



The Wine Project

INFO 247 - Final Project Report

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Section I. Project Goals

Our project has designed and implemented a [web-based visualization tool](#) to assist wine novices at 21-29 years old to select wines. Unlike conventional wine selection tools that start from a few available wines in the market and base on complex attributes such as acidity, alcohol, sweetness and bodiness to predict users' preferences, our tool puts users at the center and adopts an innovative approach based on flavors users already familiar with (e.g. fruity, herbal, floral). It is built on the belief that wine preference is very subjective and a better way to select wines should be determined by its flavors. Our project is uniquely positioned to help young people who have limited wine knowledge and limited access to tasting a wide collection of wines when purchasing wines in a setting like grocery stores.

Specifically, the project aims to accomplish the following tasks:

1. Introduce the wine selection problem and our flavor-based methodology
2. Explain research insights of drinking frequency across age groups, and relationship of affordable price and wine rating
3. Visualize an interactive taste profile with user inputs
4. Present the variety selected by user with details of wine attributes, comparison to a reference wine variety, and top 5 rated wines of this variety
5. Provide 3 quick tips to read the wine labels before heading over to the store

Section II. Discussion of Related Work

1. Visualizing Wine Reviews

Erin Dugan (2018) conducted a visualization analysis with the first dataset (Wine Review) we have, by examining the relation between wine rating and price, how rating and price vary by grape source and country origin, as well as the geo-distribution. This blog post provided the team some inspiration for **EDA** and formulating some initial ideas of an **exploration tool**.

2. Typical Wine Choice and Consumption in Apulia

Romanazzi et al (2010) published a paper to discuss both tangible and intangible aspects of wines that can influence consumers' purchase decision and consumption experience. The authors shed lights on different consumer motivations in purchasing wines and the intangible emotions and feelings associated with wine consumption. This paper helped the team understand the motivations of users in purchasing wines, and take the **user-centered approach** from the early stage.

3. Purchase Attributes of Wine Consumers with Low Involvement

Barber et al (2008) published a marketing related paper, built on the assumption that wine consumers have different types of expectations and experiences for wines, and marketing strategies should adapt to it. The paper directed the team's attention to **wine novices** and what **marketing cues** wine novices used to purchase wine.

4. Understanding wine purchase and consumption behavior: a market segmentation proposal

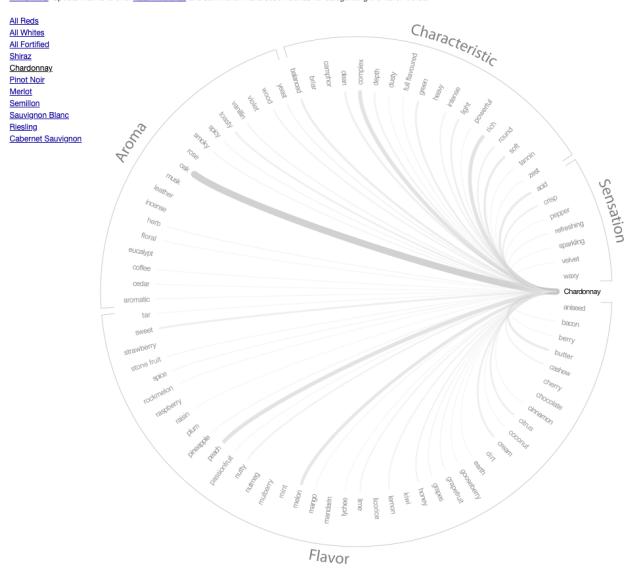
Riviezzo et al (2011) carried out a market segmentation research to understand wine purchase and consumption behavior. Four main segments of consumers emerged from the cluster analysis. The characteristics of the four proposed segments of consumers based on multiple variables in each phase of the purchasing process can inform our selection of **factors involved in consumer purchase** and consumption.

5. How do different wines taste?

Carl Tashian created a Wine Flavor Wheel for an NYU course called Visualizing the Five Senses, which helps the team think about what senses should be more important and how to **visualize wine taste**. This visualization shows the tastes of different wine varieties via sankey diagram. Carl categorized wine tastes into four parts: **aroma**, **characteristic**, **sensation**, and **flavor**. Each part contains descriptive words that Carl collected from public wine tasting notes. Views could choose among varieties to see the corresponding visualization. The thickness of the line indicates how frequent the word is used to describe that specific wine variety. Below is a snapshot view of Chardonnay:

How do different wines taste?

What is the relationship between wine varieties and flavor components? This visualization attempts to show the strength of these relationships. I culled descriptive flavor words from over 5,000 published wine tasting notes written between 1998-2009 in a major Australian wine magazine. Written by [Carl Tashian](#) for [Visualizing the Five Senses](#), a class at [ITP @ NYU](#). Special thanks to chef [Adam Mezrahi](#) and sommelier Maria José Huertas for categorizing the flavor words.

