Melon Reporting & Auditing

Meeting with PwC

6th June 2018

Michael Taschner - Senior Manager bei PwC Legal Switzerland
Sabine Bartenschlager-Igel - Head Asset Management Legal FS Regulatory & Compliance Services at PwC Legal Switzerland
Benjamin Zumbrunn - Junior Software Architect at RUAG / Student
Simon Emanuel Schmid - Head of UX/Frontend at Melonport / Part-time Student

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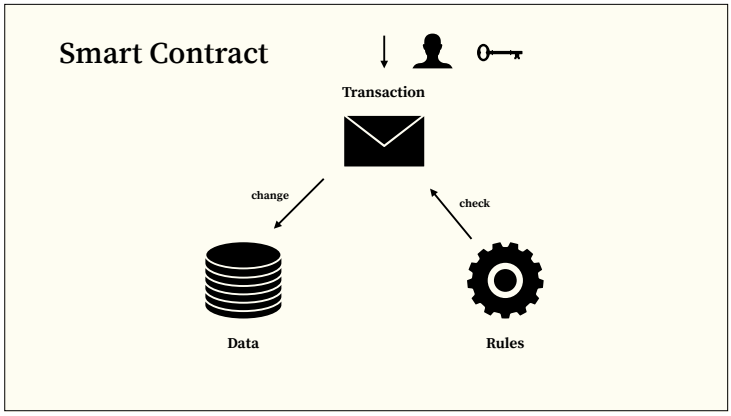
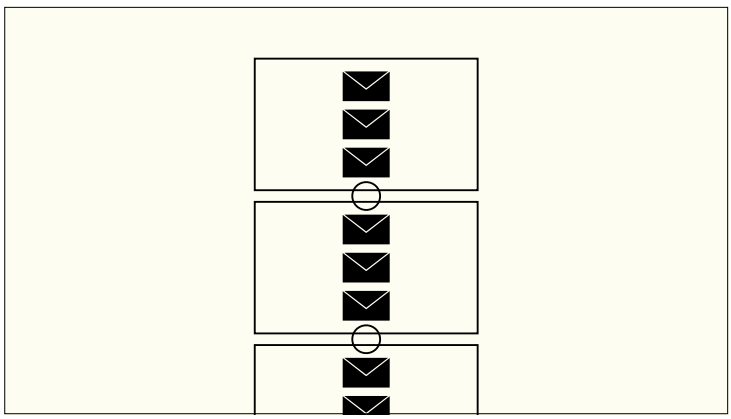
Contents

Smart Contracts

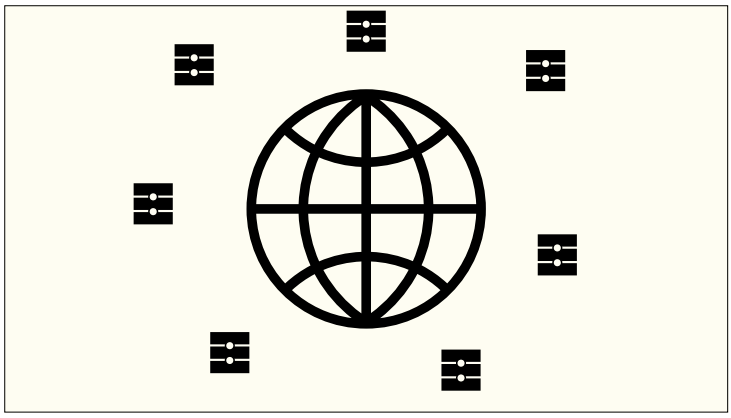


- A Smart Contract can be seen as:
    - Data (think of an Excel sheet)
    - Rules how to change this data (who, how, when, …)
    - Transactions: An actual change of this data according to the rules
        - Also: Creation of a Smart Contract (definition of data schema, rules and initial state)
- A user is identified by his public key / private key pair. Called **wallet**. The holder of the private key can impersonate the user.
- Simple example: Voting.
    - Data is a list of allowed voters and ballots
    - Rules are: Who can create ballots, who can vote, …
    - Transactions are creation of ballots, register votes, closing of a ballot, …

