



W200 - PYTHON PROJECT #1

WINE POCKET

Reflection, Final System Design and User Guide



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1. Project Summary

The project objective is to build an application called “Wine Pocket”. This application allows user to search for a variety of wines and check their review and other characteristics, at the same time user can establish his / her own lists of wines, including:

- List of wines that he / she wants to taste in the future: Want-to-taste
- List of wines that he / she has tasted in the past: Have-tasted

Specifically, the original proposal proposed the following list of features. Due to time limit, not all features have been implemented in the final product. The table belows compares the features that have actually been completed with the original proposal.

Proposed Feature	Completed Feature
1. Wine library	A wine library is constructed based on the public dataset downloaded from https://www.kaggle.com/zynicide/wine-reviews , which contains 130,000 wine reviews with variety, location, winery, price and description.
2. User Management	For User Management, the following are completed: <ul style="list-style-type: none">• Username: username must be unique• Password: strong password policy is not set up.• Email: unique email address registered on Wine Pocket; email format must be valid• NickName: not implemented
3. Wine - Search, Tag and Review	<ul style="list-style-type: none">• <u>Search</u>: allow user to search the review of each wine by: Title of a wine, Country, Designation, Province, Point range, Price range• <u>View</u>: allow user to view a list of Top 20 wines with highest points• <u>Tag</u>: allow user to tag a wine as:<ul style="list-style-type: none">○ “Want-to-Taste”○ Or, “Have-Tasted”:• <u>Review</u>: if “have-tasted”, allow user to further take the following

Proposed Feature	Completed Feature
	actions: <ul style="list-style-type: none"> ○ Provide his / her own score (on a scale from 0 to 100) to the wine ○ Provide description of his / her own tasting of the wine ○ Add “Recommended” tag if the user would like to recommend the wine
4. Wine Friend Circle (Desired)	This feature is not implemented due to time constraint.

2. Lessons Learned from Project

This project assignment is beneficial for me to learn the basic object-oriented principles. I have summarized the lessons that I have learned throughout the project as follows:

- 1) **A good system is built on a good design.** Before any implementation, I’ve learned that sitting back and taking a moment to think through the system design is crucial for a successful implementation. In some cases, I made mistakes by rushing in and starting to code, which later lead to my realization that they were not well designed and need to be reorganized.
- 2) **Coding is not the most challenge part, design is.** To me, the biggest hurdle during the project implementation is not the actual hands-on-to-code part, but rather, it is the beginning. I need to think as a mini “Solution Architect” to design the classes, their methods and how they should interact with each other.
- 3) **A good way to get over the design challenge is to draw out the process flow.** At least to me personally, a good solution to overcome the hurdle is to map out the functions and the expected process flows (similar to the one in Section 4). By visualizing the interactions, how to organize the classes and methods come natural and clear to me.
- 4) **Testing, testing, and testing.** Testing is an essential part of any implementation. During development period, I should always conduct unit testing. Every time a function is completed, test the function right away. With the memory still fresh, it would be much easier to debug if any error is encountered. After completing one process flow, test the flow right away. At the end of the development, conduct process testing for all different scenarios to ensure the system is working properly.
- 5) **Documentation is a good habit.** For a mini project which is all completed by one person, this benefit may not seem that obvious. But for a larger project, I strongly sense the importance and necessity to document clearly at least on each function.