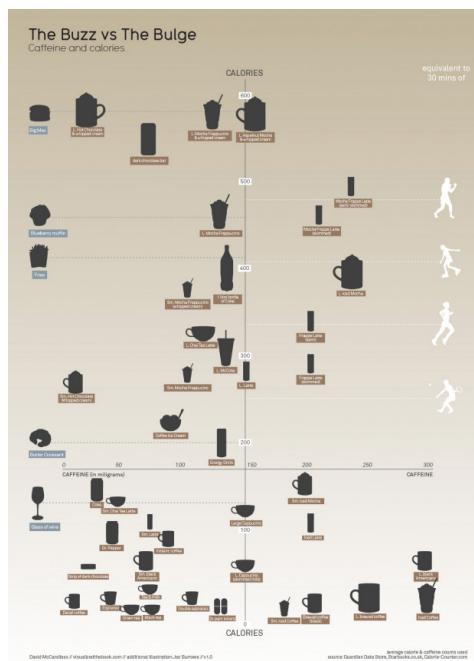


6. Visualization of Workaday Data Clarified by Means of Wine Fingerprints

Andreas Kerren (2010) wrote a paper that developed two different visual representations - called wine fingerprints - for wine related data and discussed the pros and cons. It discussed how other **existing visualization approaches** were used, such as wine aroma wheel, animated taste visualization, radical wine flavor wheel. It also discussed what wine attributes were often represented using infovis techniques, like wine color, rating, grape variety, aroma.

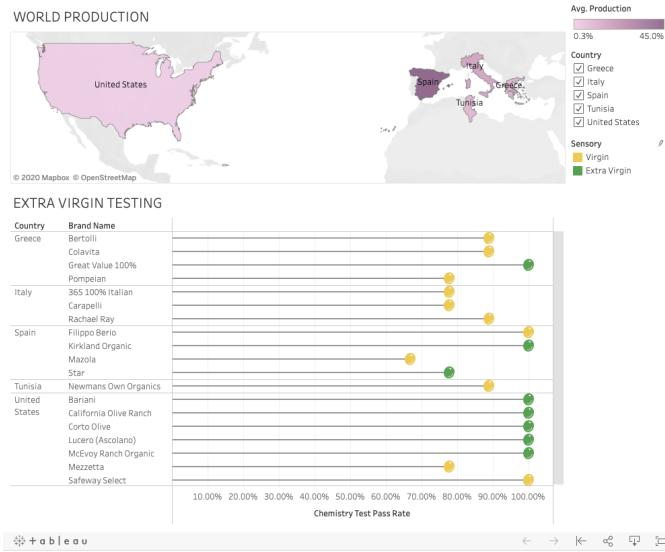
7. Visualizing Your Daily Brew: 20 Infographics About Coffee

The blog post collected 20 different infographics on coffee, where they compared coffee origins, tastes, compositions and with other drinks. The team considered wine is also a popular drink and we can learn from some of the **visualization ideas** for coffee. Since they both have a wide range of ingredients, processing, production regions, complex tastes and consumers with differentiated preferences. Below is one example using **two dimensional scatterplot**:



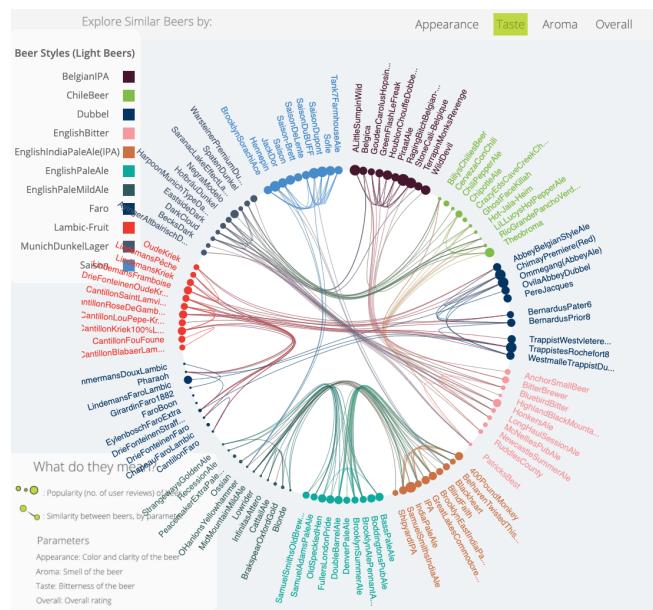
8. GOOD & EVOO

The InfoViz project on extra virgin olive oil by previous students showed the team some excellent storytelling methods and implementation of visualizations. The project has focused a lot on the attributes of production regions and olive oil quality. It also informed consumers about the relation between price and quality rating. These have helped the team improve our **storytelling, research and a focus on flavor throughout our wine project**. Below is a snapshot of one visualization with maps and modified bar chart:



9. BEERVIZ

The InfoViz project on beer taste visualization provided us with a great example of **visualizing intangible features of drinks**, as seen in the snapshot below. Yet it also reminded us the importance of narrative data visualization and ensuring clarity of complex visualization. It inspired us to put more **focus on telling an interesting story with data** in contrast to focusing more on complex visualization.



