

REPORT

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Deciphering User Behavior in Uniswap

Introduction: This is a challenged aimed at unravelling useful insights into the activities of users that visit the a Decentralised Finance (DeFi) Protocol. For my study, I chose Uniswap, a DeFi that enables peer to peer trading of cryptocurrency assets.

Methodology: My model data was obtained from The Graph, an indexing engine for fast and robust on-chain data retrieval. All credits goes to Uniswap that hosted the data as a subgraph on the community channel and The Graph that manages the data asset. Following the workflow for querying data on The Graph, I had to fetch the required queries for the use case I was tacking. Since this was a user-centric report I carefully had to select a query that gives the necessary result. So, I chose the queries for both Swap and Mint transactions. The downside was that they both had no gas cost as properties. To make up for this gap, I decided to use Dune and Infura. I was able to get other properties like *total eth transacted*, *user address* via the *origin* property, etc. The following was my target dataset fields:

- User ID or Address
- Date of Interaction
- Action Type (e.g., Swap, Deposit, Withdraw)
- Token Pair Traded
- Transaction Volume
- Liquidity Provided
- Fees Earned
- Protocol Revenue

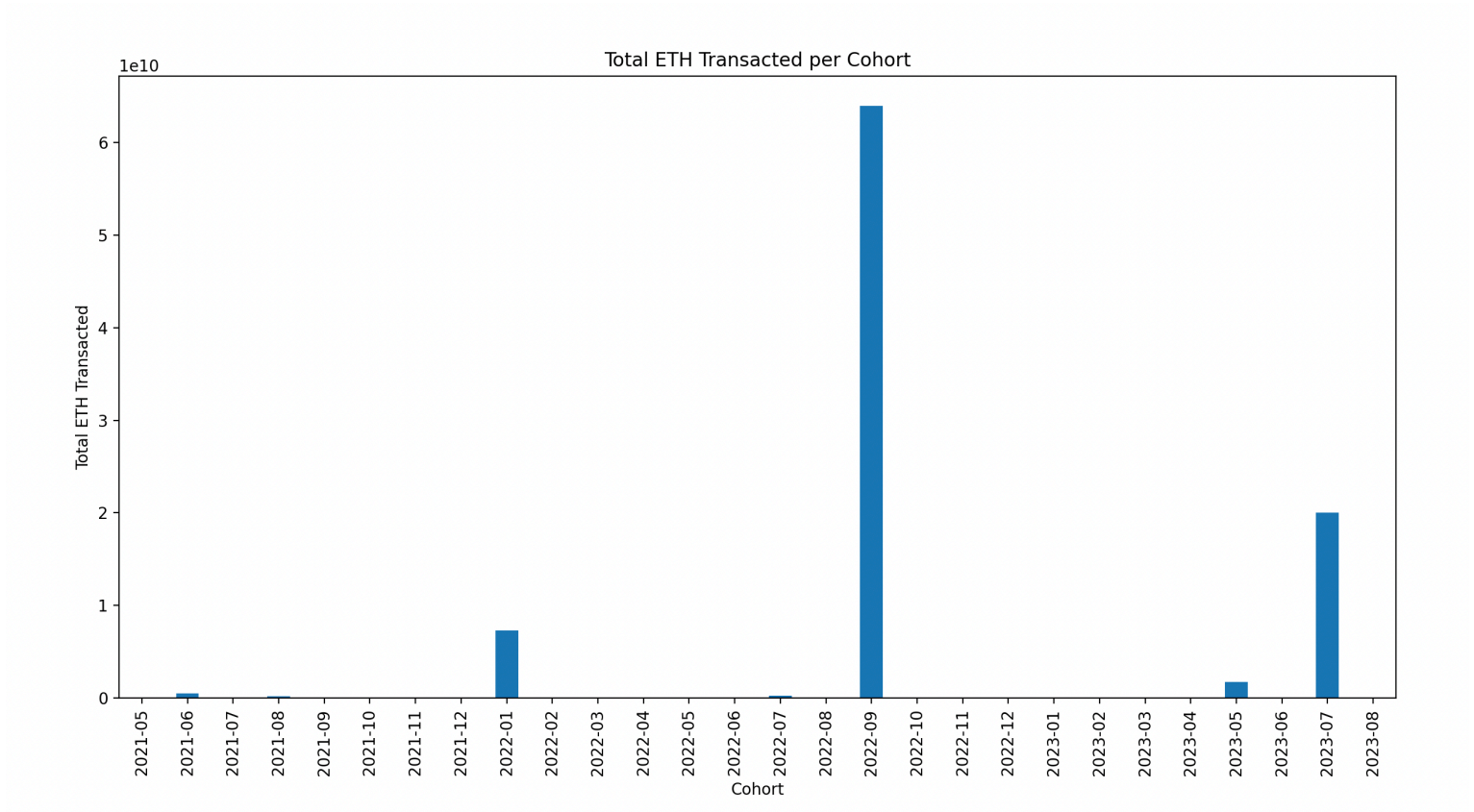
I also had to get an API key for Infura.

