



**Knight Foundation
School of Computing
and Information Sciences**

CIS 4951 Capstone II - Fall 2025

Green Vault

User Manual

Members:

**Giorgio Abboud, B.S, Malik Dagher, B.S
Audrey Gamero, B.S, Daniella Lacotera, B.S
Rodrigo Munoz Salas, B.S**



CIS 4951 Capstone II

Giorgio Abboud

Malik Dagher

Audrey Gamero

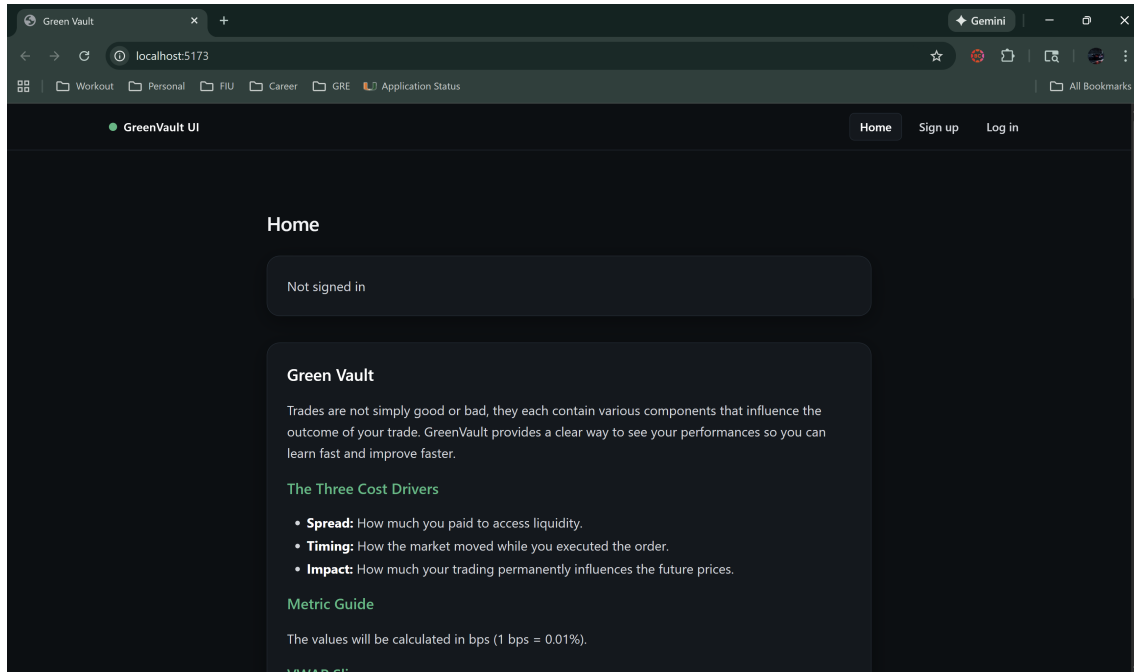
Daniella Lacotera

Rodrigo Munoz Salas

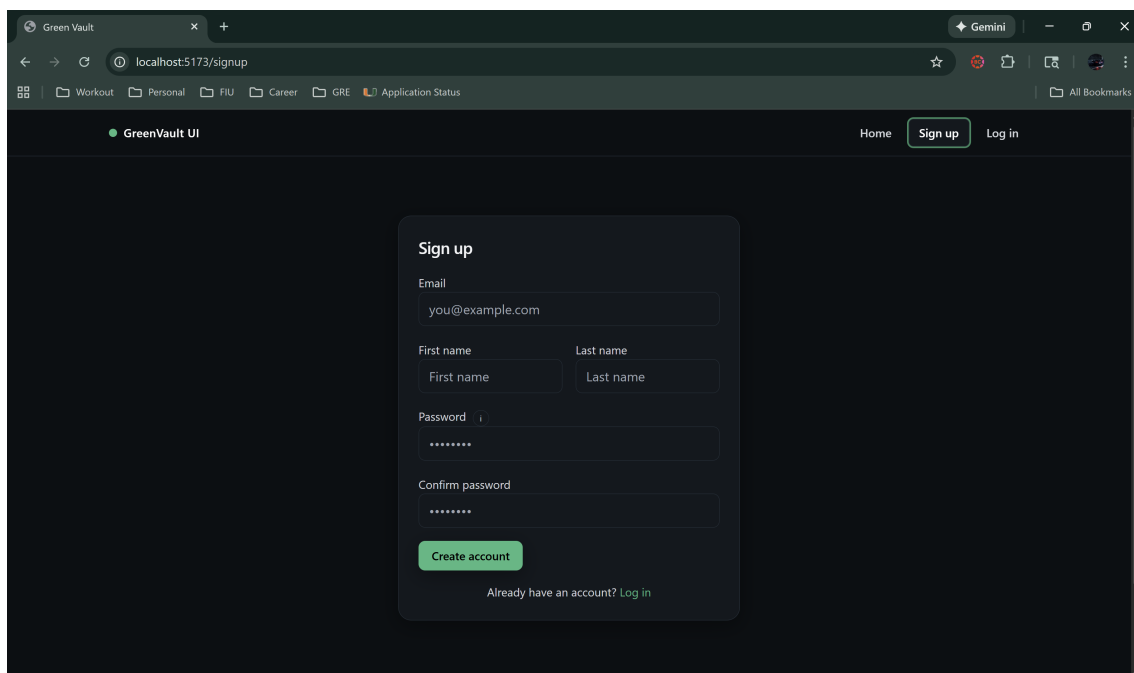
December 1, 2025

The walkthrough begins at the homepage as can be seen below. We will demonstrate through screenshots how to use our web application, our various features, where to find your stored data, and how to resolve error messages.

1. Begin at the homepage which initially sets your signed in status to “not signed in”. You may take your time on this page familiarizing yourself with our goal, what is being calculated, and terminology definitions.



2. Following is the signup page. Here you will be prompted to enter your information like email, first and last name, password, and a password confirmation. You will be provided with an info circle next to the password to disclose what types of characters your password must include. You are also given the option to press the login link below the “create account” button if you already have an account.



A screenshot of a web browser showing the 'Sign up' form on the 'GreenVault UI' application. The browser's address bar shows 'localhost:5173/signup'. The form is centered on a dark background and contains the following fields: 'Email' with the value 'you@example.com', 'First name' and 'Last name' both with the value 'First name', 'Password' with masked characters '*****', and 'Confirm passw' with masked characters '*****'. To the right of the password field, a list of requirements is shown: 'At least 12 characters', '1 uppercase letter', '1 lowercase letter', '1 number', and '1 symbol'. A green 'Create account' button is at the bottom of the form, and a link 'Log in' is below it. The text 'Already have an account? Log in' is at the bottom of the form.

3. Entering invalid details will raise an error in the form of red boxes, and a text below explaining why the format provided was incorrect. Please take the time to fix these fields to successfully create your account.

A screenshot of the same 'Sign up' form, but with invalid input and error messages. The 'Email' field contains 'invalid' and has a red border with the text 'invalid format' below it. The 'First name' field contains '0' and has a red border with the text 'invalid characters' below it. The 'Last name' field contains '1' and has a red border with the text 'invalid characters' below it. The 'Password' field contains a single dot '.' and has a red border with the text 'too short (min 12 chars)' below it. The 'Confirm password' field is empty. A green 'Create account' button is at the bottom of the form. Below the button, a red error message box says: 'The information you entered doesn't meet the requirements. Please fix the highlighted fields.' The text 'Already have an account? Log in' is at the bottom of the form.

The screenshot shows a web browser window with the URL `localhost:5173/signup`. The page is titled "GreenVault UI" and has navigation links for "Home", "Sign up", and "Log in". The "Sign up" form contains the following fields and messages:

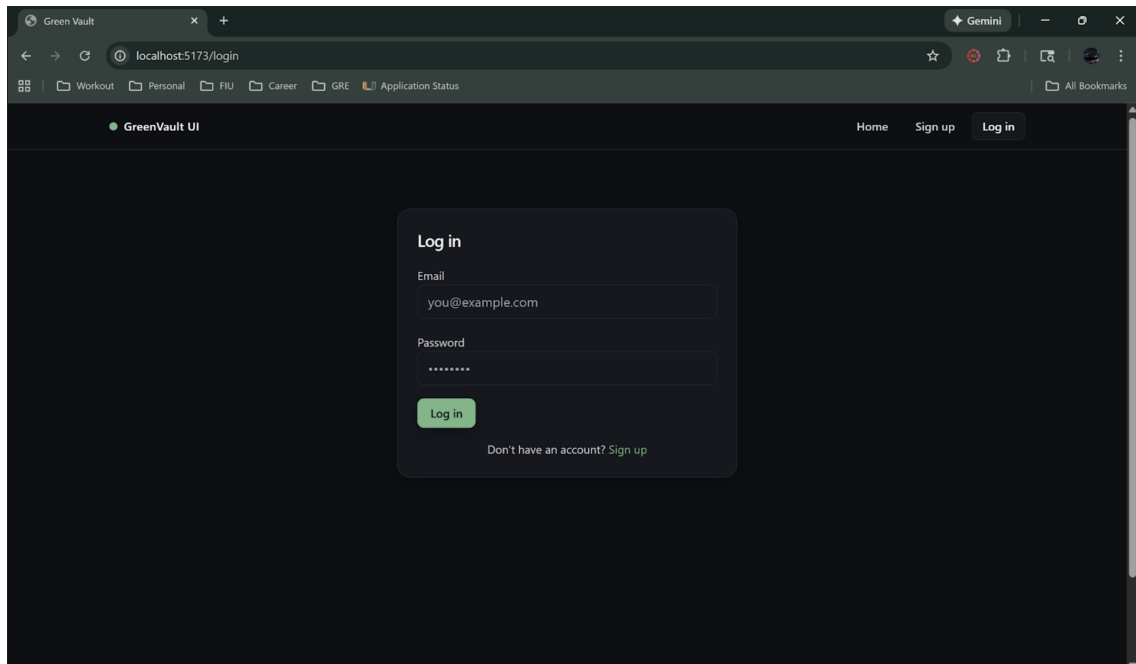
- Email:** A text input field containing the text "invalid".
- First name:** A text input field containing the text "0".
- Last name:** A text input field containing the text "1".
- Password:** A password input field with a red border, containing a single asterisk.
- Confirm password:** A password input field with a red border, containing a single asterisk.
- Feedback:** A red message below the confirm password field states "Passwords do not match".
- Buttons:** A green "Create account" button is visible.
- Footer:** A link "Already have an account? Log in" is present.
- Error Message:** A red box at the bottom of the form contains the text "Please fix the highlighted fields."