Section III. Implementation Methods

3a. Data Processing

The team used three main datasets. The first is about Wine Reviews from Kaggle, which is composed of data from WineEnthusiast. The dataset was collected up to 11/24/2017 and contains 119955 records with 14 data fields including origin of wine, grape source it was made from, price, taste score, taster who gave the score, and tasting feedback. The second dataset is about flavor profiles of white wines and red wines from Wine Folly. There are 10 dimensions of flavors in 1-5 degree to represent the intricacies of flavors, and the team keeps 6 most representative dimensions in the design of the taste profile page. The third dataset is also from Wine Folly. We collect associated wine properties such as body, acidity, sweetness, and alcohol to be used in the variety description page.

Below is a table to describe where the data were used:

Page	Visualization	Dataset	Source
Our Research	Slope graph Stacked bar chart Scatterplot	Wine Consumer Segmentation ; Wine Reviews	2017 Wine Market Council 2017 Kaggle
Taste Profile	Scatterplot	Flavor Profiles of White Wines ; Flavor Profiles of Red Wines	2016 Wine Folly
The Variety You Selected	Isotopes Radar chart	Flavor Profiles of White Wines ; Flavor Profiles of Red Wines and Wine Variety Properties	2017 Kaggle Wine Folly

3b. Implementation Tools

The team used the following tools to implement the web product. See the table below for details:

Activity	Component	Tool
Data	EDA	Python, Tableau, Excel
	Data Processing	Python
Design	Fonts	Google Fonts
	Icons & Graphics	Figma, Illustrator
Development	Web Framework	Bootstrap
	Visualization	Python, Tableau, D3.js, D3 Radar Chart
	Tooltips	Tippy.js
	Animation	Animate.css
	Repository	GitHub

Section IV. Prototype Usability Testing

4a. Usability Test Design

The purpose of the usability test is to understand the effectiveness of the tool design and collect user feedback to improve the tool. The tool is user-oriented at heart, so the evaluation is both functional and aesthetic. The test is facilitated based on a much earlier iteration which can be found in the appendix.

The test consists of five sections:

1. **Demographic questions:** used to filter out target populations
2. **Pre-knowledge test:** used to assess wine knowledge of the users before using the tool to set the base for comparison.
3. **Scenario-based tasks:** used to test the flow and information presentation of the interface.
4. **Post-knowledge test:** used to assess how the information in the tool changes the user's level of wine knowledge and confidence in choosing wine.
5. **General Feedback:** used to address common concerns and record suggestions and additional thoughts.

4b. Results and Implications

The results consist of qualitative feedbacks, likert scale and quantitative task completion rate, providing meaningful feedback for our final iterations.

1. Demographic Result

Participant No.	Age	Gender	Occupation	Frequency of wine purchase
1	28	Male	Software Engineer	Once a year
2	25	Male	Student	Once a month
3	27	Female	Student/Previously full-time employee	Twice a year

As described previously, our project primarily aimed to provide more applicable wine knowledge for young professionals to better select wines. Our demographic

pre-screen helped us verify that the testing population met our target demographic as **wine novice** and **young professionals**.

2. Pre- & Post Knowledge Test

Question	Participant	Pre-test	Post-test
How do you rate your level of confidence to find a wine based on your need? (Scale: 1-7)	Participant 1	2	5
	Participant 2	3	6
	Participant 3	2	4
How do you rate your current level of wine knowledge ? (Scale: 1-7)	Participant 1	3	3
	Participant 2	2	6
	Participant 3	2	2
How likely are you to use the tool presented to you to help with your experience? 1-7. What information, features will make you more likely to use the tool?	Participant 1	-	2
	Participant 2	-	6
	Participant 3	-	4

Level of Confidence: All three participants' confidence level increased after using the tool, indicating that our tool did a good job at guiding novice wine purchasers through the process and gave them more idea of where to start.

Level of Knowledge: Yet 2 out of 3 participants claimed their wine knowledge did not increase after using the tool. Participants indicate that if we add information related to correlation between price and rating, as well as provide a reference point to compare with previous wine they have tried before, this number will go higher. We believe the result is also influenced by our half-implemented background section with key information missing.

Likelihood to Use the Tool: Participants indicated that factors that will make the score higher include adding comparison to previously tasted wine.

3. Scenario-Based Task (specific tasks in appendix)

Task Categories	Participant	Completion Rate
Information Search and Identification	Participant 1	2/3
	Participant 2	3/3
	Participant 3	3/3
Interaction Usability & Discoverability	Participant 1	2/2
	Participant 2	1/2
	Participant 3	1/2

There are a total of 5 scenario-based tasks. 3 of the 5 tasks required users to find and comprehend information presented. The other 2 asked users to perform interactions with only the end goal given.

Overall, tested participants are able to complete most tasks given. The completion rate for all 3 participants is 4/5 tasks. Yet looking into details, 2 out of 3 participants aren't able to navigate the flavor selection process including selecting & deselecting the 2 flavors to explore, selecting the variety to explore details, etc. Thus the iteration of interaction is put heavily on redesigning the flow of the flavor exploration section.

4. General Feedback & Modifications

The following chart summarized all the qualitative and general feedback we acquired from usability testing with targeting modifications we made based on the feedback.