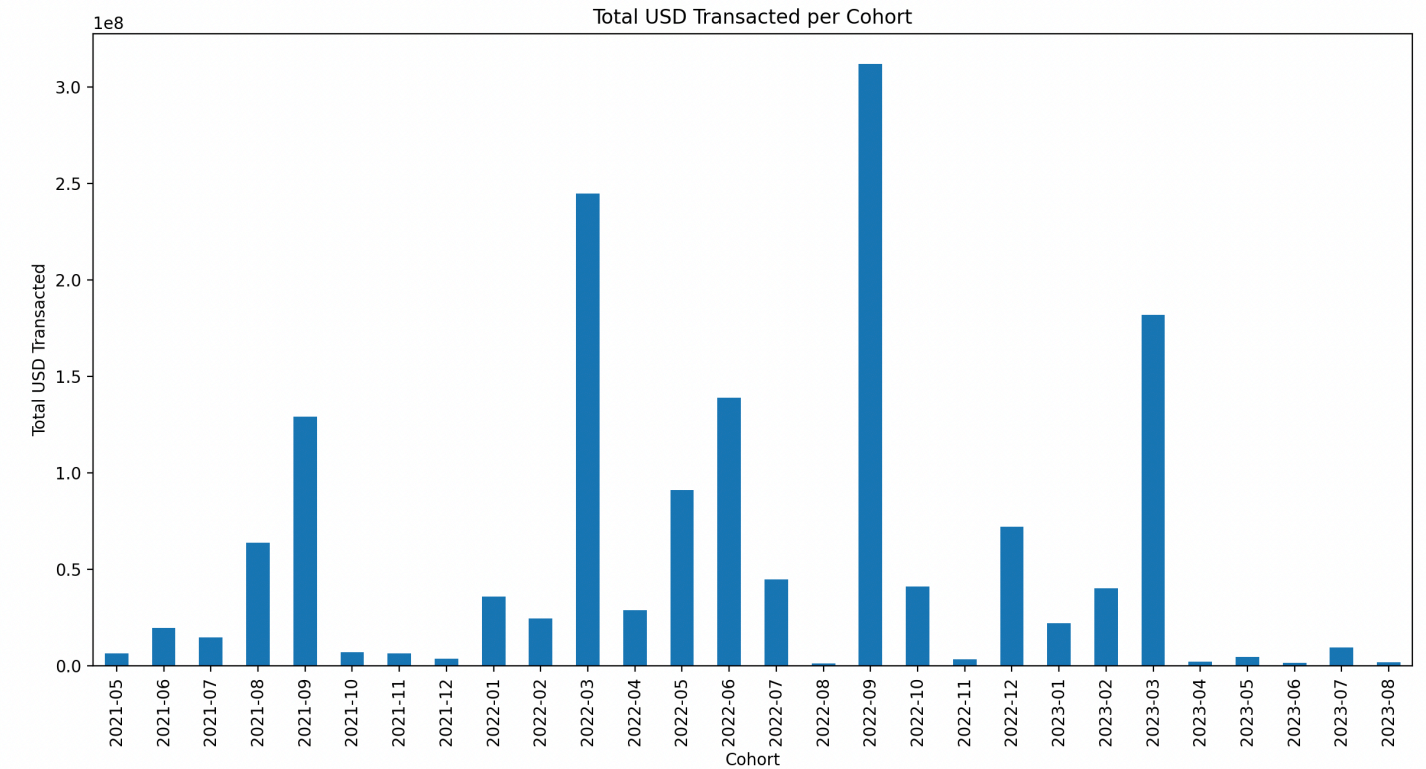
Key Metrics: My focus in this context was to analyse the trade volume, type of transaction (swap or mint), associated fees earned for different transactions over time. Key metrics like retention rates was also calculated and is added to the dataset.

