Final Project Documentation

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2023-12-03
CAP4104 - HCI

Counter Strike 2 Skin Pricing Tool

Glossary:

Float Value / Wear Value:

Both terms mean the same thing and are referring to a value that every unique CS2 skin has. Whenever a skin is obtained, it has a random value from 0 to 1 that determines how scratched the skin appears in-game.

Example of AWP | Dragon Lore with float value 0.01

Example of AWP | Dragon Lore with float value 0.52

Condition:

Skins within a certain wear value are grouped into conditions. The lowest float values are “Factory New,” and the highest are “Battle Scarred.” My website only filters within the “Field Tested” range for pricing reasons.

Factory New: 0 – 0.07
Minimal Wear: 0.07 - 0.15
Field Tested: 0.15 - 0.38
Well Worn: 0.38 - 0.45
Battle Scarred: 0.45 - 1

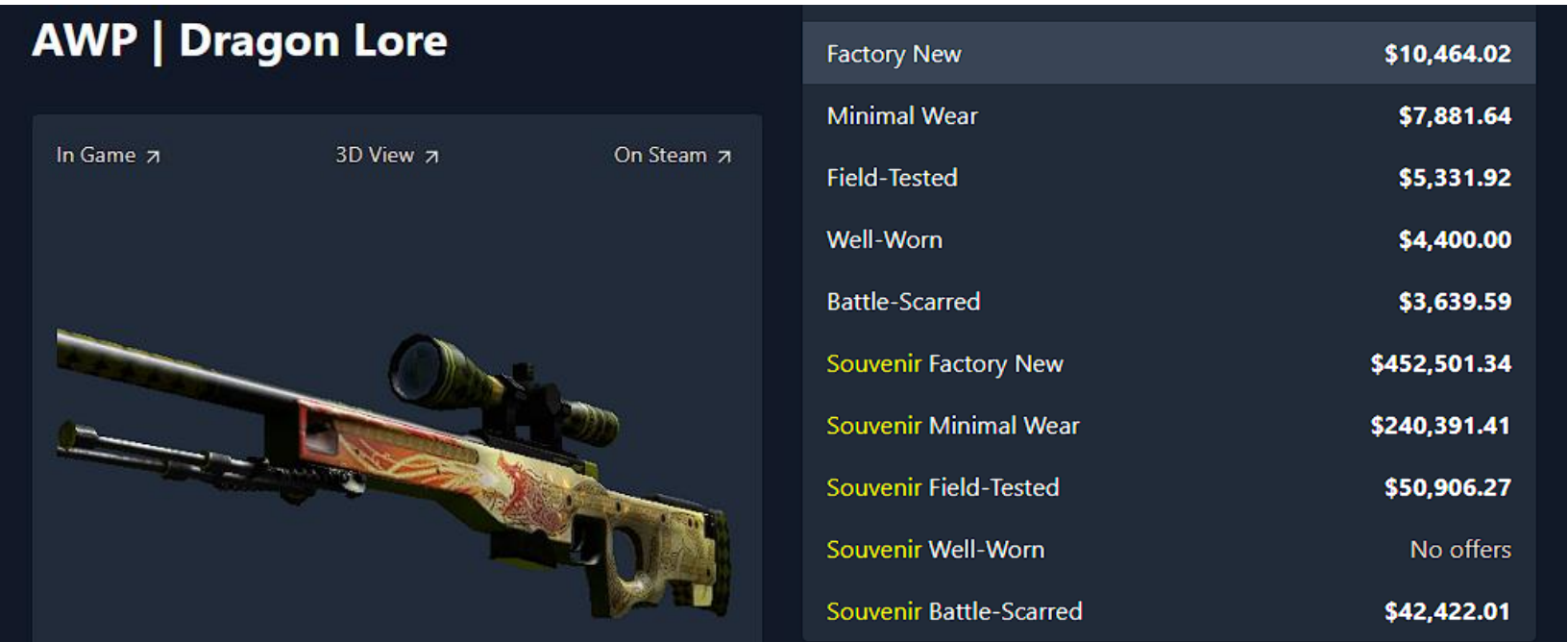
Introduction:

Counter Strike 2 (CS2), the most recent video game release by Valve, is a sequel to the decade-old massively popular shooter Counter Strike: Global Offensive (CS:GO). The most unique feature of CS:GO was the flourishing market of weapon skins surrounding the game, in which rarity and demand can cause certain weapon or knife skins to have exorbitant pricing, such as the weapon skin AWP | Dragon Lore having prices ranging from $3600 cheapest to over $300,000 for its rarest form. While the game has shifted over to Counter Strike 2, Valve decided to transfer all weapon skins over from CS:GO to CS2, viewing it as a consumer-friendly move to protect those with valuable skins in CS:GO during the transition period.

I decided to make a tool that would help newer players to CS:GO find some more budget-friendly skins to purchase, as newer players might get lost in the sea of overly-expensive rare skins, overlooking many of the skins that look great at lower budget points for those interested in collecting skins. This tool is the CS2 Skin Pricing Tool, giving some of my personal recommendations of well-priced skins along with their current pricing from an American-friendly* marketplace.

**Some Chinese marketplaces, such as buff163, do not allow American users to sign up and participate.*

AWP | Dragon Lore pricing varies wildly by condition, but is certainly expensive no matter how it is obtained. These are the cheapest prices for the skin as of 12/3/, provided by csgoskins.gg.



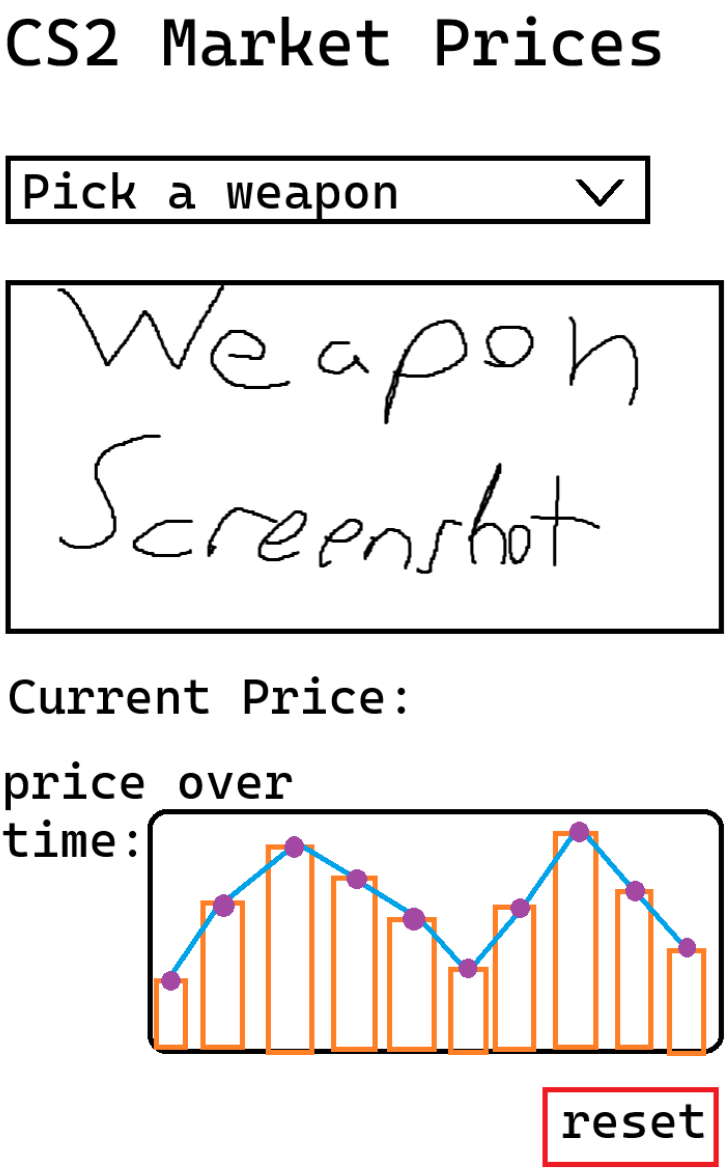
Usability Goals:

- As a new user, I would like to be able to find and compare weapon skins and their prices.
    - Addressed through implementation of the CSfloat API. CSfloat is an American online marketplace for these CS2 skins, allowing me to retrieve current lowest prices for the skins.
- As an interested user, I would like to be able to see the skins being compared.
    - Addressed through media implementation through displaying saved pictures.
- As a potential shopper, I would like to be able to find these skins at their displayed prices.
    - Addressed through the retrieval of the listing ids through the API, allowing for the direct linking to the cheapest listings that provide the price on my site.
- As an international shopper, I would like to be able to find these skins in my local price.
    - Addressed through the implementation of a currency converter using google data as of 12/3/2023.
- As a veteran CS2 player, I would like to tweak the settings to find more specific listings.
    - Addressed with the implementation of a float slider, allowing those who want to find skins by wear value more specific listings without requiring all users to do so thanks to carefully selected default options.

Design Process:

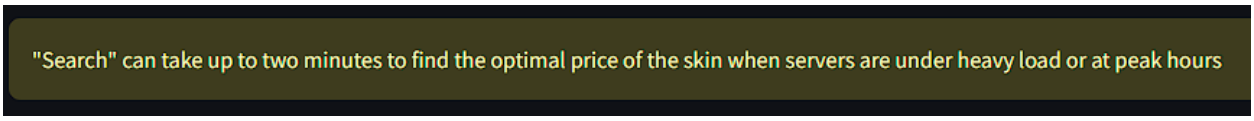
The plan from the beginning was to make the interface easy to use and understand. For these reasons, the first things the user needed to see were the skin they were selecting and an image of that skin, so I devoted the primary focus of the interface to these aspects. My initial sketch of how I wanted the website to look was designed around these aspects, though I had some different ideas as to how the bottom portion of the page would look.

Initial Website Sketch: (it was very early in the process)



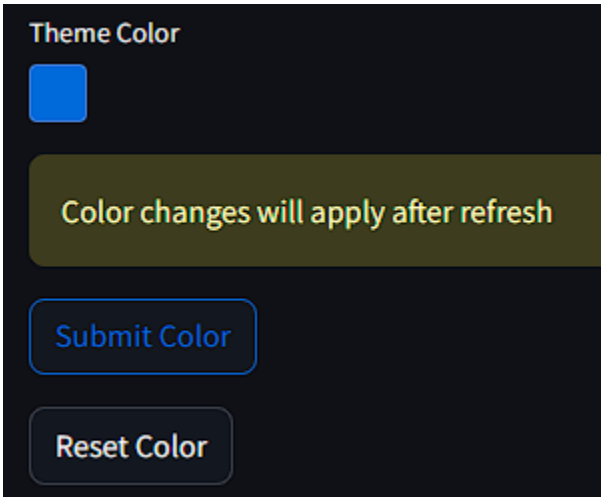
After I started developing, I realized how barebones this felt in practice, so I added a few more features and segments to the finished product. I also figured out that the pricing over time is not something that I have access to with public APIs, so I couldn't implement that the way I initially wanted to.

I also started developing at a time when the API of CSfloat was under heavy load, and so requests could take upwards of a minute. This made me change the design to accommodate such behavior, and I implemented more feedback to the user to assuage frustration during long waits so that they at least knew what they were waiting for.



Implemented feedback to warn user about peak hour return times.

As I moved forwards with implementation, I started to look more into what actually needed to be included in the finished project. That's where some of the sidebar features came from, such as the currency radio button which allows the website to cater to an international audience. It also gave way to the theme selector in the settings tab for accent colors.



Implemented theme selector under settings tab.

Lastly the credit sidebar tab mainly came from the need to include a map and table, which otherwise does not fit too well into the theme of the application. The credit tab provided a perfect place to slot these elements into the project without too much of a jarring feel or disconnect from the rest of the website, as well as slotting in some disclaimers about the websites used and my lack of affiliation with them.