Section	Feedback & Observations	Modifications
Background / Our Research	Storyline on why our project focused on a flavor-based approach or why the population and price range isn't clear.	Rewrite the section to highlight important information, reorganize the story with more supplement data visualizations.
Flavor Exploration & Variety Details	Too much scroll	The page will automatically move up to disclose new information
	Unable to understand the flavors based on icons	Hover-over icon will show a simple definition and description of the flavor
	Unable to select and deselect based on flavor	Add error messages when users try to add a new flavor as a guide to help users interact with the tool.

	<p>Discoverability issue with the scatterplot (Unable to understand transparency and different variety; Unable to discover scatterplot is clickable)</p>	Add step-by-step inquiries and short explanations to help users interact with the tool.
	<p>Unable to understand the meaning of scale and relativity to existing knowledge of wine</p>	Enable the users to add an anchor/reference point (choose from a list of familiar wine) to the scatterplot.
	<p>Question the need to see all the flavor information of a variety.</p>	Redesigned the variety detail section to include a radar chart showing all flavor profile values in conjunction with reference points.
Tips*	<p>Users' low likert scale on wine knowledge</p>	This section is added besides the modification of the background section to provide users more applicable tips before they purchase wine in the grocery store. Specifically, we planned to add wine-label reading applicable tips.

Section V. Final Visualization Description

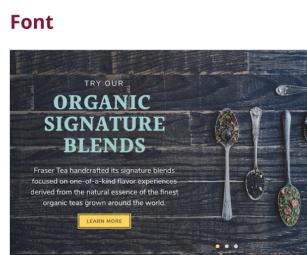
5a. Final Design

Link to the interface: <https://yinan-chen.github.io/wineproject/>

5b. Detailed Visualization Explanation

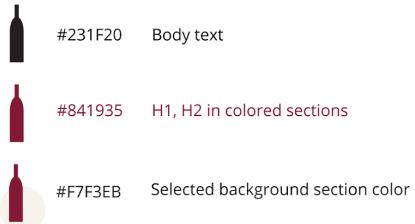
Design Guide

Our font, color scheme are all inspired by wine features. Specifically, the title font is inspired by similar fonts of wine labels, serif and with a vintage vibe. The colors are extracted from red wine and white wine. Our icons all follow a unified style as indicated below.



Heading Halant Bold

Body Open Sans Regular
 Menu Halant semibold/bold



Icons



Header

Our website highly depends on user interactions. The website content will be revealed as users complete each step. Thus, the initial header does not contain any section tabs. As users move on, associated tabs would be displayed and highlighted. The image below shows the final look of the header.



[Our Research](#) [Taste Profile](#) [Details](#) [Tips](#)

Landing Page

The landing page provides a brief introduction to this website, which helps users to quickly get the topic and the problem that this project focuses on. Also, using the format of narrative story helps draw users' attention and invoke their interest in the following sections. Users will click on the down-arrow icon to trigger the Our Research section.

A Guide to Wine Purchase

We all have this moment...

Imagine yourself standing in front of the wine aisle of a store, wondering where to start. The labels on the wine bottles are very informative, but often too informative to wine novice - cuz nothing really makes sense!

Should I pick a wine based on its price, brand, variety, rating, region, year, or even more confusingly complex attributes, like acidity, sweetness, body, aromas and colors?

Conventional apps often start from recommending a list of wines from an expert perspective. We believe wine preference is subjective. The best way to know whether you like the wine or not is to taste it yourself. Yet what if you can't taste wines when you have to purchase one at a grocery store? Our project is uniquely positioned to recommend young people in their 20s affordable wines based on flavors. Hope you can become a more confident wine buyer with the help of our project!

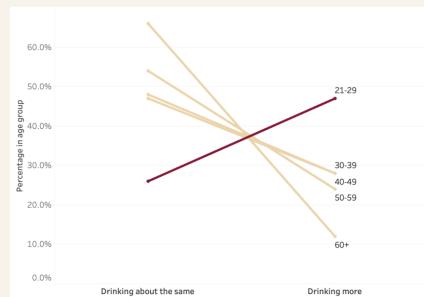


Our Research

The research part shows the literature review that we conducted for this project. It uses statistical visualizations to explain our choice of user group and the reasons to explore wines based on flavors. To help users quickly get the key messages, we bold the most important conclusions. Users will click on the start button to move on to the Taste Profile section.

Our Research

Drinking frequency among different age groups



The change in wine drinking frequency showed that **the 21-29 group is the only significantly growing market segment**.

47% of the 20s expressed "drinking more wine" than a couple years ago. As age grows, people tend to maintain the same frequencies and rather than drink more.

Since 21 is the legal drinking age in the US, it makes sense that 21-29 years old are new to the wine world to learn and explore. We decided to target the 21-29 years old, who **have the strongest demand to explore wines but limited wine knowledge**.