4. Once you have provided valid inputs, you will receive a message confirming that your account is now successfully created. For this dummy account, I have chosen the password "Password123!@", which fulfills all password requirements. Please ensure to select a more secure password when you create an account.

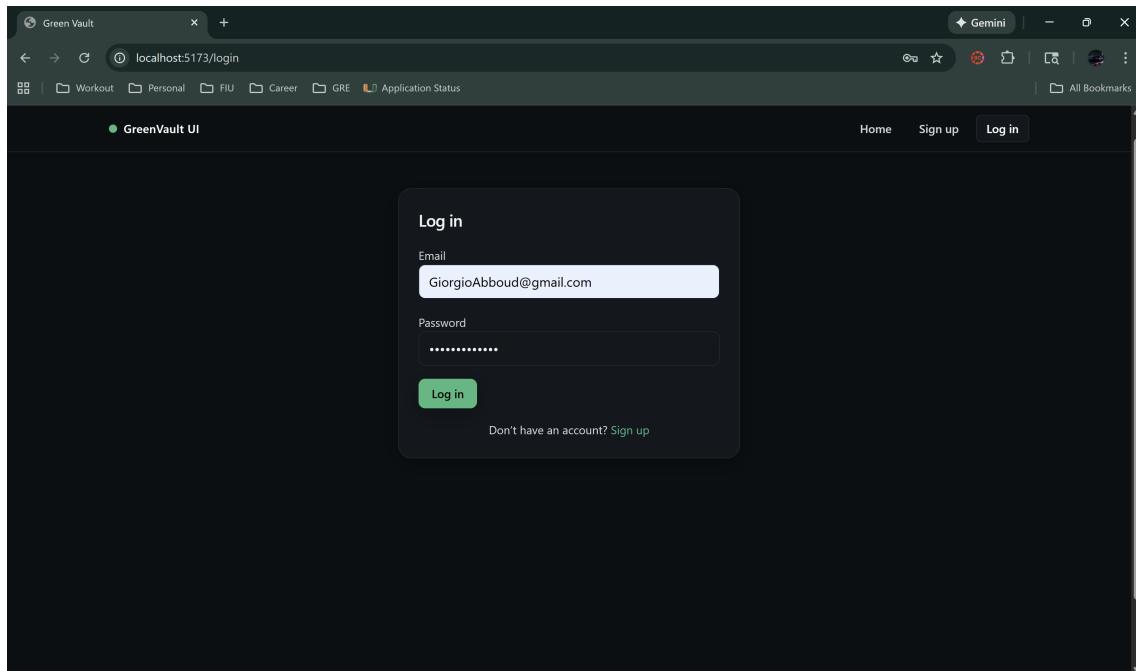
The screenshot shows the same web browser window, but the form is now filled with valid data and a success message is displayed:

- Email:** A text input field containing "GiorgioAbboud@gmail.com".
- First name:** A text input field containing "Giorgio".
- Last name:** A text input field containing "Abboud".
- Password:** A password input field with a red border, containing "*****".
- Confirm password:** A password input field with a red border, containing "*****".
- Buttons:** A green "Create account" button is visible.
- Footer:** A link "Already have an account? Log in" is present.
- Success Message:** A green box at the bottom of the form contains the text "Your profile was successfully created!" with a green checkmark icon.

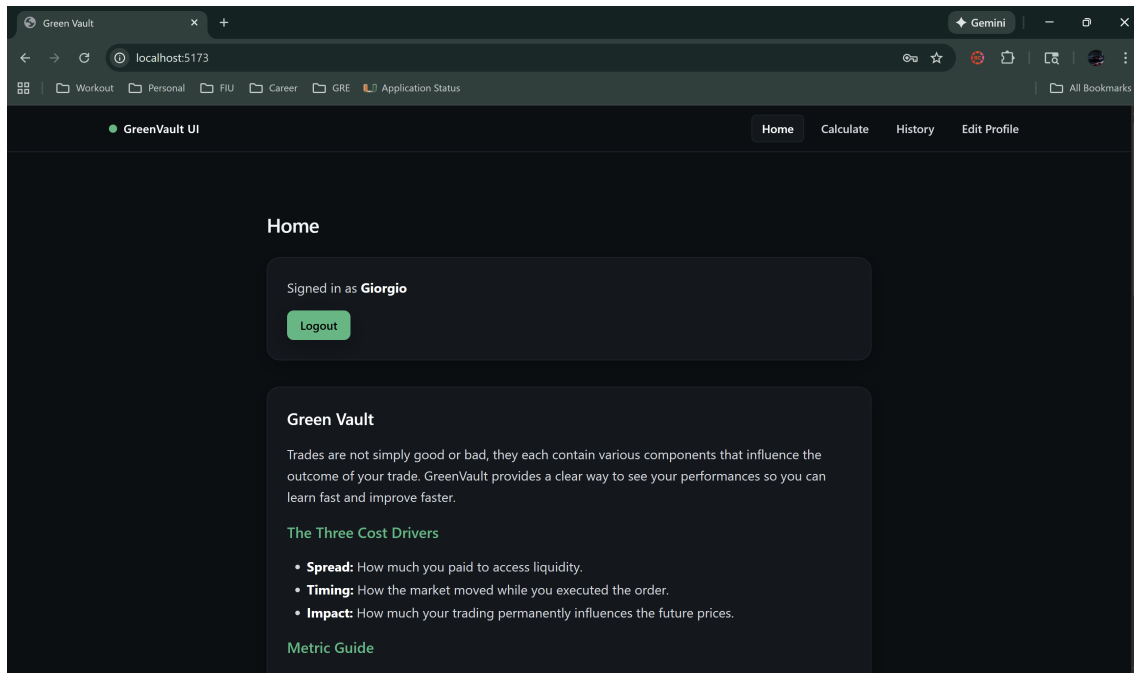
5. Now we may proceed to the login page where we are urged to enter our chosen email and password.



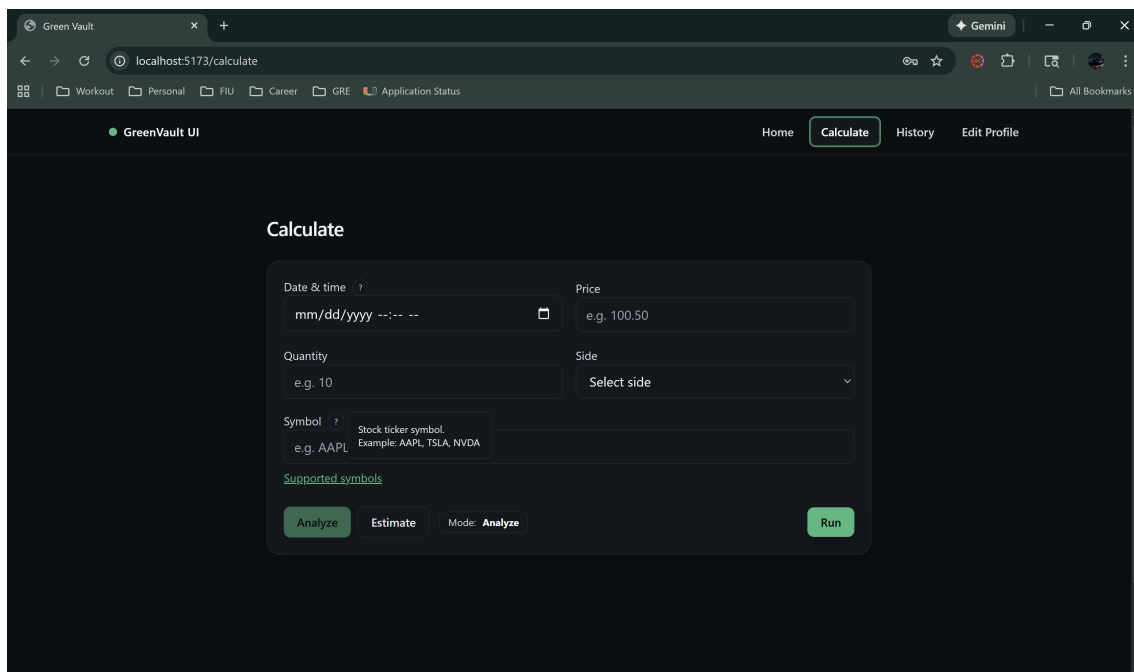
6. After entering your account details, press the login button and you will be redirected to the homepage. You also have the option to be redirected to the sign up page if you do not have an account created.