3. Final System Design

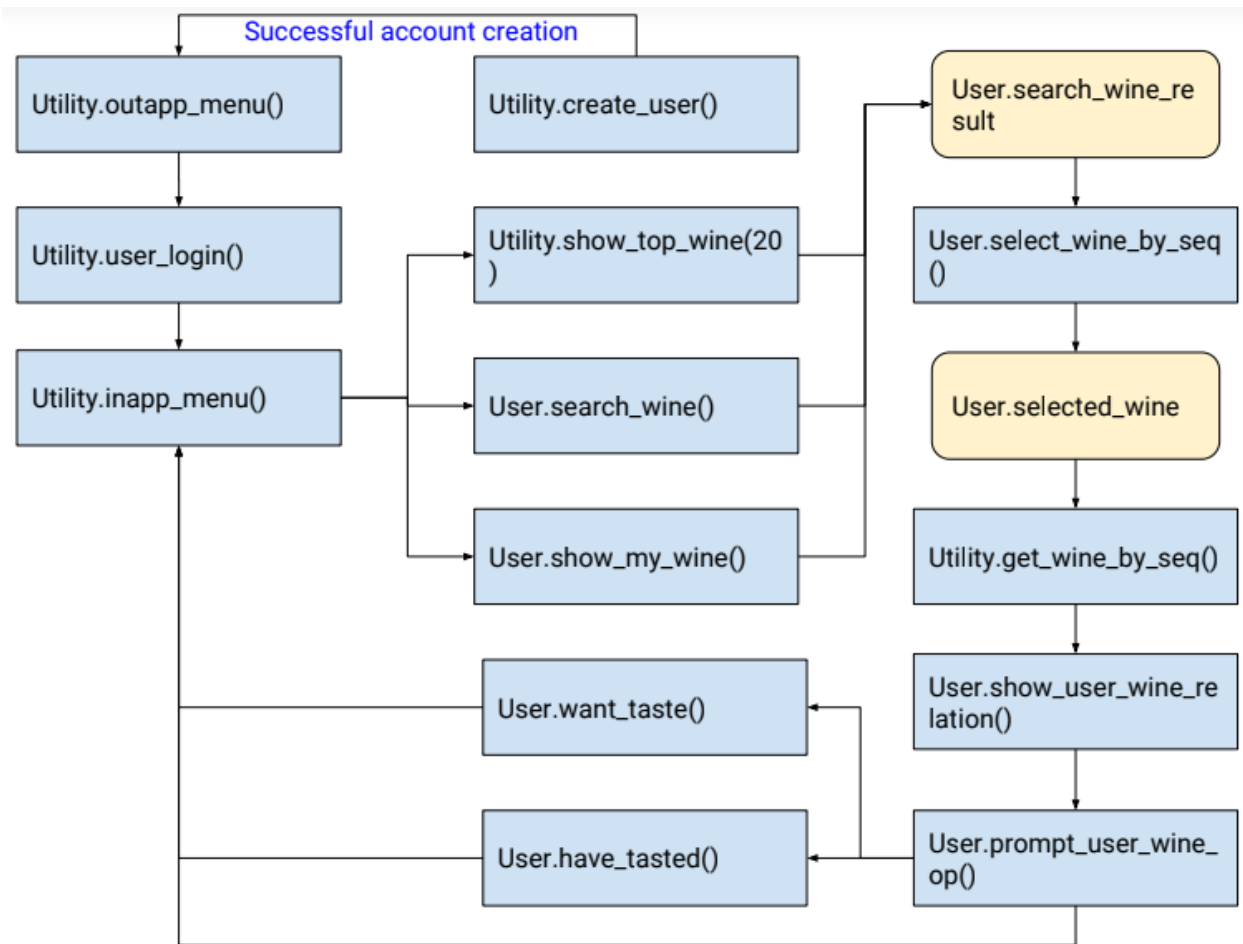
As in the final script, the system design is documented as follows:

Class	Method	Brief Functional Description
Utility	Initializer	Construct the following: <ul style="list-style-type: none">- A list of User() objects based on existing Users.csv- A list of Wine() objects based on existing winemag-data-130k-v2.csv- A list of user-and-wine interactions based on existing user_wine.csv- Assign the following attributes: users, wines, user_wine
	check_username()	Verify if the username created by user already exists in the system: <ul style="list-style-type: none">- If True: the username cannot be created, need to retry- If False: the user name can be created
	check_email()	Verify if the email created by user already exists in the system: <ul style="list-style-type: none">- If True: the email cannot be registered, need to retry- If False: the email can be registered Also check if the email address is in valid format of email address
	create_user()	Create a user account on Wine Pocket: <ul style="list-style-type: none">- Email will be checked- Username will be checked- Password will be prompted for reentry for confirmation After successful creation, <ul style="list-style-type: none">- The users attribute will be updated to append a new account;- The Users.csv will be updated to append a new account- User will directed to login page to log into Wine Pocket.
	user_login()	Verify if a login username and password are valid: <ul style="list-style-type: none">- If True: user will be directed to Wine Pocket main menu.- If False: user will be rejected for login and can retry.
	user_logout()	If user is logged into Wine Pocket, he / she can log out. After logout, he/she will see the login page.
	inapp_menu()	After user login, user will see the home page and take further actions to navigate through Wine Pocket.
	outapp_menu()	After user logout, user will see the login page. He/she can either log in, or create account, or quit the application.
	get_wine_by_seq()	Based on the user input sequence no., the function will return