API Integration:

Integration of the CSfloat API was a difficult choice itself. Valve, the makers of CS2, have their own official marketplace with an open API. However, too many requests causes your client to be temporarily blocked from sending any more, and I did not want to think about low limits early on when developing; especially when I was thinking about implementing the price history feature.

Thankfully, CS2 has plenty of third-party marketplaces thanks to the high value of some skins in the game, and CSfloat is an open source marketplace that is fairly popular and had a developer API. It is important for the marketplace to be popular with lots of skin volume so that prices of the skins on the site aren't skewed due to a lack of competition and do represent the market as a whole.

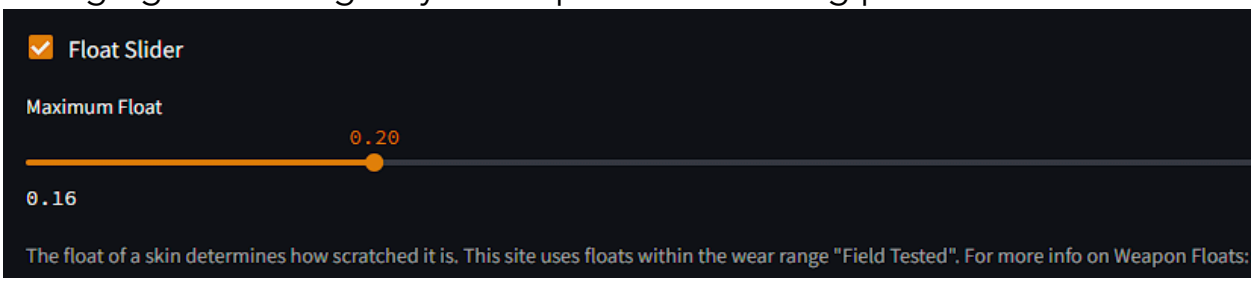
Learning how to manipulate the requests was easy as it uses a similar format to the NASA API that was used in class for responses, with the main problem being the method to filter out and search for skins. "market_hash_name" is used to search for skins, and while this regularly matches the skin's in-game name, it does not always match exactly. This caused some errors early on which were difficult to debug, causing me to swap out one of my original 10 selected showcase skins for the website.

Regardless of the API I chose to integrate, I found that price history for skins was always a feature that was either inaccessible and private or required a paid subscription and an API key. This caused me to ultimately drop the idea of having a price history chart in my application to forgo both of those requirements for user convenience.

Interactive Widgets:

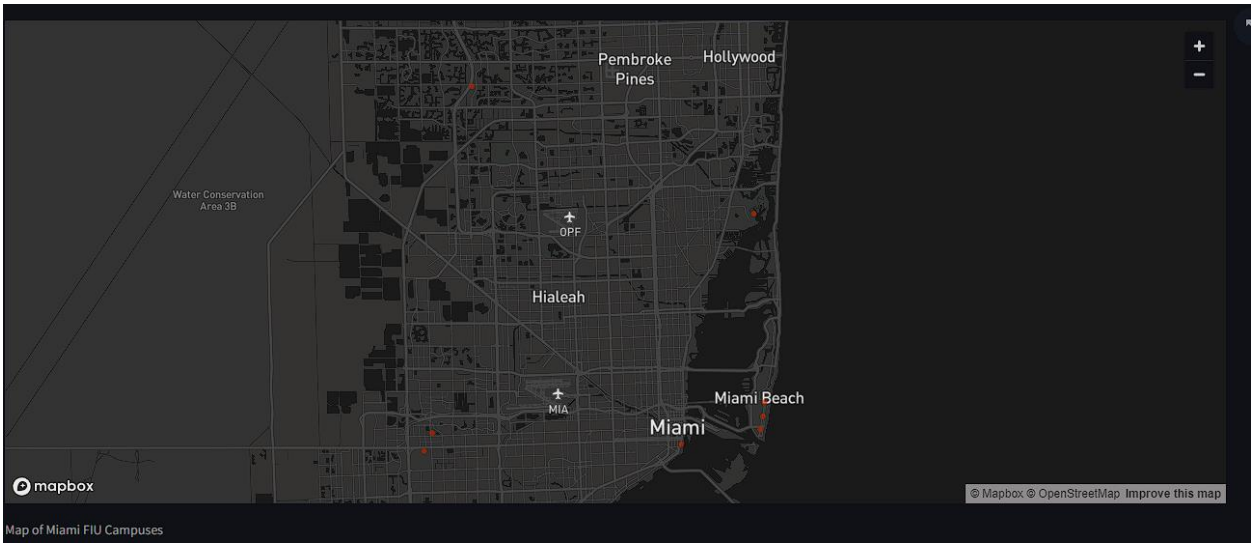
The most interactive of the widgets are definitely the float slider for advanced users, the Theme Color selector for accent colors, and the FIU maps in the credits page.