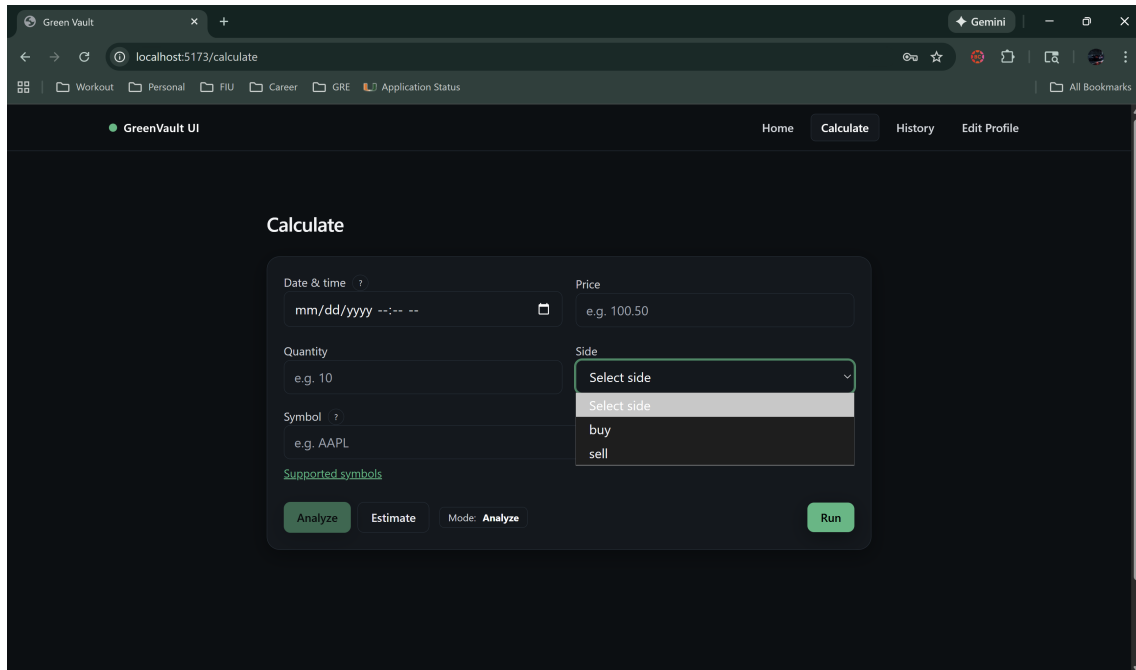
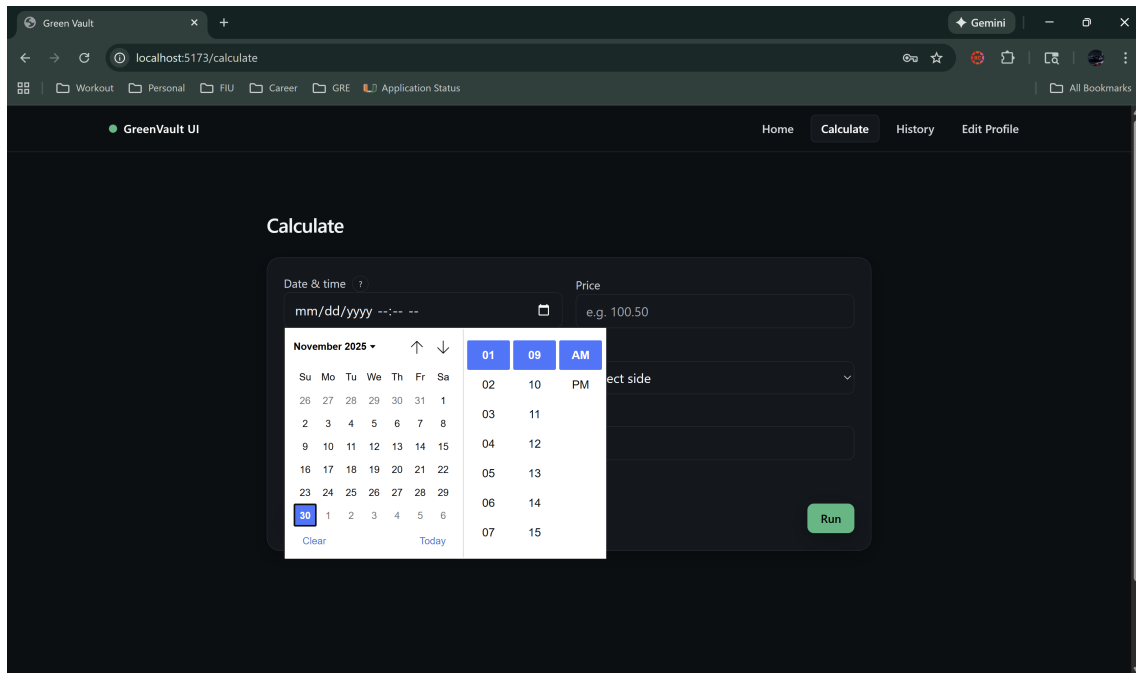


7. Now the homepage will change and show who is the currently logged in user. Now you can proceed to the main component of our web application by pressing the “Calculate” button on the top right corner.



8. Here is the calculate page, where you possess the tools to analyze your past trades, or estimate how well a trade now would do. You are prompted to enter a datetime, price, quantity, side (buy or sell), and a symbol. You are provided with examples to know in which format to enter your values. In this example, we are set to the analyze mode.





9. Pressing the “support symbols” link will send you to a NASDAQ page where you can search for valid symbols.

Stock Screener

Nov 30, 2025 - Market: Closed

Exchange

- ☐ NASDAQ
- ☐ Global Select
- ☐ Global Market
- ☐ Capital Market
- ☐ ADR
- ☐ NYSE
- ☐ AMEX

Market Cap

- ☐ Mega (>\$200B)
- ☐ Large (\$10B-\$200B)

Filtered by:
No filter applied

[Download CSV](#)

Symbol	Name	Last Sale	Net Change	% Change	Market Cap
NVDA	NVIDIA Corporation Common Stock	\$177.00	-3.26	-1.808%	4,301,100,000,000
AAPL	Apple Inc. Common Stock	\$278.85	1.30	0.468%	4,120,386,034,050
GOOGL	Alphabet Inc. Class A Common Stock	\$320.18	0.23	0.072%	3,863,612,060,000
GOOG	Alphabet Inc. Class C Capital Stock	\$320.12	-0.16	-0.05%	3,862,888,040,000
MSFT	Microsoft Corporation Common Stock	\$492.01	6.51	1.341%	3,656,804,130,037

Symbol Search

Search for a Symbol

[Screener](#)

[Cookies Settings](#) [Accept All Cookies](#)

10. Here we can see that I have entered valid inputs for each field and pressed the “Run” button to calculate the six metrics you saw in the homepage, and to return the result of your performance. There will also include an explanation, telling how each aspect of your trade performed and how you can improve.

GreenVault UI

Home [Calculate](#) [History](#) [Edit Profile](#)

Calculate

Date & time [?] 11/13/2025 03:10 PM

Price 256.7

Quantity 15

Side buy

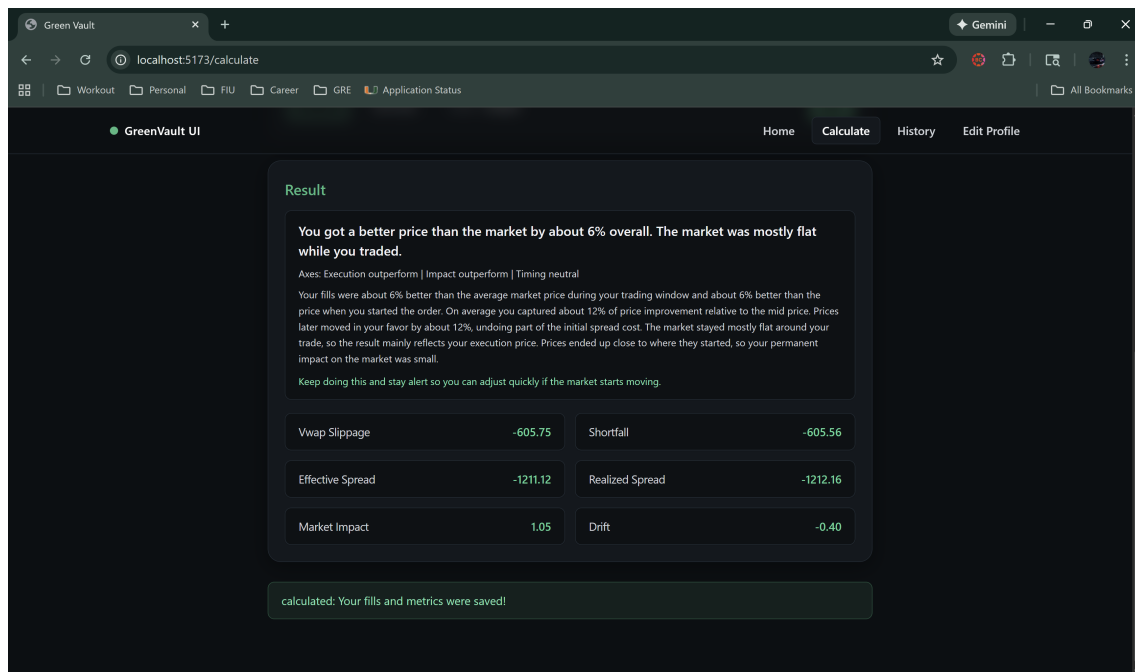
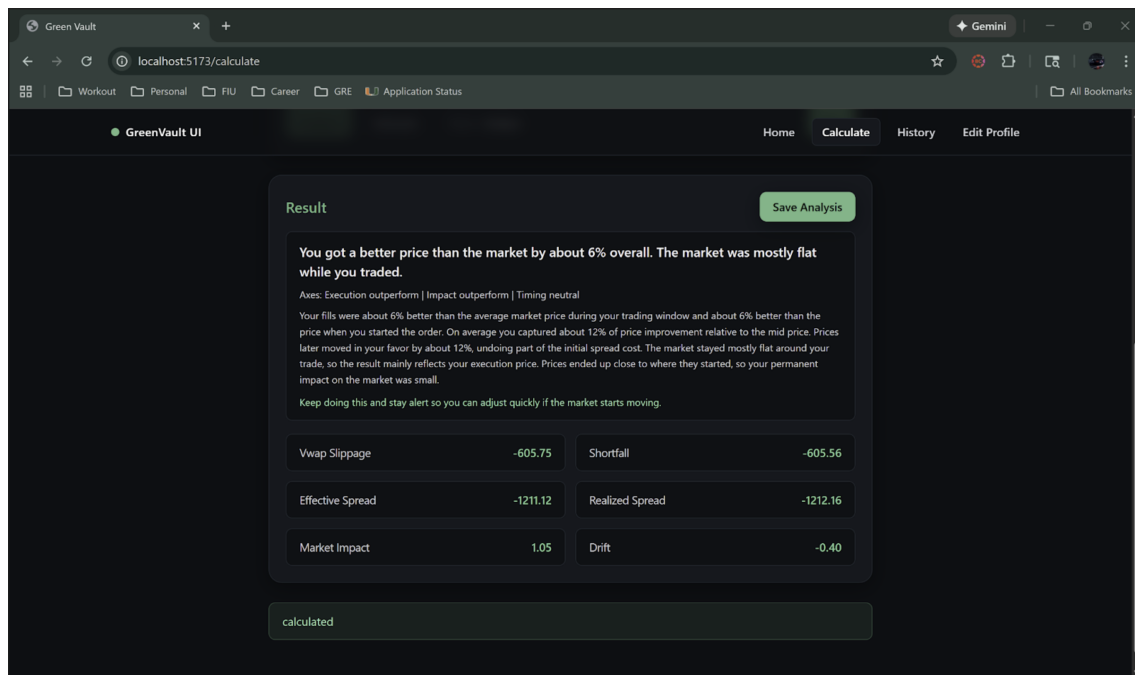
Symbol [?] AAPL

