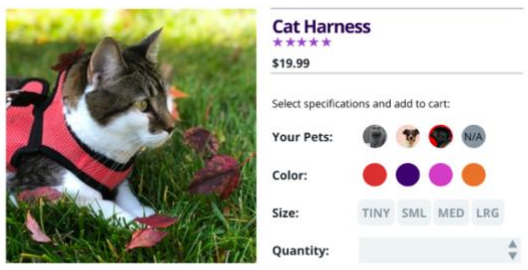
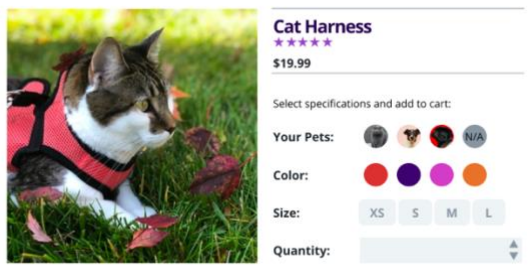
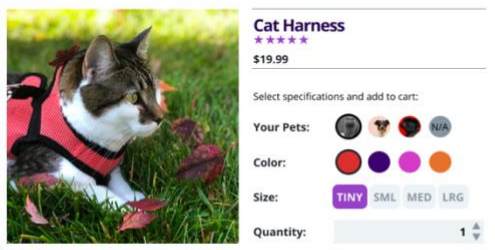
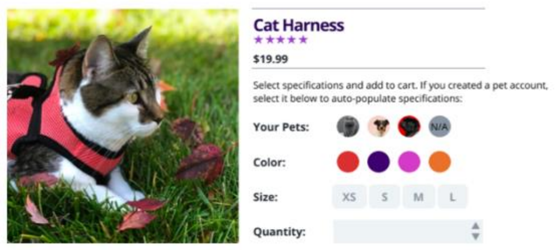
PROGRAMMING USER INTERFACES

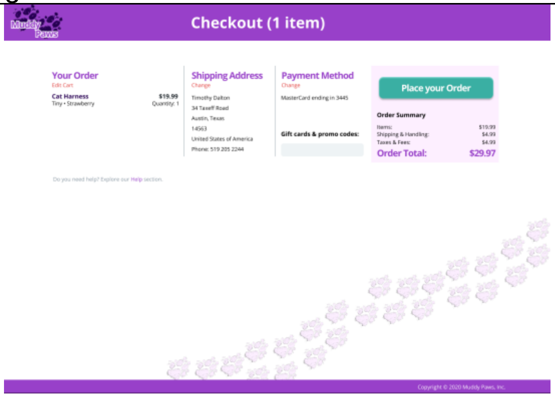
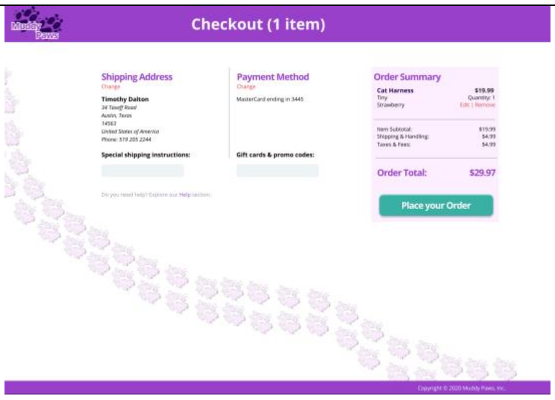
Assignment 5 – Web HTML and CSS Prototypes

[Link to GitHub Repository]
[Link to Live GitHub Hosted Site]

Heuristic Evaluation Assessment

In designing my website, I think there was significant room for improvement in terms of more closely adhering to design heuristics, in large part because I didn't consider them very closely when designing my site. Instead my focus was primarily on incorporating the feedback from my paper prototype testing and building a site that was aesthetically pleasing above all. Some of the major UI bugs (and fixes) are as follows:

	UI Bug (from Assignment 3)	Design Fix (in Assignment 5)
#1	 Cat Harness ★★★★★ $19.99 Select specifications and add to cart: Your Pets: N/A Color: Size: TINY SML MED LRG Quantity: **Consistency and Standards:** One area that I neglected was the strange sizing that Muddy Paws used, electing for a "Tiny" size instead of XS. Because Tiny isn't a convention, I typed out the entire size, and then did awkward abbreviations of the other sizes to create a degree of homogeneity. Unfortunately, all this led to was four abbreviations that have no standard usage in e-commerce, and potential confusion for users	 Cat Harness ★★★★★ $19.99 Select specifications and add to cart: Your Pets: N/A Color: Size: XS S M L Quantity: **Change to Standardized Sizing:** To fix the bug, I changed the sizings to be more conventional, swapping Tiny for X-Small and then abbreviating the sizing selection to have conventional abbreviations that can be understood more easily (XS, S, M, L)
#2	 Cat Harness ★★★★★ $19.99 Select specifications and add to cart: Your Pets: N/A Color: Size: TINY SML MED LRG Quantity: 1 **Help and Documentation:** I added a feature to my site where users could create "Pet Accounts" that capture the sizing / color / quantity specifications for pet profiles they create. These pet profiles can then be selected during ordering to minimize the number of clicks to checkout. Unfortunately, for a first-time	 Cat Harness ★★★★★ $19.99 Select specifications and add to cart. If you created a pet account, select it below to auto-populate specifications: Your Pets: N/A Color: Size: XS S M L Quantity: **Provide Better Instructions:** To improve clarity, I updated the blurb for the product details page so that it now provides clarity on what the "Your Pet" section is and how to leverage it to speed up the checkout process.

	user of this feature, they may not know how to use the feature or what “Your Pets” stands for, and no guidance is given.	
#3	 Muddy Paws Checkout (1 item) Your Order Edit Cart Shipping Address Change Payment Method Change Place your Order Order Summary Gift cards & promo codes: Order Total: Cat Harness $19.99 Tiny • Strawberry Quantity: 1 Timothy Dalton 34 Taseff Road Austin, Texas 14563 United States of America Phone: 519 205 2244 MasterCard ending in 3445 Items: $19.99 Shipping & Handling: $4.99 Taxes & Fees: $4.99 Order Total: $29.97 Do you need help? Explore our Help section. Copyright © 2020 Muddy Paws, Inc. **Aesthetic and Minimalist Design:** In designing my checkout page, I rushed the layout and so didn’t adhere to the grid I had created for the rest of the site, with line separators being dropped into gutters, poor uniformity in section sizing, and an overall sloppiness to the design so that information was hard to read and users weren’t immediately clued in on what they needed to do.	 Muddy Paws Checkout (1 item) Shipping Address Change Payment Method Change Order Summary Special shipping instructions: Gift cards & promo codes: Edit | Remove Place your Order Timothy Dalton 34 Taseff Road Austin, Texas 14563 United States of America Phone: 519 205 2244 MasterCard ending in 3445 Cat Harness $19.99 Tiny Quantity: 1 Strawberry Item Subtotal: $19.99 Shipping & Handling: $4.99 Taxes & Fees: $4.99 Order Total: $29.97 Do you need help? Explore our Help section. Copyright © 2020 Muddy Paws, Inc. **Increased Adherence to the Grid:** To update my design, I first aligned my text boxes to the grid. I then increased the uniformity between the shipping and payments sections to create more balance in the page. I moved order details into the order summary page because users would be unlikely to edit items at this point (there was an edit cart page prior to arriving at this page), so that the areas to double-check were more clearly separated from the “summary” section. Lastly, I improved the overall page balance by flipping the paws graphics to be heavier on the lighter side of the page, for increased aesthetics.