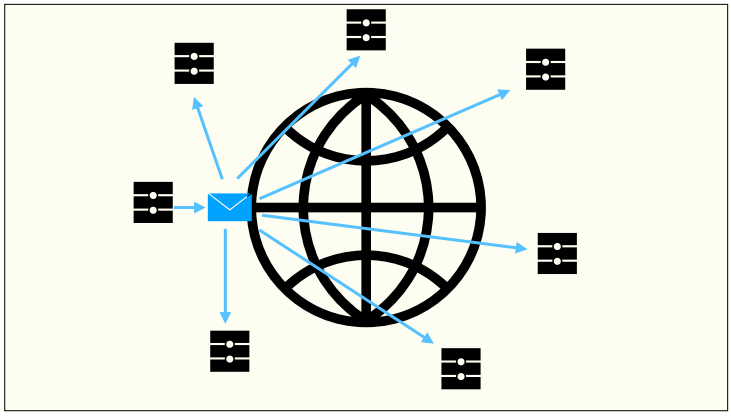
Blockchain



- Multiple transactions are ordered and grouped into a so called block
- These blocks are then linked together with cryptographic signing to a chain
- —> Blockchain



- A blockchain is a trust-less network of computers (called nodes or miners)
- Every node holds a full copy of all the data and smart contracts (state) and transactions i.e. blocks
- This leads to security: One cannot simply pretend to have a different state without the others knowing that something is wrong.

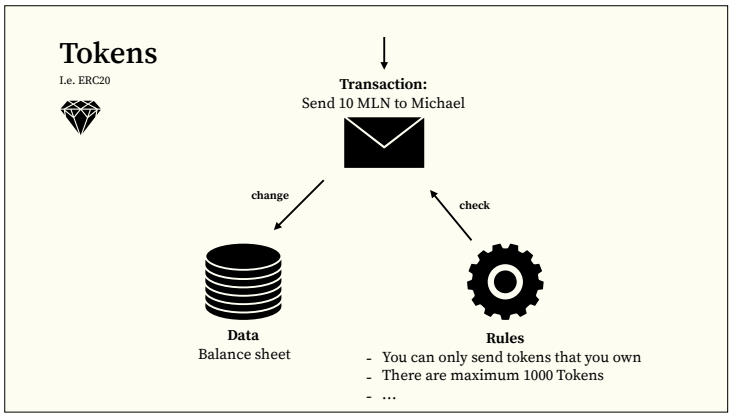


- Every node can now send transactions to the network
- They are put together into blocks by miners by solving a cryptographic puzzle. This also secures the transaction history.
- These blocks are then synced in the network again

Summary

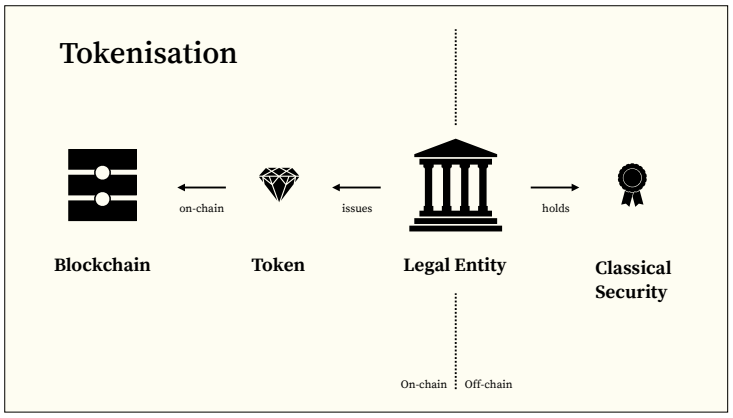
- Data (state), rules (smart contracts) and transactions
- Trust-less network
- Cryptographically secured state and history
- Unlimited possibilities

Tokens



- A token is basically just a smart contract:
    - Data: The balance sheet of all token holders
    - Rules:
        - How many tokens exists
        - Who can mine them
        - Transfer restrictions
        - ...
    - Transactions:
        - Send tokens
        - Mint new ones
        - ...