[Supported symbols](#)

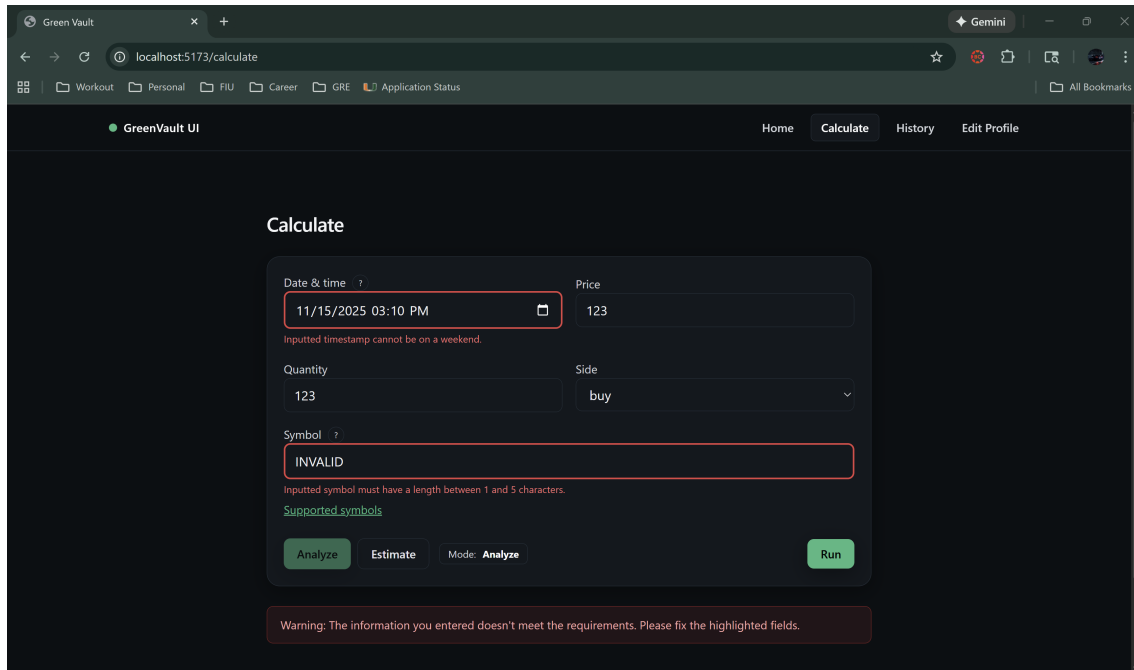
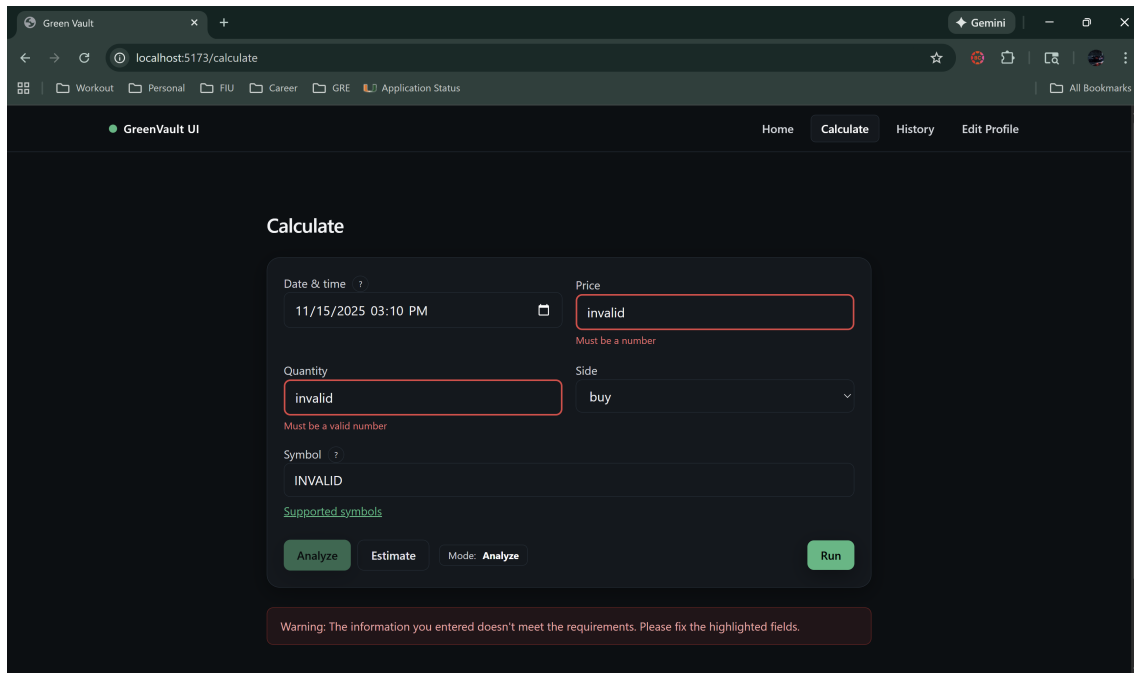
[Analyze](#) [Estimate](#) Mode: [Analyze](#) [Run](#)

Result [Save Analysis](#)

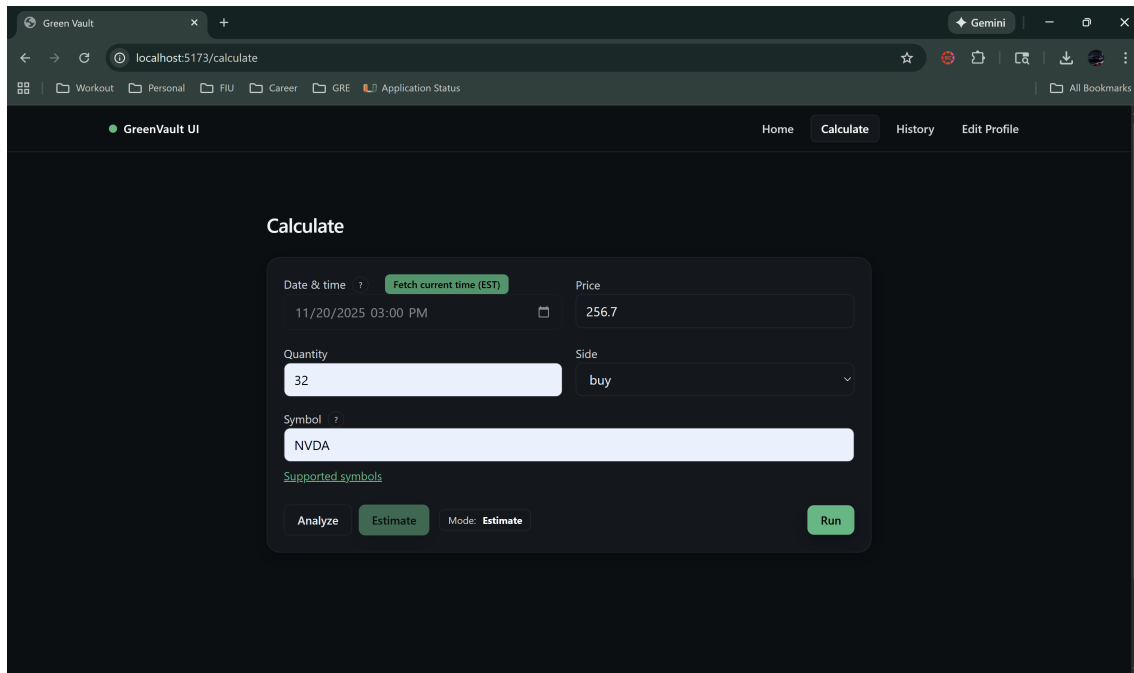
You got a better price than the market by about 6% overall. The market was mostly flat while you traded.



