

PUI ASSIGNMENT 6

Adding Functionality to a Website with JS

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Part 1 Assignment 5 Reflection & In-class Critique

[Assignment 5 Reflection]

The previous assignment is my first HTML/CSS work. Although I'd watched tutorials before and knew certain features about them, it feels very differently with coding myself. What's more, considering we were asked to code web pages as close as possible to our own high-fidelity interface design, the whole coding process is also about ideation and design thinking.

After my submission, I've kept learning HTML/CSS in a more comprehensive way since I knew my code last time was a little messy and disorganized although it functionally works. A couple of things I learned afterward:

1. HTML/CSS is not the tool to realize "whatever shown visually in a hi-fi interface". It should be considered structurally. In my previous assignment, I didn't draw sketches for the overall page layout, nor did I consider the pages as layers of `<div>`. It turned out I tried to layout elements pixelly from the left corner.
2. Responsive Feature of Web Pages is important. Last time, since I organized elements according to relative location, the whole page is poor in response to the change of presenting screen sizes. Although I didn't have enough time to re-code the previous HTML/CSS pages, for assignment 6, I paid more attention to using `flex` and "%" so that elements are responsive to the change of windows size.
3. Coding Pattern and habits. In my previous assignment, I didn't pay attention to the widely-accepted coding pattern and noting habits. I didn't realize the problem until I tried to explain part of my code to my classmates while working half-way this time. It was even hard for me to recognize my previous code myself. It's not hard to imagine how difficult it would be for an engineering team to co-develop certain codes. For this time, I pay more attention in my code consistency for assignment 6.
4. Learning code is more efficient from lab tasks, in-class interaction, tutorial videos than merely looking at someone else's completed code. It's important to learn coding through a procedure that can absorb the essence of programming thinking. Although I learned this lesson in a hard way during HTML/CSS learning, I still saved tons of time this time by reviewing lab task for reference and watched tutorials to learn JavaScript.

[In-class Critique]

During the PUI Lab this week, we were asked to conduct a peer design critique. I reached out for five classmates to critique my design.

It turned out to be very helpful for me, especially when I heard some comments that is in consideration of UX quality, coding structure and design pattern. When I was critiquing someone else's work, I myself also tried to combine the three aspects together while forming my points. Comparing with the paper prototyping critique, I could actually feel how I understand web development much better from a role beyond sole designer. Some key comments are recorded as below.

Page	Critique Comments
Homepage	<ol style="list-style-type: none">1.The logo looks good but the description sentence is not designed elegantly enough. Since the homepage gives users the very first impression, it's important to arrange the whole page properly visually.2.The icons (search/shopping cart/account) is too small, especially you are using the outline style, in comparing with full-hatched style.3.Be aware of font size. As long as they are discernible, that's good enough. Over-size font will make things cheap.
Items Page	<ol style="list-style-type: none">1.The way how Muddy Paw logo is arranged is too outstanding in size and location. It is almost the same size as the item images. However, it's only functions are giving users a clue which site they are navigating and a clickable button back to homepage.2.The website logo is kind of across two different sections. It literally pops up in front of me when I first jumped to this page.3.The filter system is functionally effective, especially for such a small pet gear store.4.Not so sure about the color selections be the side of item image. A better way might be put the stuff below images, so that the overall horizontal visual language is consistent.5.What if I click one color and another? Will the whole block jump a bit to realize the design that selected color block becomes a little bit larger? I'm not so sure but the code but you definitely need to avoid such visual noise in further consideration and implementation.6.The price is somehow in same font style and size with the item page,