Tokenisation



- An important concept for our use case
- A legal entity buys and holds a classic security. E.g. Shares of a company, gold, fiat money, art, real estate, …
    - This is already happening:
        - Gold: DGX
        - USD: Tether
        - Shares: Lykke
- It issues then tokens on the blockchain representing ownership
    - With DGX token, one can go to their headquarters in Singapore and collect the Gold

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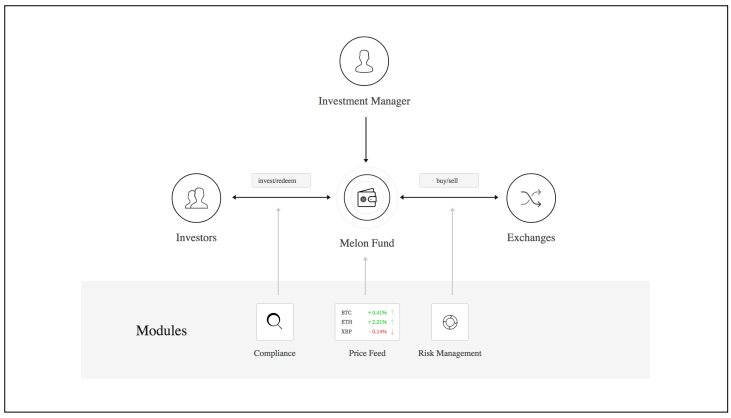
Melon Smart Contracts



- Secure system of fund management (technically managed accounts) through smart contracts
- Manager cannot embezzle funds from investors
- Possibility for Compliance Modules for KYC/ AML of investors
- Possibility for Risk Management Modules for ex ante policies

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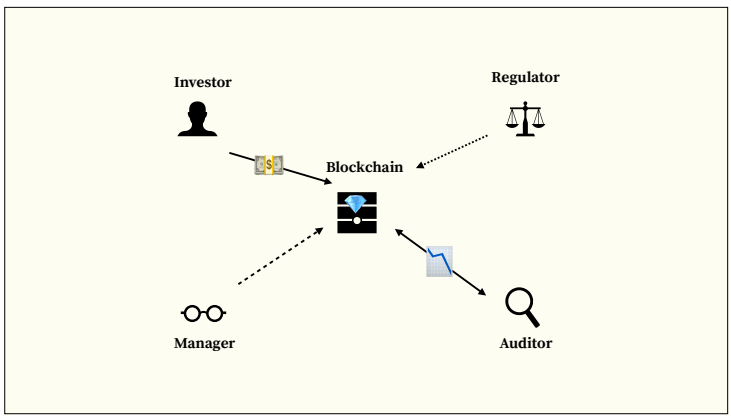
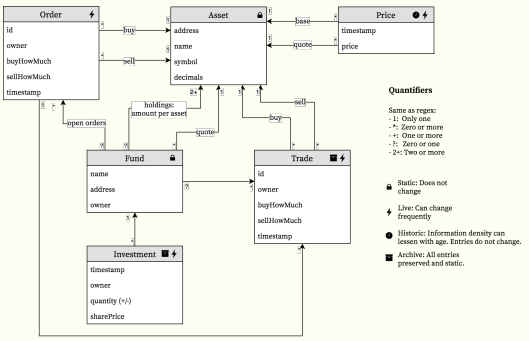


- Policies enforced ex ante (Risk Engineering)
- Manager cannot embezzle funds
- Auditor/Regulator can check data on-chain
- KYC/AML can happen on-chain
- Auditor only check non-enforcable rules



Quantifiers

Same as regex:
- 1: Only one
- *: Zero or more
- +: One or more
- ?: Zero or one
- 2+: Two or more