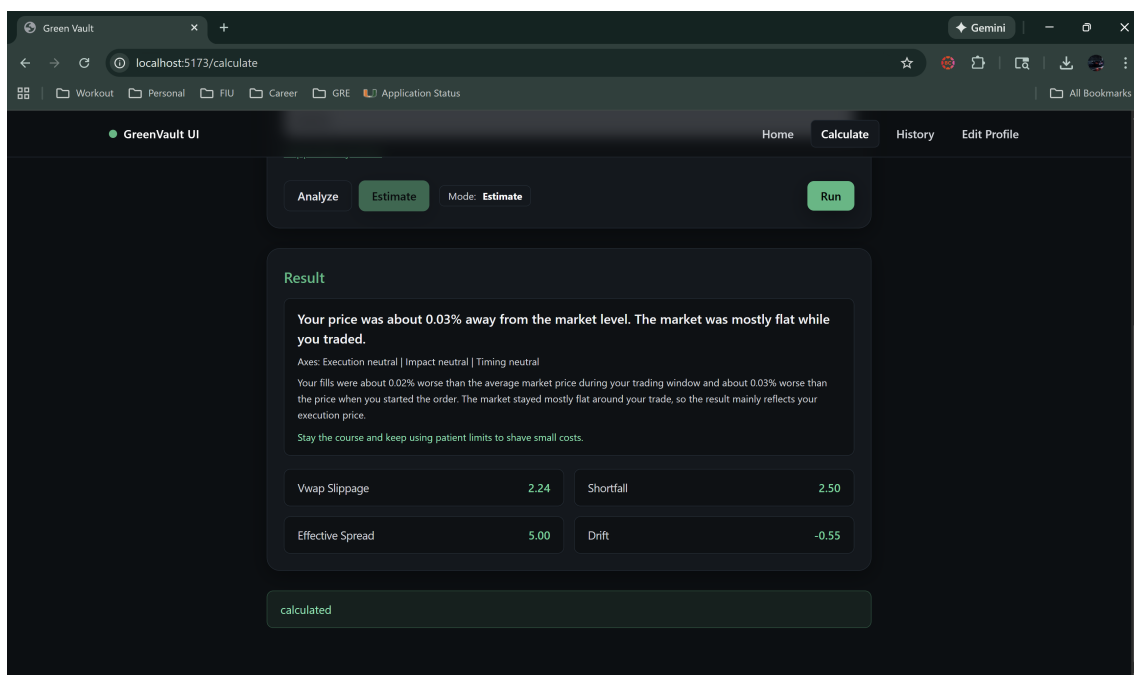
- Once again, invalid inputs will return errors and you will have to edit your inputs in the appropriate fields.



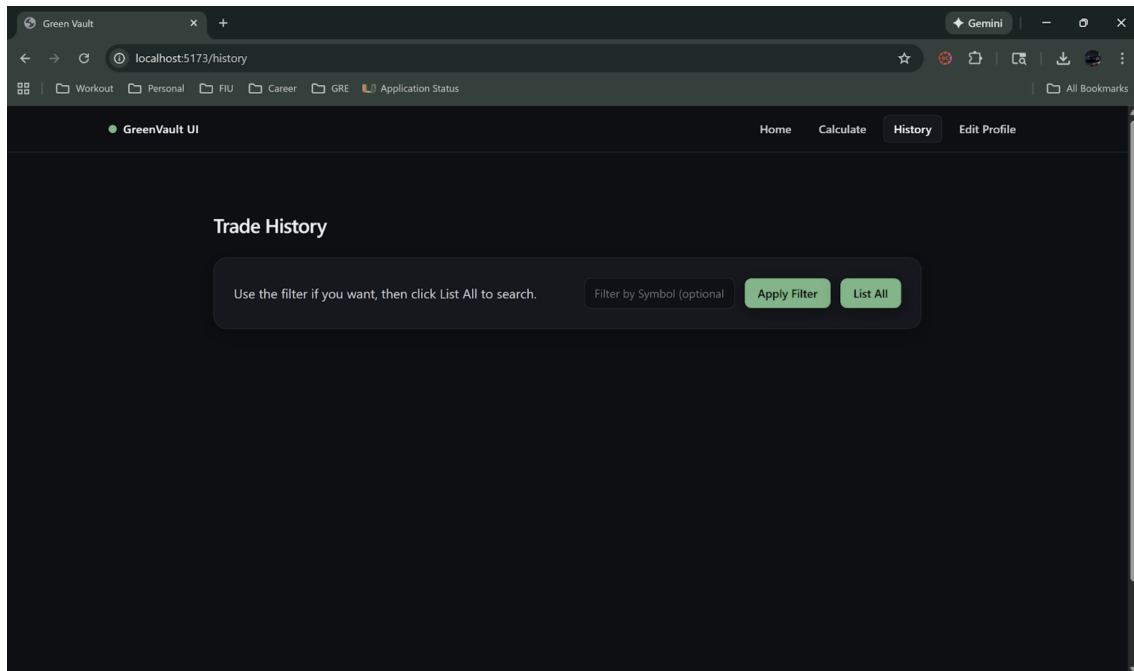
12. The estimate mode works similarly to the analyze mode in functionality and error handling. The two differences are that the output contains indeterminable fields, since they cannot be calculated, and you will also not have the ability to store your results.



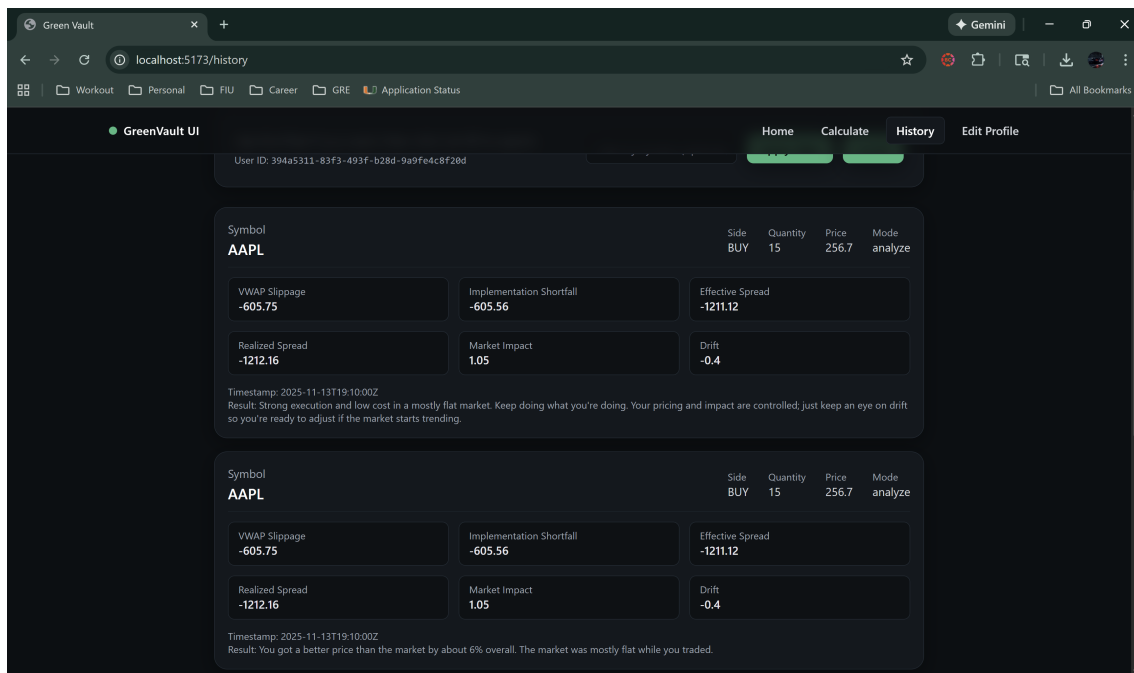
13. Once again the results will contain the bps of the calculated metrics and a review of your performance. These results cannot be stored in the database but will give you an approximation of how well you will perform by paying the typical price for your trade.



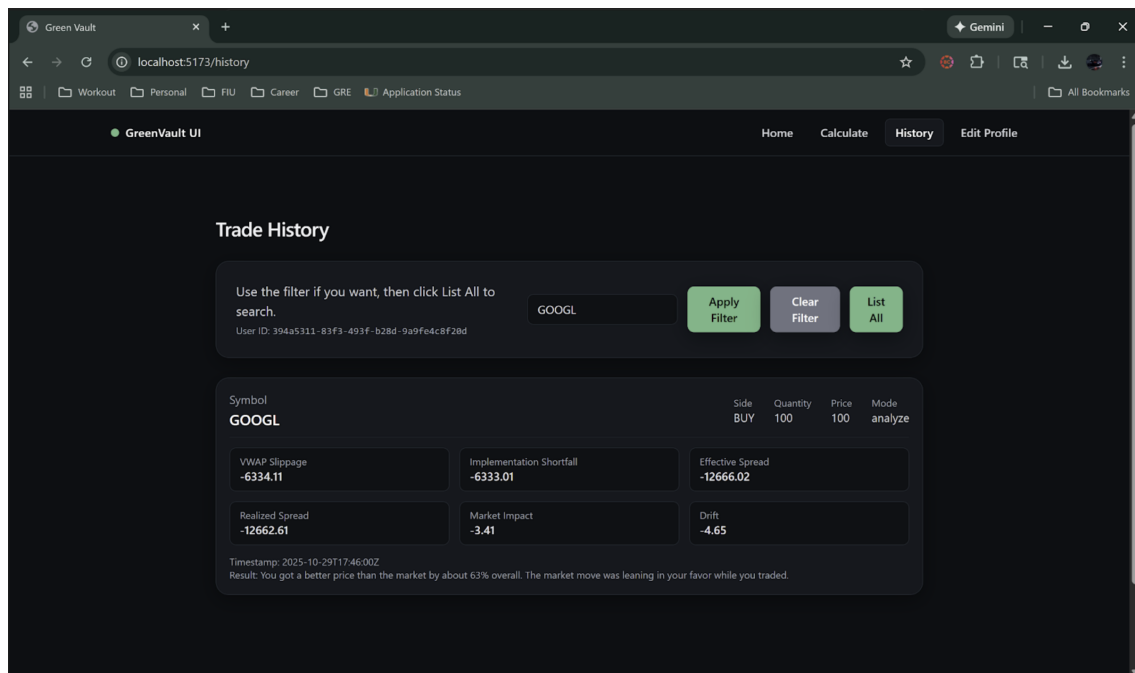
14. By heading to the top right corner and clicking on the “History” button, you will be redirected to the trade history page.