Data Augmentation: I further enhance the dataset by calculating additional metrics, such user's monthly transactions , liquidity added, and fees earned

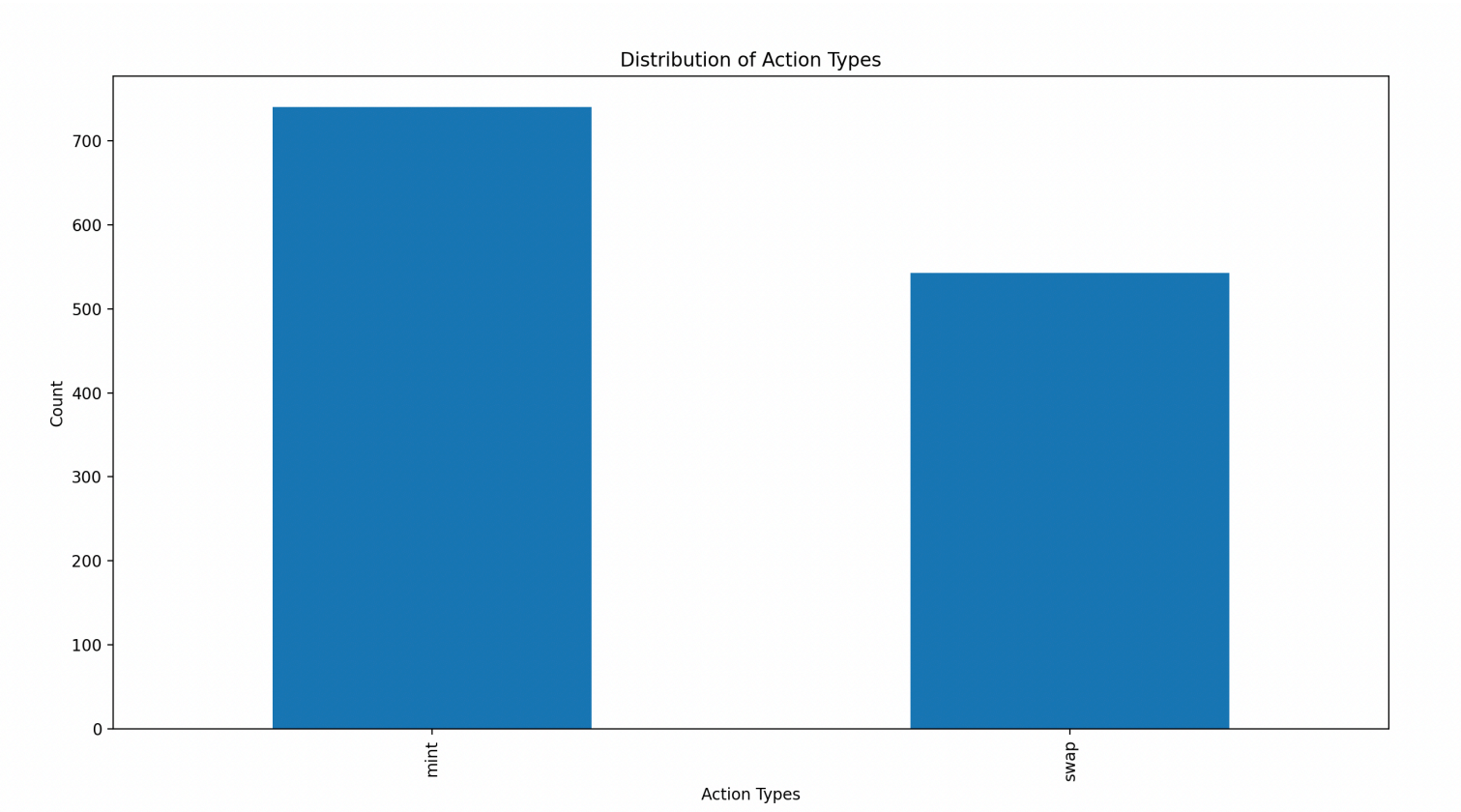
Action Type Classification: Transactions were classified into Swaps and Mints based on the smart contract event