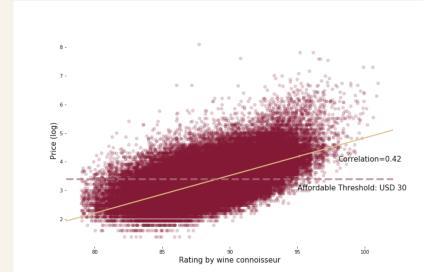
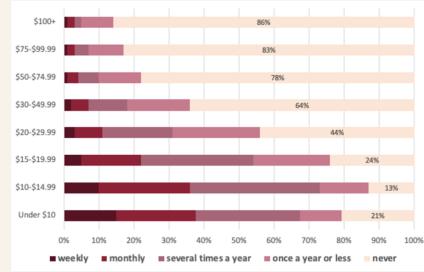
Understand affordable price & wine rating

Q: What does affordability mean for wine purchasers ?

The majority of wine drinkers never bought wines priced over \$30, while wines under \$30 are popular among drinkers. For the sake of affordability for people in their 20s who are presumably price sensitive, we decided to recommend wines under \$30 from our dataset.

Q: Are expensive wines better than cheaper (affordable) wines ?

Not necessarily. There is some positive correlation between wine prices and ratings, but higher price does not guarantee better wines. The most expensive wine (\$3300) in the dataset is not rated high by wine connoisseurs. Given the huge variations at each price level, **affordable wines can also be good and sometimes better than expensive ones**.



👉 Ready to explore wines based on your flavor ? 👉

START

Taste Profile

Taste Profile is the main interactive part of the website. It takes on users' choices on wine type, flavors, and the flavor combination to render details of interested varieties for the next section. Since the content rendering in the next step will be dependent on users' choices on the previous steps, We clearly label each step with instructions for users to complete the required interactions.

In the first two steps, users will click on the icon to make the selection. In the meantime, the icon will be highlighted. Additionally, users could hover on each flavor icon to get a more detailed explanation. We also implement error messages to prevent users from choosing more than two flavors. To alter flavor choices, users will need to deselect the unwanted ones first and then make new selections.

In step 3, we plot varieties to associated flavor combinations and show them as a scatterplot. Users could hover on each grape icon to view the varieties under that specific flavor combination. To help users understand the flavor scale that we use, we also let users to optionally choose one familiar wine variety as the reference. The referenced variety will be highlighted in the scatterplot as well as shown in the radar chart used in the next section. Users will click on the favorite flavor combination to render variety details in the next Details section.

Taste Profile

- ① Select your preferred wine type



White Wine



Red Wine

- ② Choose you **TWO** favorite flavors:



Citrus Fruit



Stone Fruit



Tropical Fruit



Creaminess



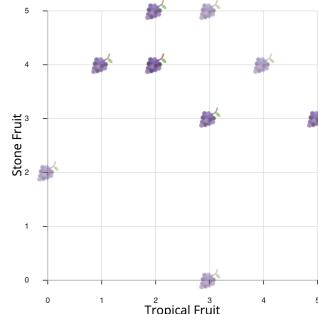
Floral



Herbal

- ③ Hover & Click on the flavor combination that you like to explore the associated wine varieties

(Optional) Set your familiar wine variety as the reference to better understand the scale:



Taste Profile

- 1 Select your preferred wine type



White Wine



Red Wine

Floral tastes in red wine come from a variety of chemical compounds. Some frequent flowers include citrus blossom and lilies.

- 2 Choose you **TWO** favorite flavors:



Citrus Fruit



Stone Fruit



Tropical Fruit



Creaminess



Floral



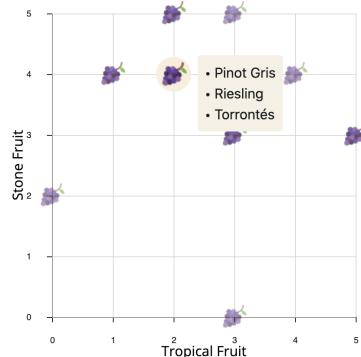
Herbal

You could only select **TWO** flavors! Please deselect unwanted ones first. ×

- 3 Hover & Click on the flavor combination  that you like to explore the associated wine varieties

(Optional) Set your familiar wine variety as the reference  to better understand the scale:

Pinot Gris ▾



Details

This section provides users with variety details including taste profile, properties, and recommendations by wine rating. Varieties shown in this section will be based on users' choices on the flavor combination from the previous section. If there are multiple varieties under the same flavor combination, a tab group with variety names will be displayed on the left. The content on the right will be updated based on users' choices.

For each variety, isotope illustrates its properties, the radar chart summarizes its flavor profile, and the list group shows the recommendation. If a reference variety is set in the previous section, it will be shown in the radar chart as the bottom layer. The recommendation covers information of the top 5 wine choices. Users could click on each one to view the details.