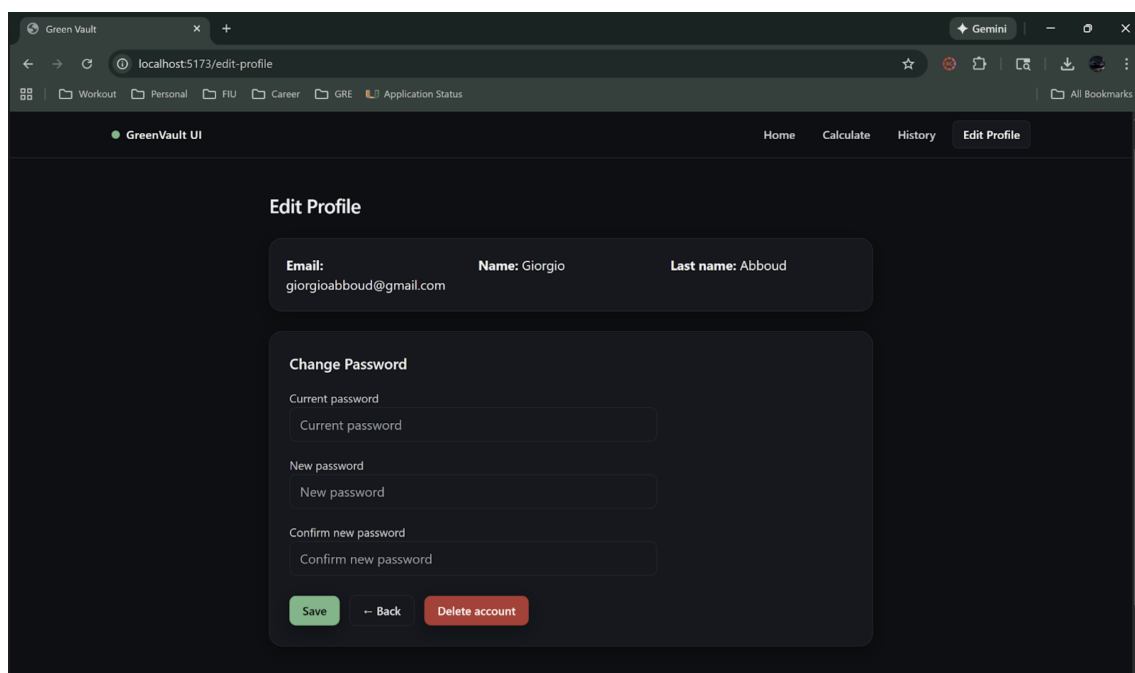
15. By pressing the “List all” button, you will be able to see the complete history of the trades you saved. This includes the calculated metrics, your inputs, and your performance’s review.



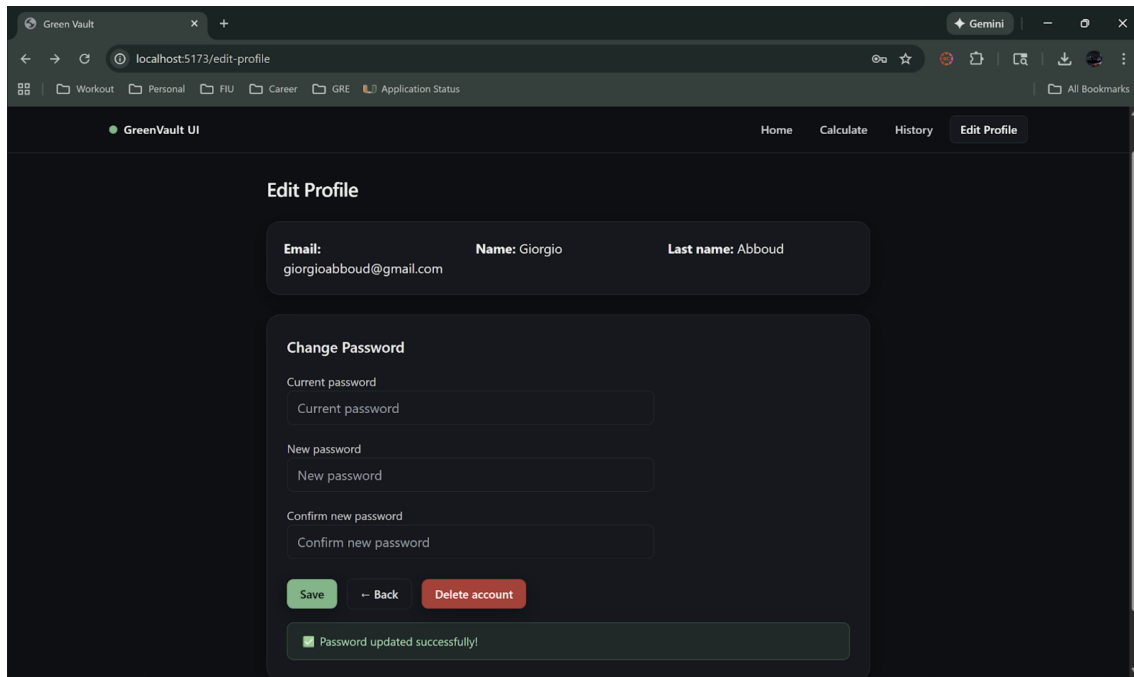
16. By inputting a symbol to filter by, you can now search for only specific stocks that you traded for. You always have the option to clear your inputted filter or apply a new one.



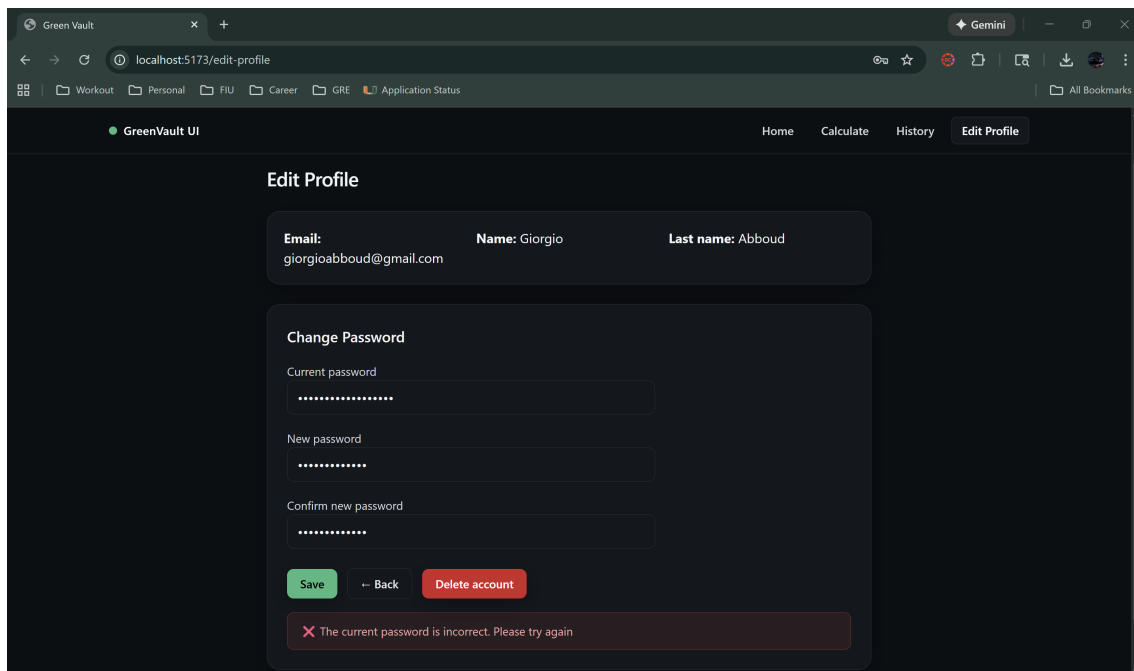
17. Going back to the top right, we see the “Edit Profile” button. Here you have the option to change your password or delete your account. You can also press the “Back” button to return to the homepage.