	<p>and they are all black in color. Users cannot easily tell the difference and filter the information they care.</p> <p>7.The consistency of rounded frame seems good.</p> <p>8.Font size is not designed properly. The nav bar seems too overwhelming.</p>
Item Detail Page	<p>1. Still, the logo thing. It pops up and doesn't align well with the "back" button and item image to the left.</p> <p>2.The back button is well designed. I like where it is and the arrow indicates its function. But the frame style can be differentiated w/ the other filters on the right a little bit.</p> <p>3.The "add to cart" button uses the same color w/ the header and star. In one way it becomes more consistent, but it's harder to discern the button within the page. Using darker color, stronger visual style, different font style are some possible ways to differentiate it.</p> <p>4.The starts looks good. But maybe include all full five starts. Otherwise user is not able to quickly associate the rate to it's exactly parentage.</p> <p>5.I like how you differentiate the frame of size/quantity with color, since the color blocks doesn't have text in it. So it makes sense.</p> <p>6.The descriptions are aligned w/ a solid line on the left. It's a little bit confusing what the text means tho. Better way to do it is using quote as the style.</p> <p>7.Be aware of using the properly font. Arial cannot do everything.</p> <p>8.Instead of using the yellow color all the time on top, a better way to do this is using a simple line.</p>
Shopping Cart Page	<p>1.The overall layout looks good. Should spend more time to align lines of information.</p> <p>2.The shopping cart icon could be better associate w/ the overall shopping cart page.</p>

Part 2 Shopping Cart Design & Prototyping

[What is a good shopping cart page?]

When I started to work on the prototyping of shopping cart page, there are several aspects I considered as most important:

User-centered for customers

What is a friendly interface for customers of Muddy Paw?

- easy to navigate, clear about item list
- easy to edit, can subtract or add item numbers
- easy to delete or clear whole cart, instead of one item after another
- featured item info listed clearly, good layout
- Notify cart info in a more obvious way on item detail page, so that users can be aware their overall shopping data and are encouraged to proceed checkout.

User-centered for client

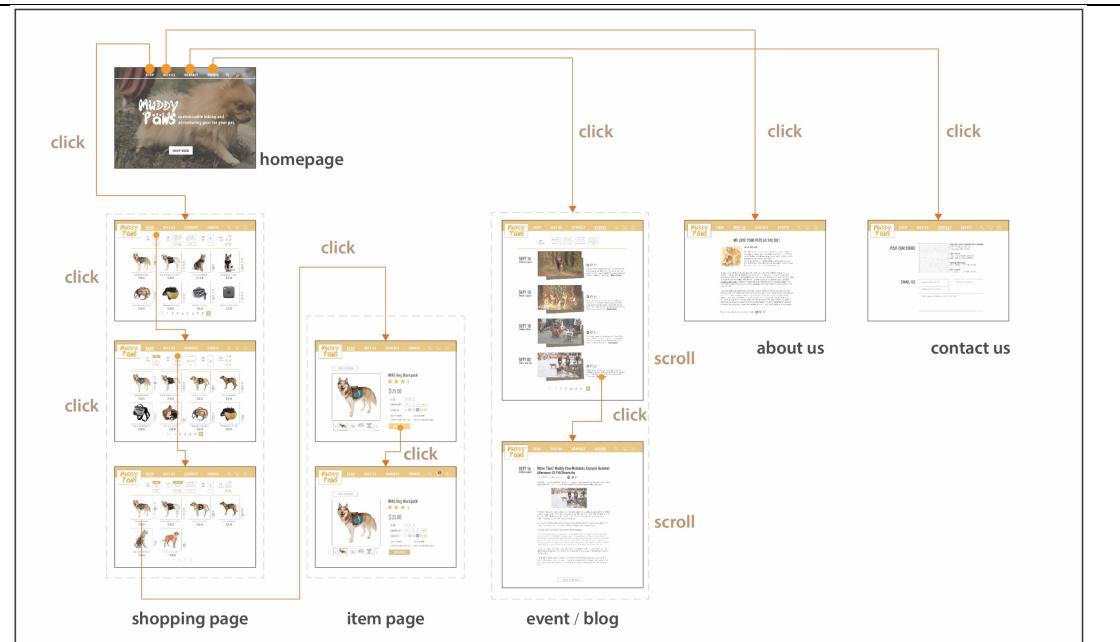
How could I possibly let customers know more about my clients' products?

- add an “add popular items” function so that my client has the chance to introduce some of their best-sellers to customers. Customers can easily add the item they are interested in into the cart at ease, without even click to the item page. The whole control can be done within the shopping cart page.

