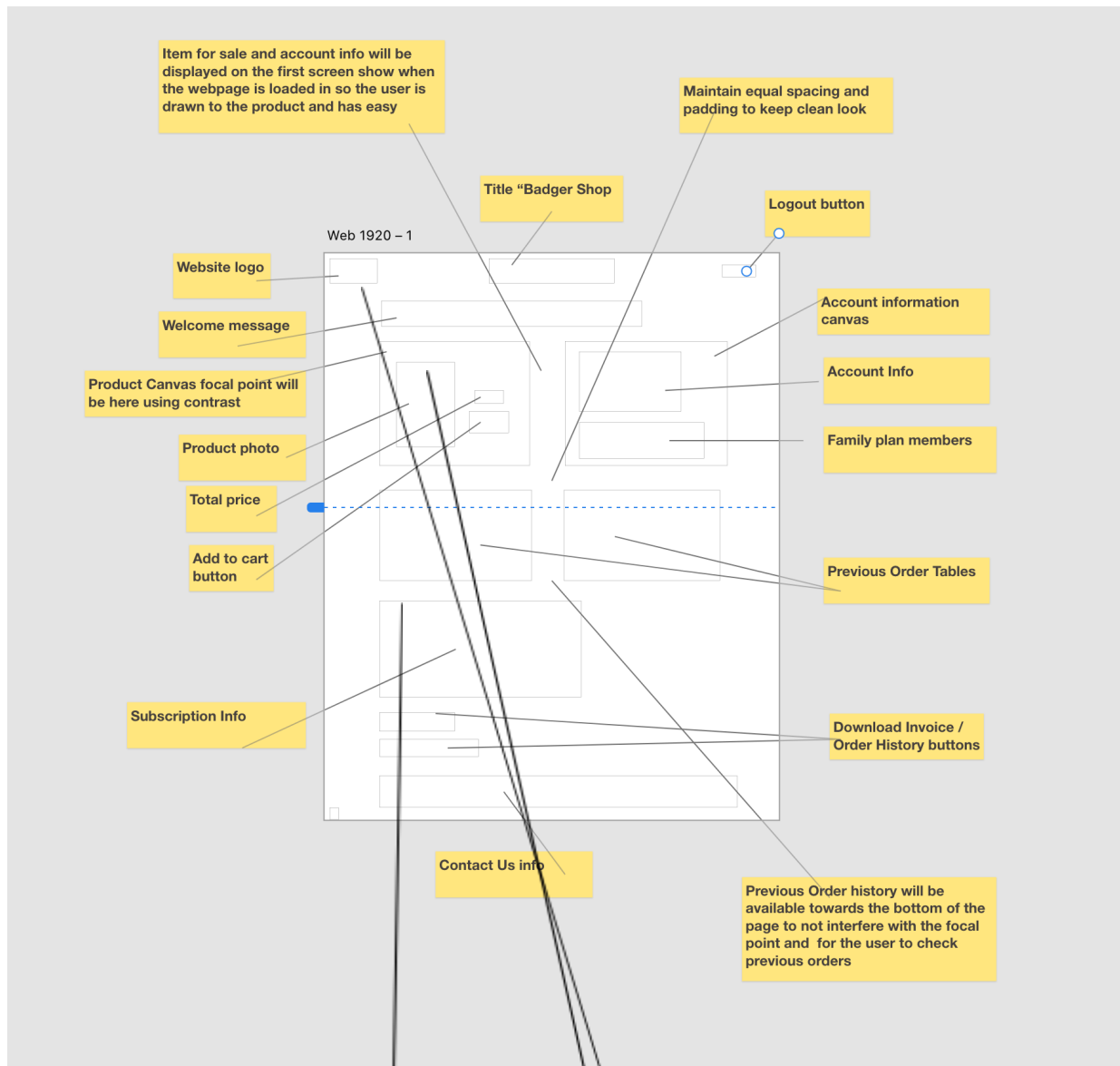
Contrast will be implemented between the product canvas and the account info canvas to push the users eyes towards the product to promote it further. Equal padding and margins plus color evenly distributed will maintain unity throughout the webpage even when scrolling through.

(0.2 Points) **Step 2. Specify color and type choices.** Finally, determine what color palette your redesign should follow. How many colors/shades will you use? Why will you use these colors? Keep design principles in mind when you are choosing colors. For example, using contrasting colors, you can create contrast and manage user attention. Additionally, determine what category of typeface and what font you will use, whether or not you will use multiple fonts on the page, and how you will parameterize each font. You may review the fonts in your computer's fonts folder (on Windows, go to "My Computer > Control Panel > Fonts" and select "View > Details;" on the Mac use the Font Book app) or the Google Fonts collection to give you ideas and get familiar with available typefaces.

For my website I'm choosing to follow colors based on the logo provided to us. I'm hoping to use the red of the badger along with white to create contrast on my webpage and possibly use different red shades throughout the page as needed. I think these colors will blend well together in the overall page and not create a messy overall look. I will also try to use the grey and blue from the logo to highlight other parts of the webpage. I have found a font called Audiowide that I think I will use for the titles and headings around my webpage, as of now I think I will leave the smaller text in the default font, but may decide to change it during development. I currently don't mind the typeface provided by h2 and h1 and other text fields, but may find it needs tweaking during implementation.

Part 3: Implementation

(0.2 Points) **Step 1. Inspect component library elements.** In this step, you will inspect the Bootstrap component library to see how you can realize the layout, visual-element, and color/type choices you have made in the previous part using the component library. You are not expected to change the library components to exactly match your design choices, but to identify which component elements might best meet your design goals. Below, copy the design and the choices you generated in Part 2 and annotate them to describe which components from the library you will use to accomplish your design goals.

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I think the row and column components will be the most important in my website design as they will help with overall website responsiveness to different sizes. I think I will create a row as the header of my website that will contain the logo, title, and logout button. After this I will have another row for the product canvas and account info canvas. Each of these canvases will contain rows/columns to maintain responsiveness within these areas. After this I will have another row for the order tables and subscription tables, I may also need some inner rows and columns depending on how to layout transforms. I'm also hoping to use the button components as a base and possibly modify them to better fit the overall feel of the website. I think I will also use an overall container to help padding and spacing of my webpage on the sides and top.

(0.6 Points) **Step 2. Implement your redesign.** The last step of this part will involve implementing the layout and components you had identified in the previous step. You will include Bootstrap in your project and use it to implement your design. You do not have to implement new *functionality*; focus on implementing your *design*.

Your deliverable will be a completed version of this document, attached to the canvas assignment as a PDF, and the GitHub Classroom repository name and latest commit hash.