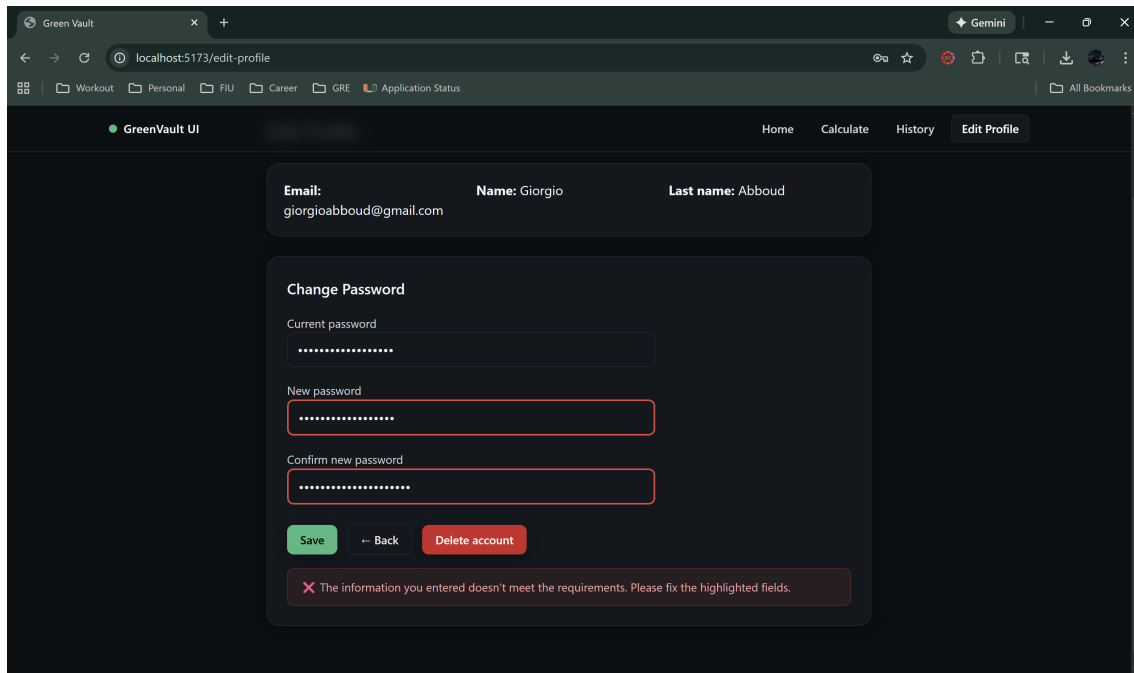


18. To change your password, simply enter your previous password, and enter your new password twice before pressing the “Save” button. This will automatically redirect you to the homepage once completed.

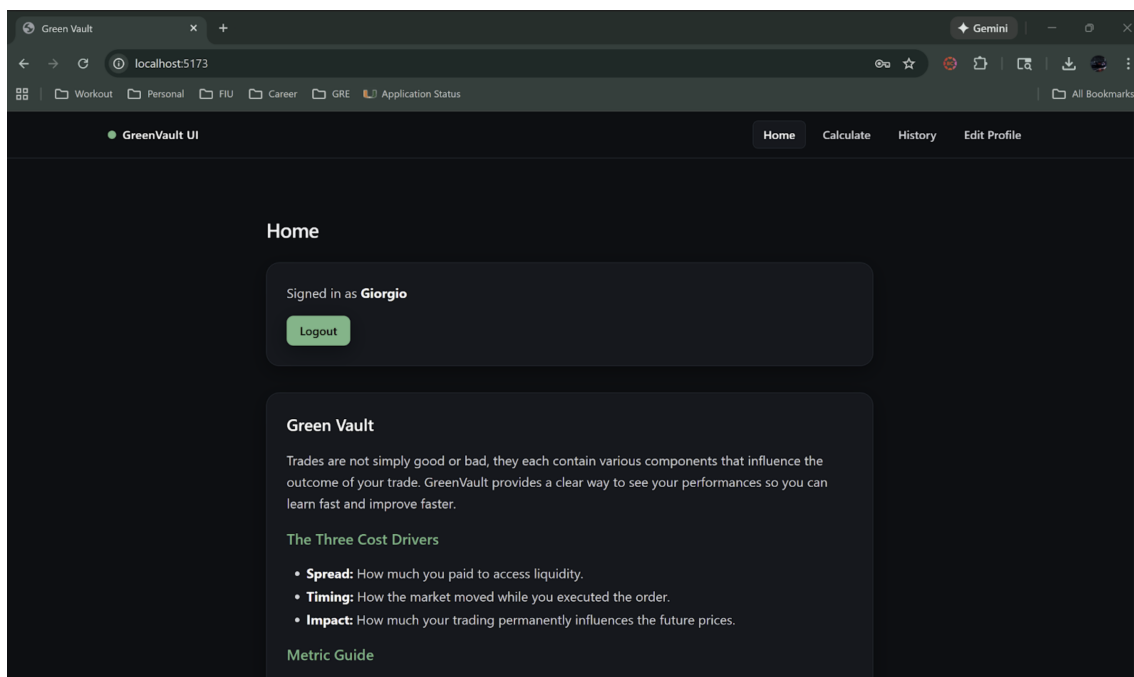


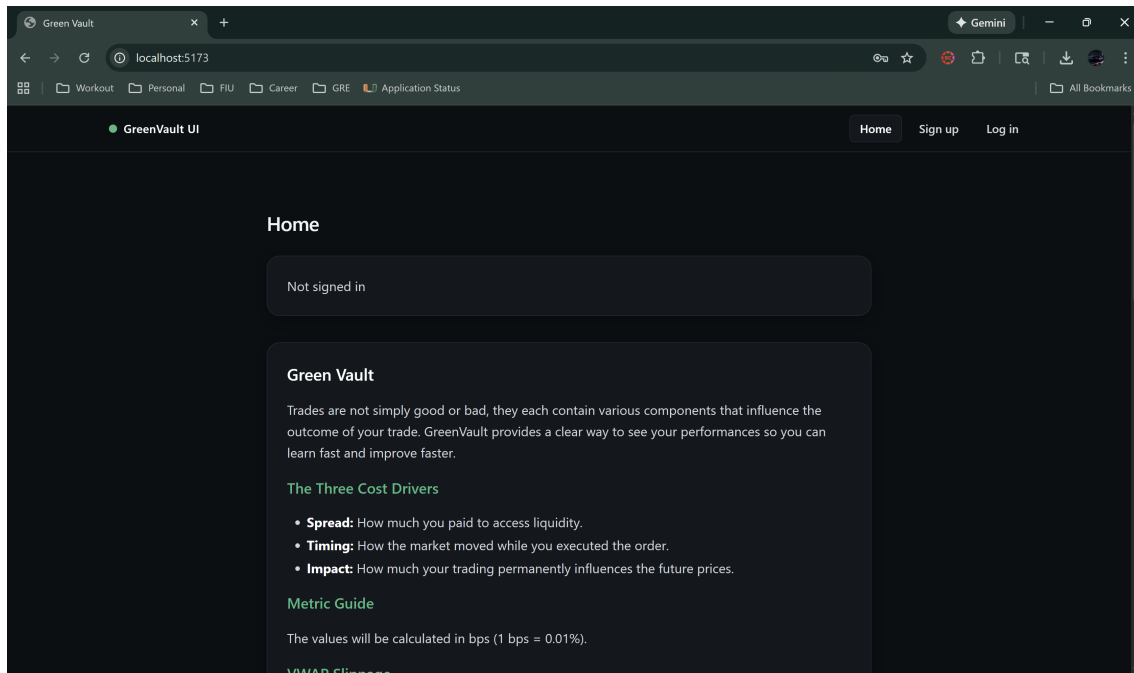
19. Failing to input your correct previous password or inputting contrasting new passwords will result in an error you must resolve.