The variety you selected

<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"></div> <div style="border: 1px solid #ccc; padding: 2px; background-color: #fff; color: #000; font-weight: bold;">Sémillon</div>	<p>Sémillon</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Body</td> <td style="width: 50%; text-align: center;">      </td> </tr> <tr> <td>Acidity</td> <td style="text-align: center;">      </td> </tr> <tr> <td>Sweetness</td> <td style="text-align: center;">      </td> </tr> <tr> <td>Alcohol</td> <td style="text-align: center;">11.5-13.5% ABV</td> </tr> </table>	Body	    	Acidity	    	Sweetness	    	Alcohol	11.5-13.5% ABV	<div style="text-align: center; margin-bottom: 10px;">  <p>Wine Variety</p> <ul style="list-style-type: none"> Pinot Gris Sémillon </div> <p>The Top 5 You Should Try (Based on ratings):</p> <ol style="list-style-type: none"> 1. Ardenvoir 2008 Artist Series Sémillon (Columbia Valley (WA)) <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Rating: 93</td> <td style="width: 50%;">Description:</td> </tr> <tr> <td>Price: \$22.0</td> <td>The second edition of Chateau Rollat's Ardenvoir Sémillon includes eight percent Sauvignon Blanc in the blend, a nice addition that tightens up the mouthfeel. Barrel fermented, it's bursting with rich tropical fruit flavors, Meyer lemon, sweet toasted cracker and caramel, an exceptionally concentrated and full-bodied wine.</td> </tr> <tr> <td>Origin: Washington, US</td> <td></td> </tr> <tr> <td>Winery: Ardenvoir</td> <td></td> </tr> </table> <hr/> <ol style="list-style-type: none"> 2. Ardenvoir 2007 Sémillon (Columbia Valley (WA)) <hr/> <ol style="list-style-type: none"> 3. Ardenvoir 2009 Sémillon (Columbia Valley (WA)) <hr/> <ol style="list-style-type: none"> 4. Silkman 2015 Semillon (Hunter Valley) <hr/> <ol style="list-style-type: none"> 5. Novelty Hill 2005 Stillwater Creek Vineyard Sémillon (Columbia Valley (WA)) <hr/>	Rating: 93	Description:	Price: \$22.0	The second edition of Chateau Rollat's Ardenvoir Sémillon includes eight percent Sauvignon Blanc in the blend, a nice addition that tightens up the mouthfeel. Barrel fermented, it's bursting with rich tropical fruit flavors, Meyer lemon, sweet toasted cracker and caramel, an exceptionally concentrated and full-bodied wine.	Origin: Washington, US		Winery: Ardenvoir	
Body	    																	
Acidity	    																	
Sweetness	    																	
Alcohol	11.5-13.5% ABV																	
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Price: \$22.0	The second edition of Chateau Rollat's Ardenvoir Sémillon includes eight percent Sauvignon Blanc in the blend, a nice addition that tightens up the mouthfeel. Barrel fermented, it's bursting with rich tropical fruit flavors, Meyer lemon, sweet toasted cracker and caramel, an exceptionally concentrated and full-bodied wine.																	
Origin: Washington, US																		
Winery: Ardenvoir																		

Tips

The tips section is the last section, also the end of the story. We purposely presented information in the format of wine-label reading to link back to the scenario we formed in the premier. The readers are once again back in front of the rack full of wines. Now with all the new knowledge at hands, what are some final takeaways to help apply the flavor knowledge? Based on research, 3 tips are congregated to teach users how to make sense of specific sections of information on the wine label, for example, what if you can't find the variety listed on the label? How to quickly make assumptions of sweetness based on alcohol level? What's the quick need-to-know about the year? This final section answered these carefully selected questions with simple language, putting an end note to the user's journey of wine exploration.

Before you leave, check out some tips

Now, we believe you have some better idea of grape variety, aromas and price of wine you should start with as a novice. Here are 3 final tips to help you read other helpful attributes on the wine labels.



<https://winefolly.com/tips/reading-wine-labels/>
<https://www.businessinsider.com/things-to-look-for-on-a-wine-label-according-to-an-expert-2018-8>
<https://vincarta.com/blog/how-to-read-a-wine-label/>

Footer

The footer includes project background information and provides links to the Final Report and References page.



References

This separate page summarizes links to references used in this project. By clicking on the logo, users could navigate back to the landing page.



References

Dataset

- Kaggle: <https://www.kaggle.com/zyncide/wine-reviews>
- Red wine data: <https://winefolly.com/deep-dive/red-wine-flavor-profiles/>
- White wine data: <https://winefolly.com/tips/flavor-profiles-of-white-wines/>
- Variety properties data: <https://winefolly.com/grapes/>

Background Research

- http://winemarketcouncil.com/wp-content/uploads/2017/10/2017_WMC_Wine_Consumer_Segmentation_Slide_Handbook2.pdf
- Illustration modified from: <https://www.dreamstime.com/royalty-free-stock-photo-supermarket-wine-image20293395>

Taste Profile & Details

- Icons redesigned from <https://www.flaticon.com/home> with free commercial license
- <https://winefolly.com/deep-dive/identifying-flavors-in-wine/>
- <https://winefolly.com/tips/common-flower-aromas-in-wine/>
- <https://tanglewoodwine.co.uk/blogs/news/spice-wine-guide>
- <https://www.winefrog.com/definition/130/leathery>
- <https://winefolly.com/wine-pairing/herb-and-spice-pairings-with-wine/>
- <https://wineintro.com/basics/flavors/citrus.html>
- <https://winemakermag.com/article/937-stone-fruit-wines>
- <https://winefolly.com/tips/40-wine-descriptions/>

Tips

- Image adapted from: <https://winefolly.com/tips/reading-wine-labels/>
- <https://www.businessinsider.com/things-to-look-for-on-a-wine-label-according-to-an-expert-2018-8>
- <https://vincarta.com/blog/how-to-read-a-wine-label/>