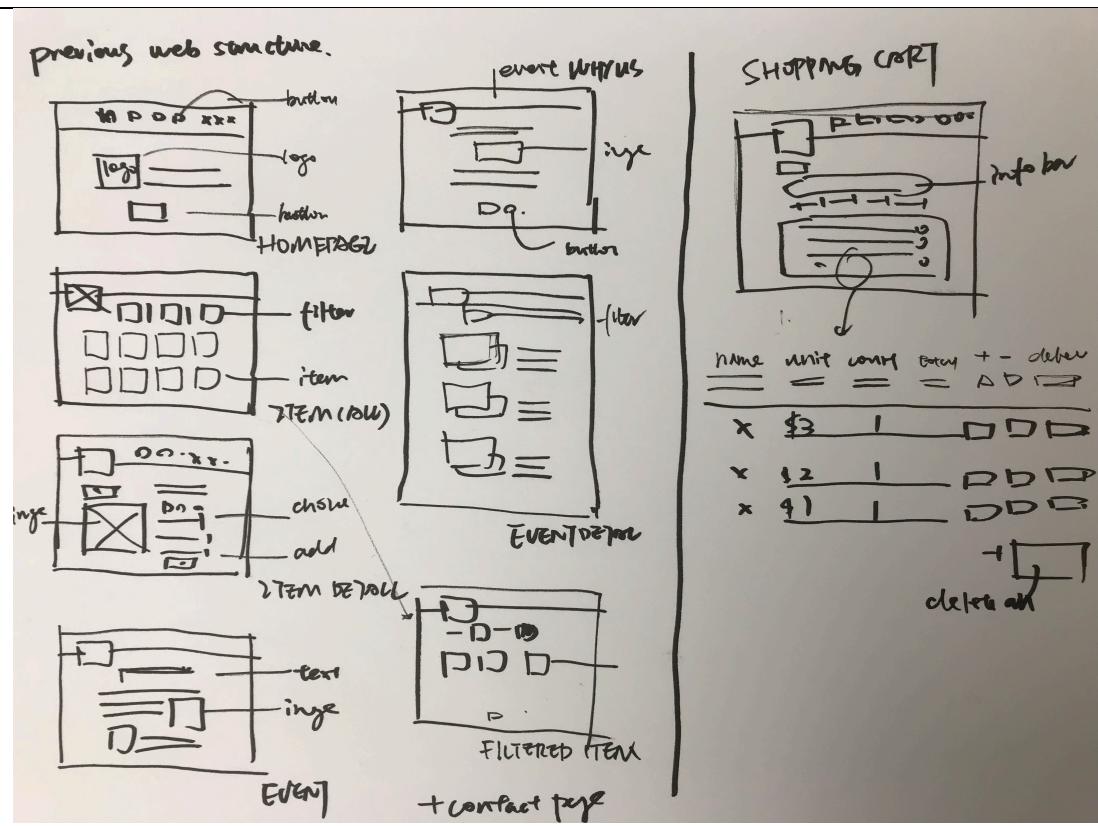
Design pattern and style

The shopping cart should be consistent with the other pages. Functionally, it should be accessible to homepage and can be easily reach by clicking “shopping cart button”. Visually, the elements used for shopping cart page should be similar to the rest pages. However, since shopping cart page is associated with the most important action of users, checkout, I tried to make the process less stressful with design features.