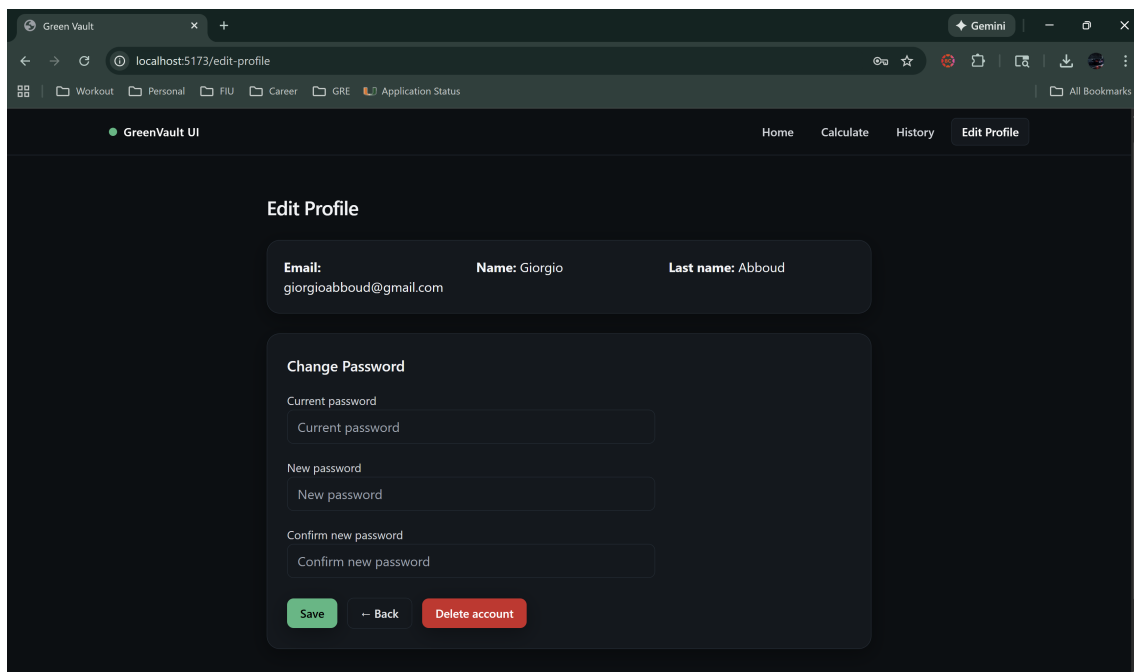


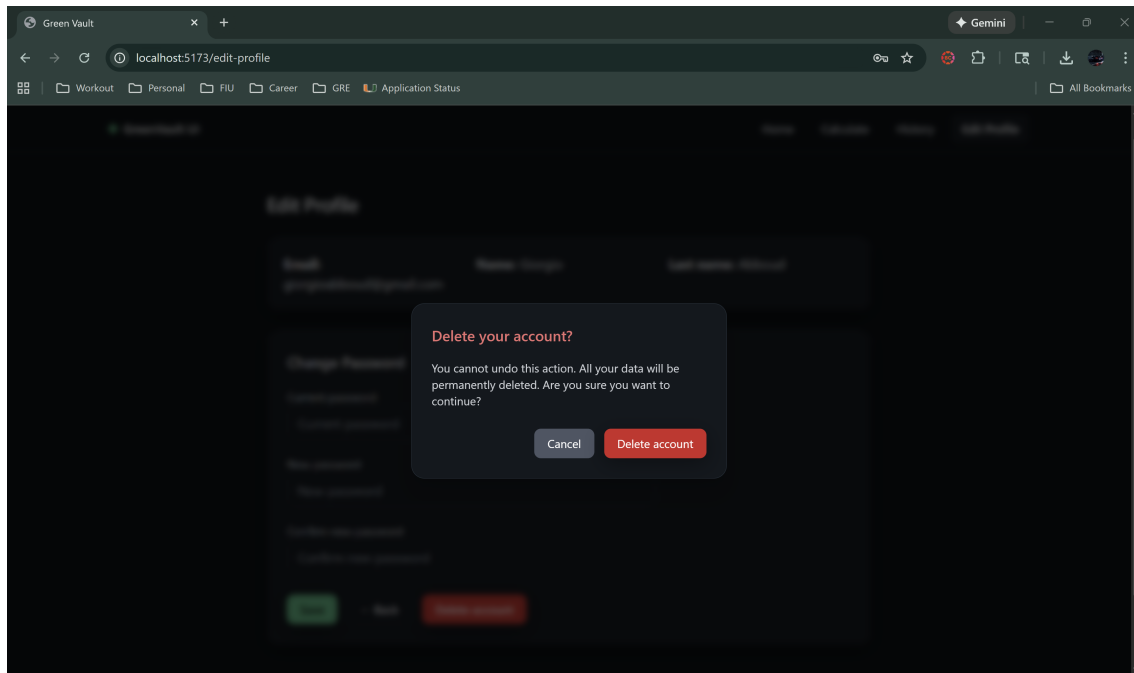
20. Back in the homepage, pressing the “Logout” button logs you out of your account. This will keep you in the homepage but you simply will not be logged in.



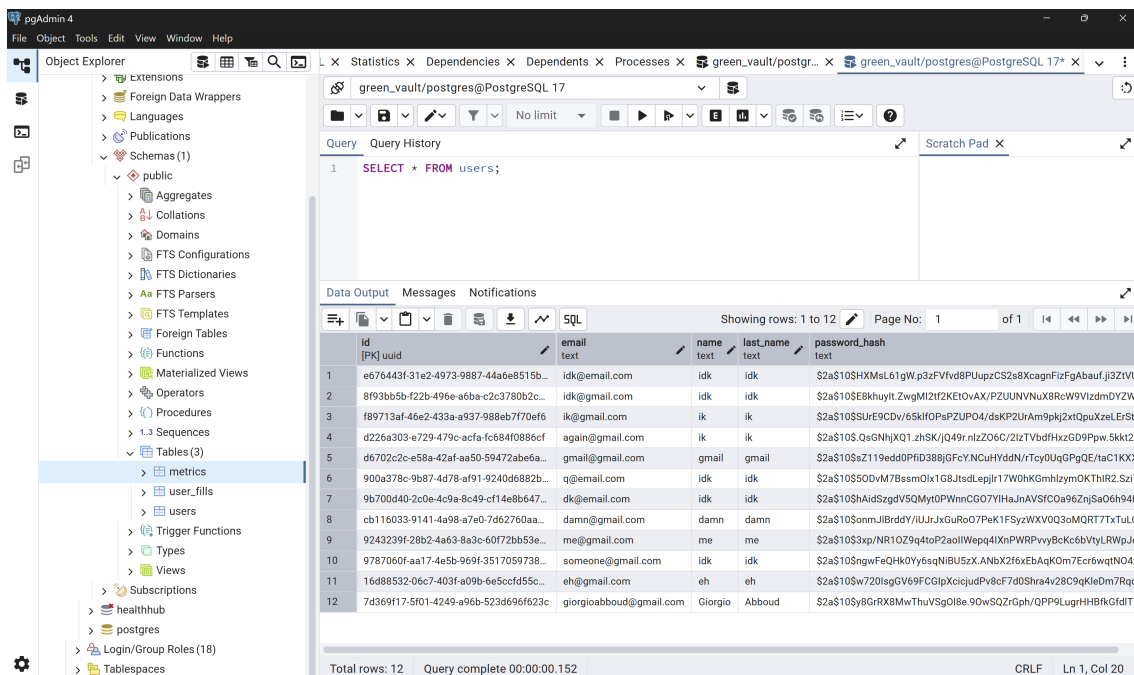


21. Should you want to delete your account, return to the edit profile page and select the “Delete account” button. A pop up will appear ensuring that you are confident in your decision. You can select “Back” to return to the edit profile page. Otherwise, press “Delete account” and you will be redirected to the login page.





22. To verify that your saved results in your database, you can open pgAdmin4, select Databases, your GreenVault database, Schemas, Public and Tables. From there you can use the SELECT clause to query for your data. Note: run **docker exec -it postgres-db psql -U postgres -d greenvault** in the terminal to access the DB if you don't have pgAdmin4.



pgAdmin 4

File Object Tools Edit View Window Help

green_vault/postgres@PostgreSQL 17

Query: `SELECT * FROM metrics;`

Showing rows: 1 to 8 | Page No: 1 of 1

	user_fill_id uuid	vwap_slippage double precision	shortfall double precision	effective_spread double precision	realized_spread double precision	market_impact double precision	drift double precision
1	-8718-ce91e62ca9...	5f51a240-3c62-468b-ac8d-e4e334192f4e	0	0	0	0	0
2	a403-09fd98895404	db72a5fa-86a3-4f60-b18b-c94573dfd153	0	0	0	0	0
3	-a616-faa515dfefca	04e4cf77-c33a-4854-9c34-57340e7832...	0	0	0	0	0
4	-3e3-b03f5817d0c0	9b729117-7a28-4418-9db5-6752b2ed6...	0	0	0	0	0
5	b48f-6a67bfb068fc	6f98801c-d1bc-4935-b416-3d01d970e7...	0	0	0	0	0
6	-a2c6-cc9ad057b3ff	fab16d1c-479a-4ecf-8e8c-c3ddf05a56c5	-34832.05	-34835.82	-69671.64	-69678.42	6.78
7	-b2e2-c2b4a02b17...	f9ec9fae-02cf-4c52-a5c4-0d2b03441ae9	-8955.19	-8955.28	-17910.55	-17907.22	-3.33
8	-78041-f0a52eb3b1b9	ec7055f0-3d12-49db-95ee-2822a9f16258	3.63	2.5	5	0	2.4

Total rows: 8 | Query complete 00:00:00.104 | CRLF | Ln 1, Col 22

pgAdmin 4

File Object Tools Edit View Window Help

green_vault/postgres@PostgreSQL 17

Query: `SELECT * FROM user_fills;`

Showing rows: 1 to 8 | Page No: 1 of 1

	KJ uid	user_id uuid	symbol text	timestamp timestamp with time zone	price double precision	side text	quantity bigint	mode text	result text
1	51a240-3c62-468b-ac8d-e4e334192f4e	e676443f-31e2-4973-9887-44a6e8515b...	AAPL	2025-10-10 14:07:00-04	123	buy	12	Analyze	SUCCESS
2	72a5fa-86a3-4f60-b18b-c94573dfd153	e676443f-31e2-4973-9887-44a6e8515b...	AAPL	2025-10-10 10:15:00-04	256.7	buy	1000	Analyze	SUCCESS
3	4e4cf77-c33a-4854-9c34-57340e7832...	e676443f-31e2-4973-9887-44a6e8515b...	AAPL	2025-10-10 10:15:00-04	256.7	buy	1000	Analyze	SUCCESS
4	-729117-7a28-4418-9db5-6752b2ed6...	e676443f-31e2-4973-9887-44a6e8515b...	AAPL	2025-10-10 10:15:00-04	256.7	buy	1005	Analyze	SUCCESS
5	98801c-d1bc-4935-b416-3d01d970e7...	e676443f-31e2-4973-9887-44a6e8515b...	AAPL	2025-10-10 10:15:00-04	256.7	buy	1005	Analyze	SUCCESS
6	b16d1c-479a-4ecf-8e8c-c3ddf05a56c5	9243239f-28b2-4a63-8a3c-60f72bb53ed5	AAPL	2025-11-12 14:14:00-05	1233	buy	23	analyze	
7	ec9fae-02cf-4c52-a5c4-0d2b03441ae9	9243239f-28b2-4a63-8a3c-60f72bb53ed5	NVDA	2025-11-05 13:28:00-05	21	buy	32	analyze	
8	-7055f0-3d12-49db-95ee-2822a9f16258	9243239f-28b2-4a63-8a3c-60f72bb53ed5	AAPL	2025-11-19 13:25:00-05	25	buy	321	estimate	

Total rows: 8 | Query complete 00:00:00.086 | CRLF | Ln 1, Col 25