Issues and Solutions in Implementation

I coded my website with little prior knowledge of coding, and so ran into several issues that required learning new skills. Some of my major learnings include:

Translating the Grid to Code: One of my biggest challenges in learning how to code was understanding the use of various display and positioning elements. Unfortunately, Figma’s CSS export tool only provides absolute positioning guidance, and I wanted to steer clear from that because of how fragile such positioning is to changes in browser sizes. I also wanted a positioning system that could be used for multiple elements at a time, with as natural a mapping to the grid I had used in Figma as possible. I came across the CSS grid system in my research and it was incredibly effective at positioning elements relative to one another and relative to the browser as a whole. I was able to map positions based off where in the grid the elements were in Figma, and since I was so dependent on Figma’s grid system for positioning when building the prototype, being reliant on it for positioning elements in my code worked wonderfully.

Making Dynamic Sites: Beyond the grid layout for positioning larger elements, I also found it challenging to make the site legible as I changed the browser size. Fonts looked either awkwardly big or awkwardly small and sub-elements that I had carefully coded in distancing for showed me how fragile px was as a unit of measurement. I found three fixes were helpful. First, I stopped defining distances and sizes in px and instead opted for dynamic units where possible, such as vw, vh and em. I defined my base font for the html document as 0.98vw (14px font in a 1440 pixels wide browser) and then defined fonts relative to that using em. Second, I realized the importance of constraining limits once I saw my fonts become giant in my ultrawide monitor, so I used @media screen size detection properties in CSS to determine max and min font sizes that ensured fonts never became unreadably small or unreasonably large. Third, I began employing flexbox for sizing sub-elements relative to one another, allowing me to easily and dynamically space objects (it ended up being very similar to auto layout in Figma).

Building Collapsible Menus: One tricky piece I worked on in my Figma prototype was building collapsible information menus for the product details page. I had no idea how to do this through code, and quickly realized StackOverflow was my best friend. The site provided some guidance that made it clear that building collapsible menus would require a combination of special HTML input types, CSS styling, and a JavaScript-based function to dictate the logic of whether a menu should be expanded or collapsed. I learned how to combine the three to build a seamless feature, and became more comfortable with using functions in JavaScript that called upon classes and IDs.

Creating CSS Animations: I also had quite a few hover animations in my Figma prototype that I wanted to bring over. I initially thought that all hover animations had to be done on JavaScript, but after playing around with CSS, I learned that the :hover property can be used to create separate CSS properties for an object when it is being hovered over, creating an entirely new realm of possibilities for styling my site. I was especially impressed by CSS's ability to create a zoom-in feature into images while still retaining the shape and size of the image's frame (see my product browsing page for an example).

Moving Code to GitHub: In moving my code to GitHub, I experienced a major difficulty in porting over the full functionality of the site – all the background images had disappeared completely on the published site page! After investigating, I learned that GitHub was far more finnicky on the area of image URLs than Visual Studio was, and that although Visual Studio was accepting images from my image folder as "/images/xyz.jpg", Github required the more exact nomenclature "./images/xyz.jpg". It was an important lesson in being exact for minimal issues and consistency across platforms.

Incorporating Brand Identity

I wanted to design a site that was light, fun, and a joy to use. All I knew about Muddy Paws going into the site build was the company's name, products and mission statement of "helping pets experience the wild alongside their human pals", and these elements painted a picture of a site that didn't take itself too seriously, and focused on creating a playful and loving bond between owner and pet. I didn't want to make the site too rugged or focused on nature – instead I wanted the focus to be on the pets and their relationships with their owners.

My site's aesthetic reflects this decision. The color scheme is light and playful – energetic and poppy purples accented by bright and cheerful yellows. I used rounding wherever possible on buttons, images, and selectors to enhance the light tone. The fonts are large to make for an easy reading experience. The site's logo is again meant to be a playful nod to a dog tracking mud into the house, without necessarily making owners feel like that mud has to be result of a long hike, but that it could also come from a simple walk to the park. I also tried to focus on the owner-pet relationship on my site’s homepage, splashing several images of owners and their pets along with their stories to create a familial environment. The copy of the site also complements this feel – as all copy is meant to be conversational, enthusiastic, and informal, like the site is a facilitation of a conversation between two friends who happen to also be pet-owners. Overall, these elements come together to drive home the light, familial, friendly brand identity of Muddy Paws, and make it a site that people go to to strengthen their bonds with their pets, even if they aren’t adventurous hiking addicts.