Insights and Trends: Analysis revealed that in certain months the number of users that used a particular service (retention rate) dropped to zero while in many months or Cohorts, it was 100 percent. For this dataset, I also noted that more assets were minted than swapped. Again very high volume of ETH transaction was recorded in a particular Cohort as shown in the plot of Total ETH Transactioned vs Cohort. Overall higher volumes of USD were traded than ETH.





	user_id	cohort_ID	first_tranx_	total_tranx	total_eth	total_usd	action_types	avg_tranx
0	0x02d56257132406f48b4d6133396b6630f95e83cf	2022-08	2022-08-14	1	0.0	16.6	mint	0.0
1	0x04383e12b603b3b4e762d4e1f3a47f22156e5f2c	2021-07	2021-07-01	1	0.0	24657.3	swap	0.0
2	0x0cb406933cf62172f9bd564a8346fd2ce5e32775	2022-09	2022-09-14	1	0.0	3438.1	swap	0.0
3	0x1b56da7921fc11adfc1b62e48e883a5a149306d6	2023-05	2023-05-22	1	0.0	3558.9	mint	0.0
4	0x2a80396c6327207943f5de7dda63cf42bc2f442a	2021-09	2021-09-05	1	0.0	967.2	swap	0.0
5	0x2e3381202988d535e8185e7089f633f7c9998e83	2023-05	2023-05-07	1	0.0	3000.0	swap	0.0
6	0x31d87f4007dfa9f0dbb7dd93e195e608d86c3986	2022-09	2022-09-20	1	46721.1	0.0	mint	46721.1
7	0x4e0eb3600a466e6abe4521aa2be393419234f931	2023-08	2023-08-05	1	0.0	64.1	swap	0.0
8	0x552702e9e7969eab6518426a94ab2813d4f36c86	2023-03	2023-03-20	1	0.0	52790.3	mint	0.0
9	0x57db5d6aa783cf29af41330569d24957140fd3eb	2021-08	2021-08-11	1	891.8	6313.3	mint	891.8
10	0x5aa27fb521ae05a744334a2c0ff1fe5e775505482	2022-06	2022-06-15	1	19.5	355.8	mint	19.5
11	0x6046945c5b5ef5933b8e73a98a6ad7bf3e031df7	2023-03	2023-03-31	1	0.0	1148.5	swap	0.0
12	0x7641a5e890478bea2bdc4cafff960ac4ae96886e	2022-02	2022-02-17	1	878023.6	18019484.7	mint	878023.6
13	0x8307303322d032cf8e820b2c872741fdef08237c	2022-06	2022-06-17	1	0.0	32287.6	mint	0.0
14	0x8cb50c2ab3c9108ac5d5199c9397f26eb9642253	2021-08	2021-08-18	1	0.0	66762.2	swap	0.0
15	0x9d2a95c3d6291fef128a2dae89d6636ac6bd284e	2023-02	2023-02-21	1	0.0	9999.7	swap	0.0
16	0xadcd8aaddf5dcf81366fcc0212c154dfbfde1ed13	2021-08	2021-08-22	1	613.5	3321.8	mint	613.5
17	0xb0746f89f91f1bbcb4425974b09dbcc21f9e208c6	2023-06	2023-06-27	1	34406827.0	3744.9	mint	34406827.0
18	0xb5221831e9bb7344da2fff9cbd50c678fc18f821	2022-07	2022-07-18	1	0.0	363.4	mint	0.0
19	0xb74c4009b4917e4228007c398ad89596053922e9	2023-04	2023-04-24	1	0.0	235.8	swap	0.0