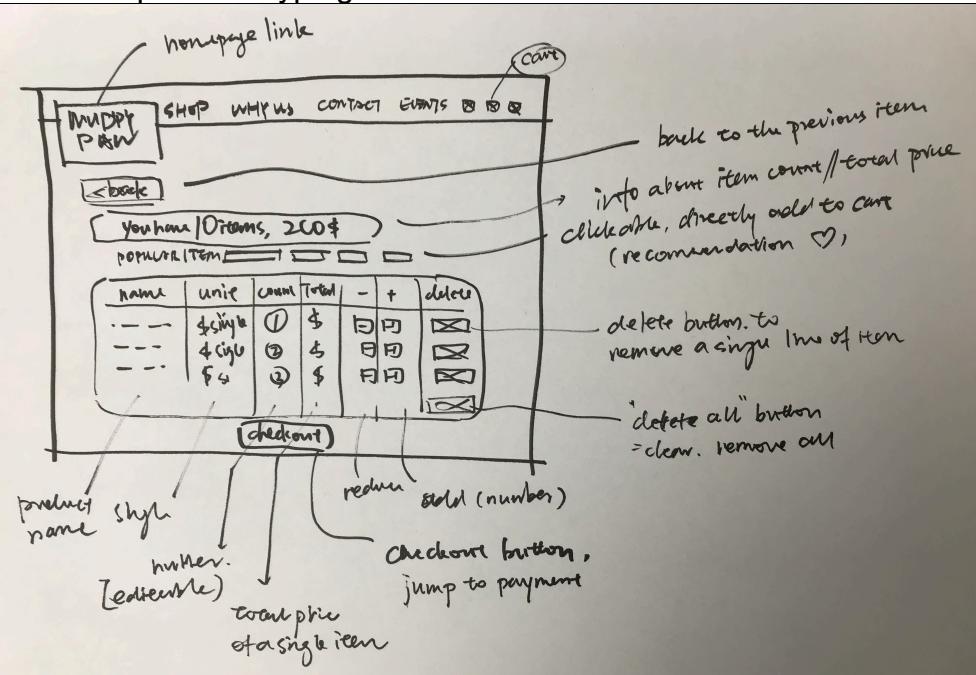
Web Pages for Previous Assignments



Low-fi Paper Prototyping (along with previous pages)



Med-fi Paper Prototyping



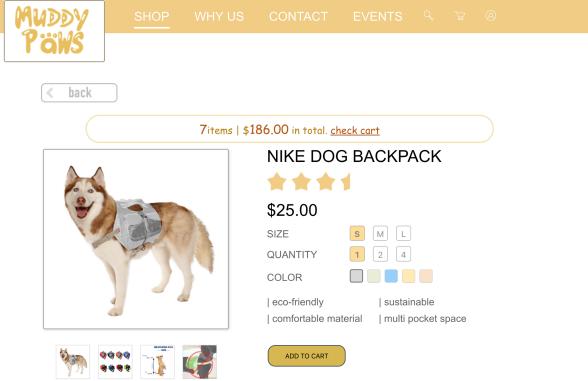
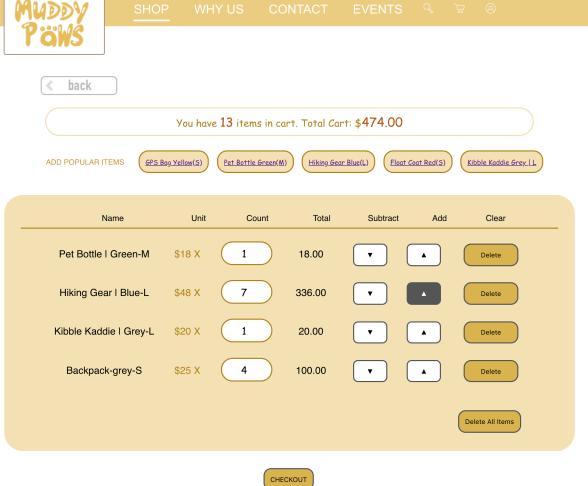
Hi-fi Prototyping in Sketch

The hi-fi Sketch prototype follows a similar structure. It features a yellow header bar with the 'Muddy Paws' logo, 'SHOP' (which is underlined), 'WHY US', 'CONTACT', 'EVENTS', a search icon, a cart icon, and a user icon. Below the header is a 'back' button. A prominent callout box displays the message: 'You have 20 items in cart. \$360.00 in total.' Below this, a row of links includes 'Add Popular Items', 'GPS Backpack Green', '[S]Cat Harness Black', '[M] Cat Harness Yellow', and 'Dog Snack Outdoor'. The main content area contains a table of items with columns: Name, Unit, Count, Total, [-], [+], and [Clear]. The table data is as follows:

Name	Unit	Count	Total	[-]	[+]	[Clear]
Nike Backpack Grey S	\$15 X	4	60.00	<input type="button" value="▼"/>	<input type="button" value="▲"/>	<input type="button" value="Delete"/>
Nike Backpack Grey S	\$10 X	6	60.00	<input type="button" value="▼"/>	<input type="button" value="▲"/>	<input type="button" value="Delete"/>
Nike Backpack Grey S	\$20 X	6	120.00	<input type="button" value="▼"/>	<input type="button" value="▲"/>	<input type="button" value="Delete"/>
Nike Backpack Grey S	\$30 X	4	120.00	<input type="button" value="▼"/>	<input type="button" value="▲"/>	<input type="button" value="Delete"/>

A large 'Delete All Items' button is located at the bottom right of the table area. At the very bottom is a 'CHECKOUT' button.

Part 3 Item Detail & Shopping Cart Page Functions

Page Name	Screenshot HTML (Chrome)	Description
Item Details		<p>(changes)</p> <ul style="list-style-type: none"> -add “check cart” function to direct users to cart -add item count and total price info to remind users to checkout -add Javascript function to size/quantity/color -add scroll images under core image
Shopping Cart		<ul style="list-style-type: none"> -logo and header -back button back to item detail page -info bar to show shopping info -“add popular items” function for users to quickly add items within shopping cart page -shopping bag item chart ---name of item ---unit price ---quantity (editable) ---total price ---subtract items ---add items ---clear ---clear all -checkout page

Part 4 Bonus Function Explanation

[Bonus Functions Summary]

- On item page, click to switch between images of same item (similar to carousel).
- On item page, a cart info bar to demonstrate total item count and total cost in shopping cart.
- On shopping cart page, a cart info bar to demonstrate item count and total cost in shopping cart.
- On shopping cart page, an “add popular items” function with top five items for users to add into cart with short-cut.
- On shopping cart page, an “add/subtract” button to edit the quantity of a specific item. On shopping cart page, the editable “count” section for users to edit quantity by inputting numbers directly.
- On shopping cart page, “delete” and “delete all items” functions to clear item from cart.

[Bonus Modification to Previous Web Page Design] (bonus points mentioned in PUI lab)

Based on the feedback from peer critique during PUI Lab, I made some changes to my previous web page design and the HTML/CSS code.

- changed some of the font size and style comparing with previous version;
- modified the layout of shopping cart page;
- changed the “add to cart” button in a design style more outstanding than the general color scheme
- changed the image scroll from clicking arrows (Fitt’s law, harder to click) into clicking the images themselves to review, since there are only four pictures and the arrow looks overwhelming
- changed the size/quantity/color button so that a color change will appear both when user hover and select a certain type (feedback of control).
- changed the quantity number from “1,2,3,4,more” into “1,2,4” so that enough choices are provided and confusion is avoided.

Besides, when it comes to the modification of coding pattern instead of design, I also made several changes to my work. For me, that’s some level of changes that more important than the change of visual design and layout.

*** [Submit Assignment in Advance Bonus]**

I submitted the assignment at the previous deadline (Friday) first and updated a submission with a reflection on Saturday. All the code (HTML, CSS, JavaScript) are not changed. I'm not sure if this (partly) matches the “regular deadline submission bonus point” :)

Part 5 Website Navigating Guidance

Below is a suggested navigating flow to test all the functions of my Assignment 6. Or, please free feel to navigate according to your own preference!

***Please test the site in Chrome (instead of Safari).

Otherwise some functions may not be supported due to insecure warning. Thanks😊 ***