Development

- Bootstrap <https://getbootstrap.com/>
- D3.js <https://d3js.org/>
- Tippy.js <https://atomiks.github.io/tippyjs/v6/creation/>
- Animate.css <https://animate.style/>
- Radar Chart <http://bl.ocks.org/Kuerzibe/338052519b1d270b9cd003e0fbfb712e>
- Google Fonts <https://fonts.google.com/>

UC Berkeley INFO247 Information Visualization and Presentation - Final Project

Present to you by Yinan Chen, Yin Qiu, Xinran (Tracy) Wei

[Final Report](#) [References](#)

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Section VI. Work Distribution

Tasks	Sub tasks	Yinan	Yin	Tracy
Data Preparation	Find Data Source	33%	33%	33%
	Data Selection	33%	33%	33%
	EDA	0%	100%	0%
	Data Processing	50%	50%	0%
Website Design & Implementation	Website Storyline	33%	33%	33%
	Information Architecture	33%	33%	33%
	Interface Design	50%	0%	50%
	Content Writing	0%	70%	30%
	Graphic Design	20%	0%	80%
	Interaction Design & Front-end Animation	50%	0%	50%
	Front-end Development	100%	0%	0%
	Website Data imbed	100%	0%	0%
Visualization Design & Implementation	Background Data Design	0%	100%	0%
	Background Data Implementation	0%	100%	0%
	Scatterplot Design	33%	33%	33%
	Scatterplot Implementation	100%	0%	0%
	Infographic Design	33%	33%	33%
	Infographic Implementation	20%	10%	70%
	Iconographic	10%	0%	90%
	Spider Graph Design	33%	33%	33%
	Spider Graph Implementation	100%	0%	0%
User Testing	Usability Testing Guide Design	0%	10%	90%
	User Interviews	33%	33%	33%
	Usability Test Report	33%	33%	33%
Presentation Report	Presentation Slide Deck (Midterm)	33%	33%	33%
	Final Report Writing	33%	33%	33%

Section VII. Appendix

Website Link: <https://yinan-chen.github.io/wineproject/>

Thumbnail Image:

<https://drive.google.com/file/d/1TTfEUgcJHX99ZdSD23O0kiyY15xEBbVg/view?usp=sharing>

Figma Link:

<https://www.figma.com/file/lphDpUrcyxWAafAWBELhgG/WineProject?node-id=23%3A0>

Repository Link: <https://github.com/yinan-chen/wineproject>

Deliverables Folder Link:

https://drive.google.com/open?id=1UL7Q26Bq9W3N9ottIP55pkQnO_BRYOyS

7a. Resources

Dataset

- Kaggle: <https://www.kaggle.com/zynicide/wine-reviews>
- Red wine data: <https://winefolly.com/deep-dive/red-wine-flavor-profiles/>
- White wine data: <https://winefolly.com/tips/flavor-profiles-of-white-wines/>
- Variety properties data: <https://winefolly.com/grapes/>

Background Research

- 2017 Wine Market Council Report:
http://winemarketcouncil.com/wp-content/uploads/2017/10/2017_WMC_Wine_Consumer_Segmentation_Slide_Handbook2.pdf
- Illustration modified from:
<https://www.dreamstime.com/royalty-free-stock-photo-supermarket-wine-image20293395>

Taste Profile & Details

- Icons redesigned from <https://www.flaticon.com/home> with free commercial license
- <https://winefolly.com/deep-dive/identifying-flavors-in-wine/>
- <https://winefolly.com/tips/common-flower-aromas-in-wine/>
- <https://tanglewoodwine.co.uk/blogs/news/spice-wine-guide>
- <https://www.winefrog.com/definition/130/leathery>

- <https://winefolly.com/wine-pairing/herb-and-spice-pairings-with-wine/>
- <https://wineintro.com/basics/flavors/citrus.html>
- <https://winemakermag.com/article/937-stone-fruit-wines>
- <https://winefolly.com/tips/40-wine-descriptions/>

Tips

- Image adapted from: <https://winefolly.com/tips/reading-wine-labels/>
- <https://www.businessinsider.com/things-to-look-for-on-a-wine-label-according-to-an-expert-2018-8>
- <https://vincarta.com/blog/how-to-read-a-wine-label/>

Development

- Bootstrap <https://getbootstrap.com/>
- D3.js <https://d3js.org/>
- Tippy.js <https://atomiks.github.io/tippyjs/v6/creation/>
- Animate.css <https://animate.style/>
- Radar Chart <http://bl.ocks.org/Kuerzibe/338052519b1d270b9cd003e0fbfb712e>
- Google Fonts <https://fonts.google.com/>
- Font choices inspired by: <https://fontpair.co/pairing/halant-and-nunitosans>

7b. Earlier Iterations

First Draft

Desktop - 1



Desktop - 2



Goal
Motivation

wine opener
sparkling bubbles flowing

History: Where the wine comes from
wine grape vs. table grape
the most common grapes based on wine types
- white vs. rose vs. red < categorized by grapes
-> ? location relation
Interactive world heat map
»» Individual Experience : taste, flavor, aroma