Class	Method	Brief Functional Description
		the corresponding wine information.
	show_top_wine()	Based on the input parameter - num_wine, the function will launch a list of top num_wine wines with highest scores
User	Initializer	Assign attributes to user: username, password, email
	check_num_input()	A generic function to validate the input provided by user is a valid number.
	check_num_range()	A generic function to validate the input provided by user is a valid number within a valid range.
	search_wine()	Search a wine based on searching criteria, and return a list of results
	show_my_wine()	Return a list of wines that the user has interacted with before (i.e. want-to-taste, or have-tasted)
	select_wine_by_seq()	Prompt user to select a wine by its sequence number, and return the following <ul style="list-style-type: none"> - wine basic information - user's tag and review on the wine to user, if any - prompt user to take further action on the wine.
	prompt_user_wine_op()	A function to prompt user to take operations on the selected wine: <ul style="list-style-type: none"> - tag as want-to-taste or have-tasted - Or, return to home page
	show_user_wine_relation()	A function to show user's interaction with a wine: <ul style="list-style-type: none"> - Want-to-taste / have-tasted - If have-tasted, the score, review and recommend would have values - Or display "no interaction" in case no user and wine relation is found
	want_taste()	Tag a wine as "Want to Taste". <ul style="list-style-type: none"> - Validation is in place to ensure user cannot tag a wine as "want-to-taste" if he already does so or tags as "have-tasted" already. - Update user_wine attribute to append a new line - Update user_wine.csv to append a new line
	have_tasted()	Tag a wine as "Have Tasted". Furthermore, user can perform the following actions:

Class	Method	Brief Functional Description
		<ul style="list-style-type: none"> - Allow user to give a score from the range of 0 to 100 to a wine - Allow user to enter a brief review on a wine - Allow user to tag a wine as "Recommended" - If user already tags the wine as "have-taste", he cannot do again. - If user tags as "want-to-taste" before, allow user to change the tag to "have-tasted" and provide score, review and recommend: <ul style="list-style-type: none"> - Update wer_wine attribute to update the element; - Update user_wine.csv to update the corresponding row. - If user does not tag "want-to-taste" or "have-tasted" before, allow user to proceed: <ul style="list-style-type: none"> - Update user_wine attribute to append a new line - Update user_wine.csv to append a new line
Wine	Initializer	Construct each wine record as a Wine() object, and assign the following attributes to them: seq, country, description, designation, points, price, province, title, variety, winery
	show_avg_score()	Display the average score of a wine.

4. Major Process Flow Diagram



Legend

Function

Attribute

5. Brief User Guide

1. Launch the application by using “python WinePocket.py” on terminal

```
Chloes-MBP:project_1 cati$ python WinePocket.py
=====
***** Wine Pocket: A pocket guide for Wine Enthusiasts*****
*****
*****
1. Log in Wine Pocket
2. Create user account
3. Quit application
=====
Please select one from the menu options: █
```

2. Select 2 to create new account

```
Please select one from the menu options: 2
Please enter your email address: newyorker@test.com
Please create your username for Wine Pocket: newyorker
Please create your password: 12345678
Please confirm your password: 12345678
User account successfully created! You may now log into Wine Pocket.
=====
```

3. After account is successfully created, user will be brought back to login screen. Select 1 to log in.

```
Please select one from the menu options: 1
Please enter your Wine Pocket username: newyorker
Please enter your password: 12345678
Log in successfully!
```

4. At home page, select 1, 2, 3 or 4 to take actions.

```
***** Wine Pocket Home Page *****
=====
1. View Top 20 wines
2. Search a wine
3. My wine
4. Log out
=====
Please select from the menu options: █
```