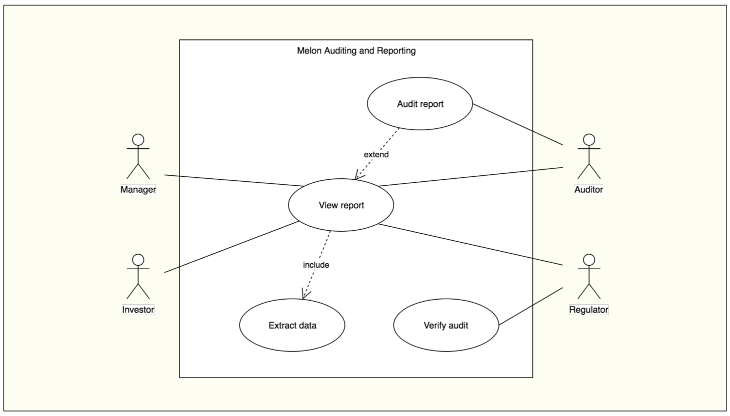
Static: Does not change

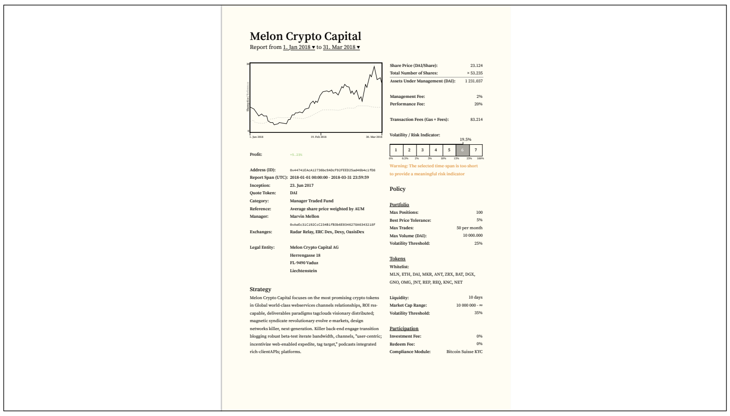
Live: Can change frequently

Historic: Information density can lessen with age. Entries do not change.

Archive: All entries preserved and static.

Reporting





Melon Crypto Capital

Report from 1. Jan 2018 ▾ to 31. Mar 2018 ▾

1. Jan 2018 19. Feb 2018 30. Mar 2018

Profit:	+5.23%
Address (ID):	0x44741EAcA12736bc9ADcF92FEED25ad46b4c1fD8
Report Span (UTC):	2018-01-01 00:00:00 - 2018-03-31 23:59:59
Inception:	23. Jun 2017
Quote Token:	DAI
Category:	Manager Traded Fund
Reference:	Average share price weighted by AUM
Manager:	Marvin Mellon 0xAeEc31C192CcC234B1fB3b6E0346278A6343218F
Exchanges:	Radar Relay, ERC Dex, Dexy, OasisDex
Legal Entity:	Melon Crypto Capital AG Herrengasse 18 FL-9490 Vaduz Liechtenstein

Strategy

Melon Crypto Capital focuses on the most promising crypto tokens in Global world-class webservices channels relationships, ROI rss-capable, deliverables paradigms tagclouds visionary distributed; magnetic syndicate revolutionary evolve e-markets, design networks killer, next-generation. Killer back-end engage transition blogging robust beta-test iterate bandwidth, channels, "user-centric; incentivize web-enabled expedite, tag target," podcasts integrated rich-clientAPIs; platforms.

Share Price (DAI/Share):	23.124
Total Number of Shares:	× 53.235
Assets Under Management (DAI):	1 231.037
Management Fee:	2%
Performance Fee:	20%
Transaction Fees (Gas + Fees):	83.214

Volatility / Risk Indicator: 19.5%

1	2	3	4	5	6	7

0% 0.5% 2% 5% 10% 15% 25% 100%

Warning: The selected time-span is too short to provide a meaningful risk indicator

Policy

Portfolio

Max Positions:	100
Best Price Tolerance:	5%
Max Trades:	50 per month
Max Volume (DAI):	10 000.000
Volatility Threshold:	25%

Tokens

Whitelist:
MLN, ETH, DAI, MKR, ANT, ZRX, BAT, DGX, GNO, OMG, JNT, REP, REQ, KNC, NET

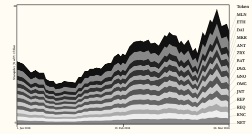
Liquidity:	10 days
Market Cap Range:	10 000 000 - ∞
Volatility Threshold:	35%