Individual Experience : taste, flavor, aroma ?
Filtered by wine category
WordCloud of description shown in wine bottle shape

Main topic: Purchase/order wine

1. Meaning of the rating
2. How to interpret rating
- Price vs. Rating

Taste

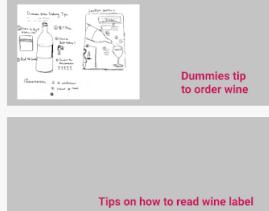
Filter



Visualization of taste
option 1: word cloud
option 2: bubbles
option 3: connective chart

Tips & Application

Wine Review Data Viz

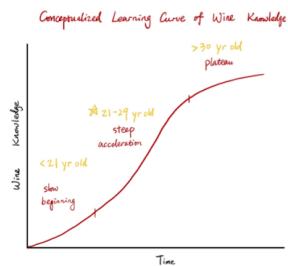


Dummies tip
to order wine

Tips on how to read wine label

Usability Testing Draft

Background



For people in their 20s, they face a steep learning curve of wines, but they are also most curious to explore and learn. We want to help them navigate the world of wines more easily, based on their preference of flavors to instantly associate. In this process, the 20s can pick a few varieties of wines that are both affordable and high-rated, and when tasting by themselves, they can know about the wines and feel what truly appeals to them.

Flavor Exploration

Choose the preferred wine type:



White Wine



Red Wine

Choose two favorite flavors:



Citrus Fruit



Stone Fruit



Tropical Fruit



Floral



Herbal

Choose two favorite flavors:



Red Fruit



Black Fruit



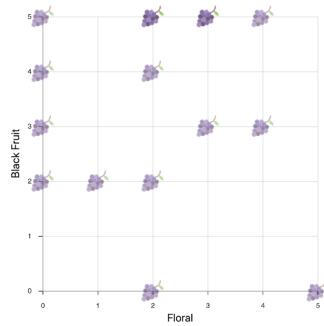
Floral



Cooking Spice

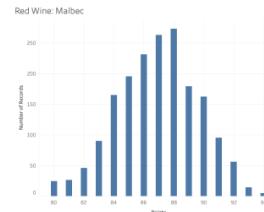


Leather



Malbec

Boldness	
Sweetness	
Acidity	
Alcohol	> 15% ABV



The Top 5 By Rating You Could Try

1. Lava Cap 2015 Reserve Malbec

California, US

Rating: 94 Price: \$25.0

Description:

This wine beautifully blends vivid fruit, enticing spice and luxuriously creamy flavors that are concentrated, layered and complex. It pulls it all off gracefully due to underlying acidity that supports a lush texture and leads to a long finish.

2. xxxxxxxxxxxxxxxxxxxxxxxxx

xxx

3. xxxxxxxxxxxxxxxxxxxxxxxxx

xxx

4. xxxxxxxxxxxxxxxxxxxxxxxxx

xxx

5. xxxxxxxxxxxxxxxxxxxxxxxxx

xxx

7c. Usability Testing Guide

Section I Background Introduction

We are evaluating an explorative wine selection assisting tool. During this usability testing, we will show you the design and evaluate the effectiveness of this tool.

Section II Demographic Information

1. What's your age?
2. What's your current occupation?/ How long have you been working full-time?
3. How often do you purchase wine? (ex. Twice a year, Monthly, weekly, etc)

Section III Wine Knowledge Pre-test

1. Describe the last time you purchase a wine? Under what situation? Where? What's your thought process on deciding what to purchase? What's your feeling?
2. Did you use any tools to help you with the selection/purchasing process?
3. On a scale of 1-7, How do you rate your level of confidence to find a wine based on your need? 1-7
4. On a scale of 1-7, How do you rate your current level of wine knowledge? 1-7

Section IV Interface/Graph Usability Tasks

1. Section I: Which age-group is the tool targeting? Based on what does the tool help identify users' preference?
2. Section II: Interface Interaction: Assume that you want to learn about white wine, you choose Citrus Fruit & Floral first but then change your mind to Stone Fruit & Floral, how would you do that?
3. Section II: Interface Interaction: Assume that you want to purchase a red wine for your' friends' birthday dinner. You know she likes floral & fruity wines, how would you find a wine for her using this platform? (Provide hint if stuck)
4. Section II&III: Find a flavor combination (scatter point) with various varieties, how would detailed information shown in Recommendation help you decide which variety you would choose
5. Section III: What's the price of the top-recommended wine?

Section V Wine Knowledge Post-test

Let's refer back to the scenario you described when you last purchased wine, imagine you are facing a similar situation now.

1. How likely are you to use the tool presented to you to help with your experience? 1-7. What information, features will make you more likely to use the tool?
2. On a scale of 1-7, How do you rate your level of confidence to find a wine based on your need? 1-7
3. On a scale of 1-7, How do you rate your current level of wine knowledge? 1-7



Section VI Debrief

1. Do you have any questions?
2. Are there any features, descriptions you find particularly confusing about the tool presented?
3. Is there any features or information that you really need during the wine selection process that wasn't shown in the tool?
4. Any general comments or suggestions?