5. If select 1, system will present the top 20 wines with the highest scores to user.

```
Top 20 wines are:
345 | Title: Chambers Rosewood Vineyards NV Rare Muscat (Rutherglen) | Variety: Muscat | Price: 350.0 | Points: 100.0
7335 | Title: Avignonesi 1995 Occhio di Pernice (Vin Santo di Montepulciano) | Variety: Prugnolo Gentile | Price: 210.0 | Points: 100.0
36528 | Title: Krug 2002 Brut (Champagne) | Variety: Champagne Blend | Price: 259.0 | Points: 100.0
39286 | Title: Tenuta dell'Ornellaia 2007 Masseto Merlot (Toscana) | Variety: Merlot | Price: 460.0 | Points: 100.0
42197 | Title: Casa Ferreirinha 2008 Barca-Velha Red (Douro) | Variety: Portuguese Red | Price: 450.0 | Points: 100.0
45781 | Title: Biondi Santi 2010 Riserva (Brunello di Montalcino) | Variety: Sangiovese | Price: 550.0 | Points: 100.0
45798 | Title: Cardinale 2006 Cabernet Sauvignon (Napa Valley) | Variety: Cabernet Sauvignon | Price: 200.0 | Points: 100.0
58352 | Title: Château Léoville Barton 2010 Saint-Julien | Variety: Bordeaux-style Red Blend | Price: 150.0 | Points: 100.0
89728 | Title: Louis Roederer 2008 Cristal Vintage Brut (Champagne) | Variety: Champagne Blend | Price: 250.0 | Points: 100.0
89729 | Title: Salon 2006 Le Mesnil Blanc de Blancs Brut Chardonnay (Champagne) | Variety: Chardonnay | Price: 617.0 | Points: 100.0
111753 | Title: Château Lafite Rothschild 2010 Pauillac | Variety: Bordeaux-style Red Blend | Price: 1500.0 | Points: 100.0
111754 | Title: Casanova di Neri 2007 Cerretalto (Brunello di Montalcino) | Variety: Sangiovese Grosso | Price: 270.0 | Points: 100.0
111755 | Title: Château Cheval Blanc 2010 Saint-Émilion | Variety: Bordeaux-style Red Blend | Price: 1500.0 | Points: 100.0
111756 | Title: Château Léoville Las Cases 2010 Saint-Julien | Variety: Bordeaux-style Red Blend | Price: 359.0 | Points: 100.0
113929 | Title: Charles Smith 2006 Royal City Syrah (Columbia Valley (WA)) | Variety: Syrah | Price: 80.0 | Points: 100.0
114972 | Title: Quinta do Noval 2011 Nacional Vintage (Port) | Variety: Port | Price: 650.0 | Points: 100.0
118058 | Title: Verité 2007 La Muse Red (Sonoma County) | Variety: Bordeaux-style Red Blend | Price: 450.0 | Points: 100.0
122935 | Title: Château Haut-Brion 2014 Pessac-Léognan | Variety: Bordeaux-style White Blend | Price: 848.0 | Points: 100.0
123545 | Title: Cayuse 2008 Bionic Frog Syrah (Walla Walla Valley (WA)) | Variety: Syrah | Price: 80.0 | Points: 100.0
1556 | Title: Quilceda Creek 2008 Cabernet Sauvignon (Columbia Valley (WA)) | Variety: Cabernet Sauvignon | Price: 125.0 | Points: 99.0
Please enter wine sequence number you would like to operate on: █
```


6. User can enter the sequence number of any above wine, for example, 113929. User can further select 1, 2, or 3.

```
Please enter wine sequence number you would like to operate on: 113929
113929 | Title: Charles Smith 2006 Royal City Syrah (Columbia Valley (WA)) | Variety: Syrah | Price: 80.0 | Points: 100.0
=====
You haven't interacted with Charles Smith 2006 Royal City Syrah (Columbia Valley (WA)) yet.
=====
You may take the following actions:
1. Tag the wine as Want-to-taste | 2. Tag the wine as Have-tasted and add review | 3. Return to home page
Please select 1, 2, or 3: █
```