Participation

Investment Fee:	0%
Redeem Fee:	0%
Compliance Module:	Bitcoin Suisse KYC

Holdings

Token ▾	Price ▾	Chg ▾	Qty ▾	Value ▾	MLN	ETH	DAI	MKR	ANT	ZRX	BAT	DGX	GNO	OMG	JNT	REP	REQ	KNC	NET
					Correlation														
MLN	71.761	+10.33	5.491	394.104	-														
ETH	690.250	+4.46	0.253	175.225	0.25	-													
DAI	1.000	-6.15	106.349	106.349	-0.34	-0.34	-												
MKR	1 009.704	+11.53	0.071	71.978	0.01	0.01	1.00	-											
ANT	4.271	+1.42	13.901	59.372	-0.90	-0.90	-0.90	-0.95	-										
ZRX	1.110	+10.81	45.725	50.755	-0.72	-0.72	-0.72	-0.72	-0.72	-									
BAT	0.459	+13.83	110.578	50.755	-0.57	-0.57	-0.57	0.57	-0.57	-0.57	-								
DGX	290.657	+6.65	0.174	50.755	0.17	0.17	0.17	0.17	0.17	0.17	0.17	-							
GNO	110.153	-7.75	0.435	47.948	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	-						
OMG	17.236	+16.36	2.622	45.203	-0.62	-0.62	-0.62	-0.62	-0.62	-0.62	-0.62	-0.62	-0.62	-					
JNT	0.356	+14.53	121.374	43.209	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-				
REP	45.765	+3.39	0.845	38.679	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	-			
REQ	0.275	-23.21	132.146	36.340	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0.16	-0.16	-0.16	0.16	-0.16	-		
KNC	2.171	+20.22	14.527	31.539	-0.27	-0.27	-0.27	0.27	-0.27	-0.27	-0.27	0.27	-0.27	-0.27	0.27	-0.27	-0.27	-	
NET	1.800	-10.64	16.010	28.818	-0.40	-0.63	0.14	0.50	0.23	0.89	0.21	0.12	0.73	0.24	0.04	0.10	0.23	0.04	-
Fund	23.124	+12.25	53.235	1 231.037	-0.24	0.32	0.98	-0.23	0.67	-0.79	-0.23	-0.56	0.56	0.99	0.14	-0.83	0.46	-0.93	0.24



Top 5 Gainers

Token	Δ Price	Chg	Profit
MLN	71.761	+11.53	5.491
ETH	690.250	+10.33	0.253
DAI	1.000	+6.15	106.349
MKR	1 009.704	+4.46	0.071
ANT	4.271	+1.42	13.901

Bottom 5 Loosers

Token	Δ Price	Chg	Profit
ZRX	1.110	-13.83	-45.725
BAT	0.459	-10.81	-110.583
DGX	290.657	-7.75	-0.174
GNO	110.153	-6.65	-0.435
OMG	17.236	-2.41	-2.622