step	description
01	@ homepage
02	Click either “shop” on header or the “shop now” icon to items page
03	@ items page
04	Click the image of the upper left “NIKE DOG BACKPACK” item to continue
05	@ item detail page
06	Click the smaller images under main image to scroll across different product pictures or item description images
07	Click “ADD TO CART” button, so that one grey-S-backpack is added
08	Click the “check cart” link on the top of item info to shopping cart page
09	@ shopping cart page
10	Now the item is updated in the shopping cart page, with detailed info
11	Click the “back” button on upper left to go back to item detail page to test more functions of the item detail page
12	Now the “1 items \$25.00 in total” information is updated
13	Randomly switch “size/quantity/color”, or click add to cart for multiple times if you like, to add different types of items to the shopping cart page.
14	Both the “check cart” link and the shopping cart icon will link to the shopping cart page. Click to check updated info in the cart page
15	@ shopping cart page
16	Now all different items are listed in the cart
17	There can be more! Look through the “add popular items” choices and find if there’s anything you are interested in. By clicking the shortcut button (for example, ‘GPS Bag Yellow (S)’), you are able to directly add the item into list within the shopping cart page, even though it was not previous in your cart
18	Try some changes to the quantity(count)?
19	First thing you can do is to subtract or add the number with the two buttons. Each button only changes the quantity of the item on its row independently without affecting the other items. Note: when you click “subtract” for an item of a quantity of “1”, it means you no longer want this anymore. So, the system will automatically remove the item from this list instead of remaining a quantity “0”.
20	Second thing to do is input number. If you are from a pet club and needs order a lot of items, using the add/subtract button is so time-consuming. So, you could direct click the rounded blank under “count” section, and type in

	number, then refresh to update a specific number. Any information related to this change (item count, item total price, all items count, all items price) will be immediately updated
21	Click “delete” button to remove ONE item from the shopping cart
22	Click “delete all items” button to clear the WHOLE shopping cart

Part 6 Assignment 6 Reflection

I was not familiar with JavaScript previously. What I learned from coding HTML and CSS during previous assignment is that, it's better to learn the feature and logic of a programming language before learning to do specific tasks with the language. Otherwise, even if I'm able to follow guidance to code some page, I will miss a lot of functions that are feasible with such language. What's more, following and understanding a tutorial is much easier and simpler than what actually will be during designing and coding on your own. Sometimes I feel the coding process itself is also design-related, or can be described as “the design of coding (of even the art of coding)”. Apparently, my coding is not yet professional, but being able to differentiate good coding and poor-organized coding is something important I learn. It's also helpful for my future career as a UX designer that involves constant interaction with engineers. Besides, I tried to get familiar with JavaScript language as fast as possible. There are several tricks I did during my learning. One thing is to build association with the knowledge I was previously familiar with. For example, I learned Python this summer and find there to be several similarities between the two languages. I sketched a map to compare the coding logic between the two languages to help me better understand the essence of JavaScript.

What's more, I also found things to be more challenging when I was switching from two platforms (HTML/CSS) into three, plus JavaScript. At first, I thought the challenge lies in separating codes within three platforms so that each takes control of certain feature (content/visual/function) of my work. However, it turned out that the biggest challenge was considering the hierarchy of coding across platforms.

I also have formed a different understanding of the originality of programming. At first, from designer's side, I thought programming to be something similar in originality that, the engineers should write every single line of code by themselves. But then I realize the importance of

On the other hand, it's important to see code beyond visual level. even if there are two web pages look the same with each other, they are not necessarily to be "same programming project". For example, if one page is responsive and the other is not, are they still considered the same? Or even the two web pages are 100% functionally equal, but one is under float system and the other is a flex system, are they still considered the same? The answer should be "no". In the past, I saw programming works from outside, but now I consider them more from the structure, more like a "skeleton-skin" relationship.

Last but not least, coding is not a procedure of "realizing designers works technically". It's an interesting problem-solving procedure. Every decision that engineers make during their coding will somehow influence the output, slightly or significantly. For me, I'm not considering being a software engineer, but the process makes me more aware of engineers' working routine.

Part 7 External Resources Citation

The external resources I used when coding are listed as below:

[HTML]

I didn't directly use any external resources for coding;

[CSS]

On shopping cart page, the CSS code for "delete" and "delete all items" are inspired from W3Schools, specifically the "button style" tutorial section. However, I made changes to the CSS file for my own design (border style, border width, border radius, color, hover effect).

[JavaScript]

In the shopping cart page, I coded after watching Mitchell Hudson's YouTube tutorial about shopping cart functions.

I also learned by searching answers from Stake Overflow. I didn't copy any code from them directly though. I mainly got inspiration from them to change detail of my code to fix bugs.