The float slider allows users that understand CS2 skin float value to alter it for themselves, changing the API request to include skins with less or more scratches on the gun in its search for the cheapest listing. Note that if the cheapest listing has a really low float value closer to 0.15, changing this setting may not impact the resulting price.



The Theme Color selector allows the user to select the accent color for the app. The default is the Orange color that Valve uses to brand CS2, but it can be changed to any color on the color spectrum that the selector allows you to choose. In case the user does not like their selection, it can always be reset back to the Valve orange.

The FIU maps in the setting page show all of the FIU campuses that are centered around Miami, minus the pin in the Key West area. This was chosen to provide the most realistic view of the FIU campus locations, discarding outliers to have a more central focus on the campuses that most students attend and are familiar with.



HCI Design Principles:

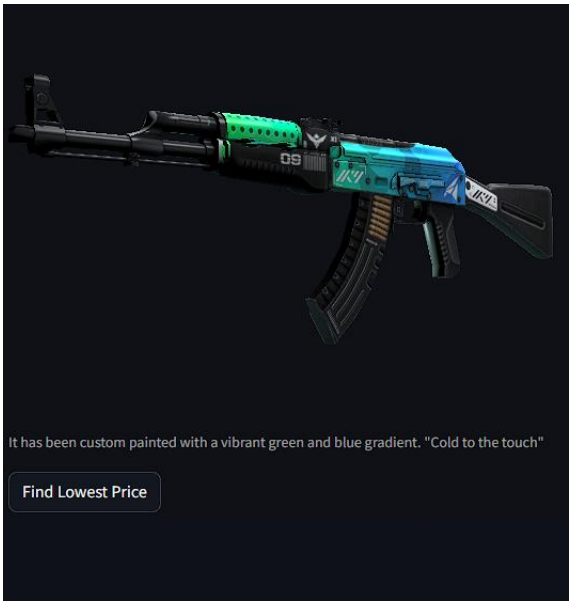
The main design principle followed through this website was to ensure that the flow of the website reflects the user's thought process consistently, avoiding distractions. For example, the first thing that the user looks at after the title of the page is the most important element – the large bar containing all the skins the user can select. Afterwards, many of the interface elements have been moved away from the main page to ensure that the user only can select elements that have a direct impact on the result of their search, and even then, only if they need to alter it.

The search results show at the bottom of the page alongside a link to the listing where the price is sourced from. All elements deemed unnecessary for searching have been moved into one of two submenus in the sidebar, such as the bonus accent color feature and the credits and acknowledgements. Therefore, from the top of the page as the eyes move downwards, the user only sees what they need to see to get the desired result from a search.

Feedback was secondly most important; I wanted to make sure the user knew that every action they made was reflected in the interface. Nothing is more frustrating than not knowing whether a click registered, so I made sure that every registered click provides some feedback visible to the user, especially when they have to wait for results.

Testing:

Testing with sample users revealed that it would be beneficial to have the image of the weapon skin selected show before initiating the search instead of after. Because of this, the logic for the image showcase was changed to be tied to the skin selected in the select box rather than being tied to the finish of a search. This change helps the website's perceived responsiveness greatly during times of heavy load on the API.



Testing also revealed that placeholder text is better than blank text for beginner comprehension of what the default text was. For this reason, the default text for the skin selection box was changed from blank text "" to "[Select a skin]".