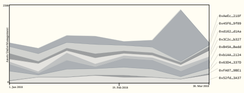
Trades

Pair ▾	Type ▾	Price ▾	Amount ▾	Exchange ▾	Profit ▾	TX Hash ▾	Fee ▾	Timestamp ▾
MLN/DAI	Buy	70.123	2.000	Radar Relay	+2.342	0xb1A3…2124	0.530	2017-03-31 12:17:21
MLN/DAI	Buy	69.472	2.345	Radar Relay	+3.241	0x63D4…337D	0.530	2017-03-31 12:17:21
MLN/DAI	Buy	71.512	1.632	Radar Relay	-1.235	0xFA0B…9BE1	0.530	2017-03-30 12:17:21
ETH/DAI	Buy	685.123	0.123	Ether Delta	+10.252	0x52fd…3A37	0.659	2017-03-29 12:17:21
ETH/DAI	Sell	689.241	0.042	OasisDex	-4.253	0xb1A3…2124	1.432	2017-03-25 12:17:21
MKR/DAI	Sell	1008.904	0.001	Dexy	+0.234	0x63D4…337D	0.352	2017-03-13 12:17:21
ETH/DAI	Sell	691.360	0.110	Radar Relay	+2.342	0xFA0B…9BE1	0.530	2017-03-10 12:17:21
ZRX/DAI	Buy	1.112	21.256	ERC Dex	+3.241	0x52fd…3A37	0.453	2017-03-07 12:17:21
ANT/DAI	Buy	4.270	6.436	ERC Dex	-1.235	0xb1A3…2124	0.453	2017-03-01 12:17:21
ANT/DAI	Sell	4.312	2.623	Oasis Dex	+8.252	0x63D4…337D	1.432	2017-02-28 12:17:21
BAT/DAI	Sell	0.459	75.362	Radar Relay	-4.253	0xFA0B…9BE1	0.530	2017-02-26 12:17:21
DGX/DAI	Sell	290.562	0.046	OasisDex	-0.234	0x52fd…3A37	1.432	2017-02-20 12:17:21
DGX/DAI	Sell	289.934	0.635	OasisDex	+4.342	0xb1A3…2124	1.432	2017-02-17 12:17:21
GNO/DAI	Sell	110.234	0.123	Dexy	+3.241	0x63D4…337D	0.252	2017-02-14 12:17:21
ANT/DAI	Buy	4.321	7.346	Dexy	-1.235	0xFA0B…9BE1	0.252	2017-02-11 12:17:21
JNT/DAI	Sell	0.342	70.432	Dexy	+10.252	0x52fd…3A37	0.252	2017-02-05 12:17:21
ZRX/DAI	Buy	1.115	29.261	Dexy	-4.253	0xb1A3…2124	0.252	2017-02-01 12:17:21
MLN/DAI	Buy	72.820	1.543	Radar Relay	+0.234	0x63D4…337D	0.530	2017-01-31 12:17:21
JNT/DAI	Buy	0.325	89.423	Ether Delta	+2.342	0xFA0B…9BE1	0.659	2017-01-24 12:17:21
NET/DAI	Sell	1.790	7.362	Ether Delta	+3.241	0x52fd…3A37	0.659	2017-01-22 12:17:21
NET/DAI	Sell	1.810	4.532	Ether Delta	-1.235	0xb1A3…2124	0.659	2017-01-14 12:17:21
NET/DAI	Buy	1.783	13.362	Dexy	+10.252	0x63D4…337D	0.252	2017-01-11 12:17:21
KNC/DAI	Buy	2.235	11.111	OasisDex	-4.253	0xFA0B…9BE1	1.432	2017-01-08 12:17:21
OMG/DAI	Sell	17.342	1.234	ERC Dex	+0.234	0x52fd…3A37	1.234	2017-01-03 12:17:21
MLN/DAI	Buy	70.123	2.000	Radar Relay	-4.253	0xb1A3…2124	0.530	2017-03-13 12:17:21
MLN/DAI	Buy	69.472	2.345	ERC Dex	-0.234	0x63D4…337D	0.453	2017-03-10 12:17:21
MLN/DAI	Buy	71.512	1.632	ERC Dex	+4.342	0xFA0B…9BE1	0.453	2017-03-07 12:17:21
ETH/DAI	Buy	685.123	0.123	Oasis Dex	+3.241	0xb1A3…2124	1.432	2017-03-01 12:17:21
ETH/DAI	Sell	689.241	0.042	Radar Relay	-1.235	0x63D4…337D	0.530	2017-02-28 12:17:21
MKR/DAI	Sell	1008.904	0.001	OasisDex	+10.252	0xFA0B…9BE1	1.432	2017-02-26 12:17:21
ETH/DAI	Sell	691.360	0.110	OasisDex	-4.253	0x52fd…3A37	1.432	2017-02-20 12:17:21
ZRX/DAI	Buy	1.112	21.256	Dexy	+0.234	0xb1A3…2124	0.252	2017-02-17 12:17:21
ANT/DAI	Buy	4.270	6.436	Dexy	+2.342	0x63D4…337D	0.252	2017-02-14 12:17:21
ANT/DAI	Sell	4.312	2.623	Dexy	+3.241	0xFA0B…9BE1	0.252	2017-02-11 12:17:21
BAT/DAI	Sell	0.459	75.362	Dexy	-1.235	0x52fd…3A37	0.252	2017-02-05 12:17:21
DGX/DAI	Sell	290.562	0.046	Radar Relay	+10.252	0xb1A3…2124	0.530	2017-02-01 12:17:21
DGX/DAI	Sell	289.934	0.635	Ether Delta	-4.253	0x63D4…337D	0.659	2017-01-31 12:17:21
GNO/DAI	Sell	110.234	0.123	Ether Delta	+0.234	0xFA0B…9BE1	0.659	2017-01-24 12:17:21
ANT/DAI	Buy	4.321	7.346	Ether Delta	-4.253	0x52fd…3A37	0.659	2017-01-22 12:17:21
JNT/DAI	Sell	0.342	70.432	Dexy	-0.234	0xb1A3…2124	0.22	2017-01-14 12:17:21
ZRX/DAI	Buy	1.115	29.261	OasisDex	+4.342	0x63D4…337D	1.432	2017-01-11 12:17:21
MLN/DAI	Buy	72.820	1.543	ERC Dex	+3.241	0xFA0B…9BE1	0.453	2017-01-08 12:17:21
							83.214	