20	0xb79a48cdfb85d1ac45989f40793abc7a1a15c5e3	2023-07	2023-07-08	1	21755.8	37344.8	mint	21755.8
21	0xba9bc51c2b32d1286edc1f7fb05431a2aa542831	2023-07	2023-07-29	1	7013.6	17.7	mint	7013.6
22	0xbd4713eab86029180770da858df526c7f2a51d2b	2022-12	2022-12-06	1	48928.5	0.0	mint	48928.5
23	0xbf2d5d8ebf05947245b3d7f38b2776a6a49710dd	2023-03	2023-03-18	1	0.0	34751.0	swap	0.0
24	0xc5db7d2af4d4c6a9c92cd056d16b2ed6196e939d	2021-06	2021-06-11	1	0.0	59955.2	swap	0.0
25	0xce2e588ab4549d2939cc9f3dbc0a558188b61b52	2023-05	2023-05-14	2	0.0	3588.4	swap	0.0
26	0xd4d63cb0e661df7bd54b27d8ee38013d68e8cc8f	2021-08	2021-08-09	1	0.0	792.9	swap	0.0
27	0xe3192609d1d96725baab9ca4185da18dc864e436	2022-03	2022-03-15	1	0.0	87.9	swap	0.0
28	0xe53eca73fc23b395d4a6a5c6522029237d0b240	2021-09	2021-09-21	1	22269.2	445891.0	mint	22269.2
29	0xef53945676df69a4800eb9f0344c60c51e803442	2021-07	2021-07-12	2	0.0	10527.4	swap	0.0
30	0xf654cb0d7b1765091b035bb0205dd4b6b49c7f	2022-07	2022-07-11	1	0.0	3803.5	swap	0.0
31	0xfb9779477e5b4834bf2bc02dd29b97b344d0f700	2022-05	2022-05-22	2	0.0	21974.1	swap	0.0



Total Revenue (ETH): 35433063.599999994

Total Revenue (USD): 18851244.1

Retention Rates:

Cohort	Users in Cohort	Returning Users	Retention Rate (%)
2021-06	1	0	0
2021-07	2	2	100
2021-08	4	4	100
2021-09	2	1	50
2022-02	1	0	50
2022-03	1	1	100
2022-05	1	1	100
2022-06	2	2	100
2022-07	2	2	100
2022-08	1	0	50
2022-09	2	2	100
2022-12	1	0	50
2023-02	1	1	100
2023-03	3	3	100
2023-04	1	0	33.33
2023-05	3	3	100
2023-06	1	0	33.33

Recommendation:

1. Consider introducing additional incentives for transactions like swapping that recorded lower activities overall.
2. Enhance the user interface to provide users with clear information about trading fees and potential slippage. A user-friendly interface can improve user trust and engagement.

Limitation: I couldn't retrieve the gas cost and other transaction cost needed to calculate revenue and other important metrics.

Conclusion: Uniswap plays a crucial role in the DeFi ecosystem. By focusing on liquidity provision incentives, slippage reduction, and user experience improvements, Uniswap can continue to provide a seamless and rewarding trading experience for its users.

Disclaimer: This report is based on analysis of hypothetical data and is intended for illustrative purposes only, please do not use in production.