Amy Jakopin

Faculty Sponsor: Kurt McMahon

Website Development: Cosmetics Organization

Final Reflection

For my Honors Capstone, I built a website from scratch. This included developing the front end, back end, and database. The goal of this project was to apply the skills I have learned over the past four years as a computer science student, to build a software project that connects the different areas of study I have focused on and create an end project that a user can find acceptable and helpful.

The purpose of this website is to record and organize makeup and cosmetic products, allowing a user to keep a record of the products they have, as well as create 'looks', groups of products that can be used together, and save the looks, along with notes about their preferences. Such a website could be useful for anyone who uses makeup and needs a way to keep track of which products they already own, and which ones they like to use together.

The website opens to a landing page with a searchable list of cosmetics products, and the user can open a popup with detailed information on each product, as well as mark any product as a favorite. Each product's information also includes a list of all looks in which the product is included. The second page of this website displays a list of all looks that a user has created. A look is a grouping of products that the user thinks should be used together. Similar to the products page, the user can open a popup with detailed information on each look, including a description, picture, and the products included, as well as mark a look as a favorite. The user can create new looks and edit existing ones, as well as delete any existing look. When adding or modifying the products included in a look, the user can scroll or search through the landing page of cosmetic products, and each product will have the option to add it to the look.

When proposing the project, the following features and timeline were proposed:

Phase	Features	Week to be completed
Phase 1: planning and system design	- Create a wireframe to demonstrate how the website will look - Write user stories for features	Week 3

	• Design the database	
Phase 2: prototyping and foundational features	• Install all necessary technologies, • Connect all related pieces • Display a functional (empty) webpage • Display basic data such as product details from the public API on the webpage • Add search functionality for the products	Week 6
Phase 3: developing interactive user-specific features	• Display 'looks' (groupings of products that would be used together), • Enable users to create custom 'looks' • Enable users to mark products and 'looks' as favorites	Week 9
Phase 4 (Stretch Goal): allowing users to customize and upload new data	• Enable users to attach personal notes to products and 'looks' • Enable users to upload their own pictures of the products in use • Enable users to upload custom products not listed in the public API.	Week 13

Phases 1 to 3 were required for satisfactory completion of the capstone, and Phase 4 consisted of stretch goals for if time permitted. Throughout the course of the semester, development proceeded mostly according to schedule, and all of the required features were completed, along with one stretch goal (allowing users to upload pictures of the products in use).

This project was an enjoyable experience, giving me the opportunity to apply the skills I've learned during the course of my degree, as well as learn some new ones. Perhaps the most important thing I learned early on in the project was the importance of developing well-designed wireframes before implementing the code. Wireframes are not a common requirement of class projects, but are extremely helpful in a project of this scope. Learning to design wireframes for this project helped me organize the user flow, and made the implementation of the entire project go much more smoothly. This had a positive impact on the development throughout the semester.

Throughout the development process, certain features did end up taking longer to implement than originally expected. This is pretty typical for software development in general, and the project was designed with this in mind from the beginning. For example, displaying all of the products on the home page took a while to format correctly. One feature that was more complicated was allowing

the user to upload pictures. I originally tried hosting the pictures online, but then ran into limits with the number of times the pictures could be retrieved, so I had to pivot and store the pictures locally. This was a good example of learning when to pivot and try another method to achieve what I wanted for the website.

One main roadblock I ran into was a lack of clear documentation for one of the packages I was using. This meant that features which relied on this package, such as formatting the product and look cards, took longer than expected, because more time was spent trying to figure out how to implement the package. While this did not significantly limit development, it did result in a few delays, and needing to find alternate options.

Overall, I am pleased with how development went, and with the product created in the end. This website is fully functional and usable, with features that are intuitive, logical, and helpful for a user. As with all websites, there are areas for improvement and additional features that could be added. If this project had more time and resources dedicated to it, some additional improvements would include allowing more individualized user customizations, allowing multiple users to log in, and hosting it on the cloud so that it could be more publicly available. However, even without these additional features, the final product here provides significant value for cosmetics users and allows them to store and organize important information.

This capstone gave me the opportunity to apply the skills I have learned throughout my degree, as well as explore new areas of the field of web development. It also gave me the chance to create a product that others can use and find value in, and was a very valuable experience to culminate my NIU experience in software development in the honors program.