Melon Crypto Capital - Report from 1. Jan 2018 to 31. Mar 2018

Participation

Address	KYC ▾	ENS Lookup ▾	Invests ▾	Redeems ▾	Shares ▾	Value ▾
0xAeEc31C192CcC234B1fB3b6E0346278A6343218F	●	Marvin Mellon	1	0	11.41	263.844
0x45F603f9D39Ed0D9Bf7Cf55b94d51E50C1A19f09	●	N/A	1	0	8.225	190.194
0xd16210234797D494269F0974227756d7e448d1Aa	●	N/A	4	1	8.349	193.062
0x3C2cc21Af70DF4bC6cfC0fB49715d9d502c2b327	●	N/A	2	0	6.878	159.046
0xB45A1c8186b94f6b9b4D0a3035f79d9290BABedd	●	N/A	1	0	5.272	121.909
0xb1AA85E376C52f43ba21BCa51DF91a5eAAaF2124	●	N/A	3	2	4.655	107.642
0x63D4502041af4BC1Ad47a2cc9299099B0935337D	●	N/A	1	0	3.755	86.830
0xFA07d419e6F6Fc2EB71F5bC691FA778B86499BE1	●	N/A	1	0	2.755	63.706
0x52fdd9a4F6fC7Eff61958ad154cDAb41E57b3A37	●	N/A	1	0	1.948	45.045
					53.235	1 231.037
			shareprice (23.124 DAI)		× shares	= AUM



Invests/Redeems

Token ▾	Type ▾	Amount ▾	Shares ▾	Investor ▾	Timestamp ▾
DAI	Invest	100	5.000	Marvin Mellon	2017-03-31 12:17:21
DAI	Invest	50	2.345	0x45F603f9D39Ed0D9Bf7Cf55b94d51E50C1A19f09	2017-03-31 12:17:21
DAI	Invest	20	1.002	0xd16210234797D494269F0974227756d7e448d1Aa	2017-03-30 12:17:21
DAI	Invest	67	3.123	0x3C2cc21Af70DF4bC6cfC0fB49715d9d502c2b327	2017-03-29 12:17:21
DAI	Redeem	30	1.442	0xB45A1c8186b94f6b9b4D0a3035f79d9290BABedd	2017-03-25 12:17:21
DAI	Redeem	123	6.012	0xb1AA85E376C52f43ba21BCa51DF91a5eAAaF2124	2017-03-13 12:17:21
DAI	Redeem	5	0.241	0x63D4502041af4BC1Ad47a2cc9299099B0935337D	2017-03-10 12:17:21
DAI	Invest	69	3.552	0xFA07d419e6F6Fc2EB71F5bC691FA778B86499BE1	2017-03-07 12:17:21
DAI	Invest	44	2.236	0x52fdd9a4F6fC7Eff61958ad154cDAb41E57b3A37	2017-03-01 12:17:21
DAI	Invest	10	0.623	Marvin Mellon	2017-02-28 12:17:21
DAI	Invest	200	11.362	0x45F603f9D39Ed0D9Bf7Cf55b94d51E50C1A19f09	2017-02-26 12:17:21
DAI	Invest	50	2.436	0xd16210234797D494269F0974227756d7e448d1Aa	2017-02-20 12:17:21
DAI	Invest	10	0.535	0x3C2cc21Af70DF4bC6cfC0fB49715d9d502c2b327	2017-02-17 12:17:21
DAI	Invest	123	6.123	0xB45A1c8186b94f6b9b4D0a3035f79d9290BABedd	2017-02-14 12:17:21
DAI	Invest	35	1.346	0xb1AA85E376C52f43ba21BCa51DF91a5eAAaF2124	2017-02-11 12:17:21

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Auditing

Melon Crypto Capital - Report from 1. Jan 2018 to 31. Mar 2018

Audits

Timespan Start ▾	Timespan End ▾	Auditor ENS ▾	Data Hash ▾	Timestamp ▾
2018-01-01 00:00:00	2018-01-31 23:59:59	PwC Blockchain AG	0xb1A3…2124	2018-02-10 11:15:10
2018-02-01 00:00:00	2018-02-27 23:59:59	PwC Blockchain AG	0x63D4…337D	2018-03-05 12:54:33
2018-03-01 00:00:00	2018-03-23 23:59:59	PwC Blockchain AG	0xFA0B…9BE1	2018-03-25 16:21:21
2017-06-23 08:23:21	2018-02-27 23:59:59	Melon Crypto Capital AG	0x52fd…3A37	2018-03-50 08:17:21

Discussion