7. Go back to home screen, if user select 2 to search for a wine. He/she will be presented with the following search filters and conduct search. Search results will be presented.

```
Search by Wine Title (press ENTER to skip): chambers rosewood
Search by Country (press ENTER to skip):
Search by Variety (press ENTER to skip):
Search by price range - maximum price (press ENTER to skip): 600
Search by price range - minimum price (press ENTER to skip): 10
Search by score range - maximum score (press ENTER to skip): 100
Search by score range - minimum score (press ENTER to skip): 70

A total of 16 results found:
=====
345 | Title: Chambers Rosewood Vineyards NV Rare Muscat (Rutherglen) | Variety: Muscat | Price: 350.0 | Points: 100.0
346 | Title: Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 350.0 | Points: 98.0
348 | Title: Chambers Rosewood Vineyards NV Grand Muscat (Rutherglen) | Variety: Muscat | Price: 100.0 | Points: 97.0
13660 | Title: Chambers Rosewood Vineyards NV Muscadelle Tokay (Rutherglen) | Variety: Tokay | Price: 15.0 | Points: 86.0
15547 | Title: Chambers Rosewood Vineyards NV Grand Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 140.0 | Points: 94.0
18961 | Title: Chambers Rosewood Vineyards NV Muscat (Rutherglen) | Variety: Muscat | Price: 15.0 | Points: 89.0
39086 | Title: Chambers Rosewood Vineyards NV Grand Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 140.0 | Points: 94.0
67101 | Title: Chambers Rosewood Vineyards NV Rare Muscat (Rutherglen) | Variety: Muscat | Price: 300.0 | Points: 95.0
72721 | Title: Chambers Rosewood Vineyards NV Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 16.0 | Points: 90.0
72722 | Title: Chambers Rosewood Vineyards NV Muscat (Rutherglen) | Variety: Muscat | Price: 16.0 | Points: 90.0
81986 | Title: Chambers Rosewood Vineyards NV Grand Muscat (Rutherglen) | Variety: Muscat | Price: 100.0 | Points: 92.0
94752 | Title: Chambers Rosewood Vineyards NV Grand Muscat (Rutherglen) | Variety: Muscat | Price: 100.0 | Points: 92.0
109427 | Title: Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 300.0 | Points: 99.0
114852 | Title: Chambers Rosewood Vineyards NV Grand Muscadelle Tokay (Rutherglen) | Variety: Tokay | Price: 140.0 | Points: 91.0
121462 | Title: Chambers Rosewood Vineyards NV Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 16.0 | Points: 89.0
122340 | Title: Chambers Rosewood Vineyards NV Muscat (Rutherglen) | Variety: Muscat | Price: 16.0 | Points: 91.0
Please enter wine sequence number you would like to operate on: █
```

8. Similar as above, user inputs a wine sequence number to take further action, for example 346. System will present the basic information of the wine, and the user's previous interaction with the wine. User can take action 1, 2 or 3.

```
346 | Title: Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 350.0 | Points: 98.0
=====
You haven't interacted with Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) yet.
=====
You may take the following actions:
1. Tag the wine as Want-to-taste | 2. Tag the wine as Have-tasted and add review | 3. Return to home page
Please select 1, 2, or 3: 2
Please provide a score for the wine: 97.5
Please provide short review for the wine: (press ENTER to skip)very good wine for family gathering
Do you want to recommend this wine? Press 1 for Yes, 0 for No: 1
Successfully add review to Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen)!
Press 1 to return to home page: 1
```

9. After going back to home screen, user can click on 3 to view "My Wine".

```
***** Wine Pocket Home Page *****
=====
1. View Top 20 wines
2. Search a wine
3. My wine
4. Log out
=====
Please select from the menu options: 3
113929 | Title: Charles Smith 2006 Royal City Syrah (Columbia Valley (WA)) | Variety: Syrah | Price: 80.0 | Points: 100.0
346 | Title: Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) | Variety: Muscadelle | Price: 350.0 | Points: 98.0
Please enter wine sequence number you would like to operate on: █
```

10. The list will show two wines that the user has interacted with. Select one from the list. User can see his/her previous review of the wine here.

```
346 | Title: Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen) | Country: Australia | Variety: Muscadelle | Price: 350.0 | Points: 98.0
=====
Here is your review of Chambers Rosewood Vineyards NV Rare Muscadelle (Rutherglen)
=====
You tag as Have-tasted
Score: 97.5
Brief Review: very good wine for family gathering
Mark as Recommend: Yes
=====
You may take the following actions:
1. Tag the wine as Want-to-taste | 2. Tag the wine as Have-tasted and add review | 3. Return to home page
Please select 1, 2, or 3: █
```

11. Select 3 to go back to home screen. Select 4 to log out of Wine Pocket. Select 3 to quit the application.

```
***** Wine Pocket Home Page *****

=====
1. View Top 20 wines
2. Search a wine
3. My wine
4. Log out
=====
Please select from the menu options: 4
Log out successfully!
=====

***** Wine Pocket: A pocket guide for Wine Enthusiasts*****

*****
*****
1. Log in Wine Pocket
2. Create user account
3. Quit application
=====
Please select one from the menu options: █
```