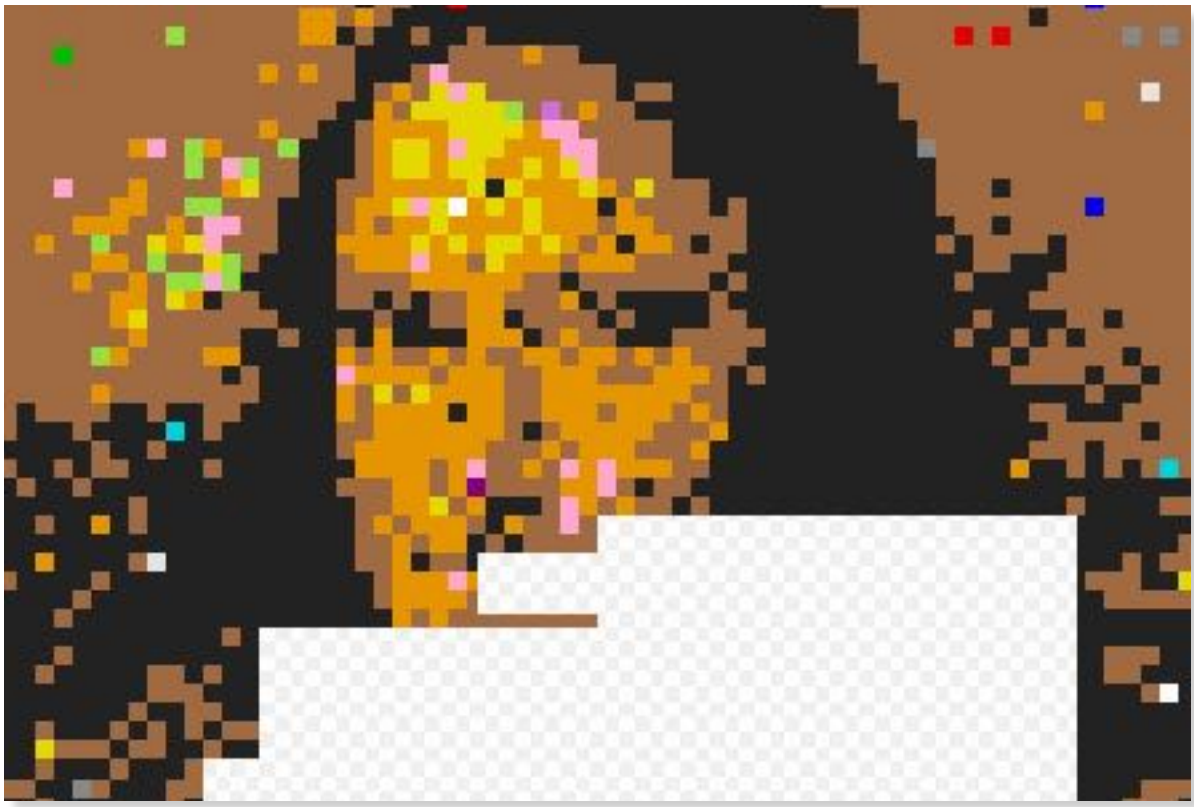
CryptoCanvas.art

Distributed & collectable community artworks empowered by Blockchain technology.



The Mindhouse
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Abstract

As the blockchain technology grew many surprising projects showed up. Cryptocurrencies are definitely most recognisable ones but they were not the inspiration for Crypto Canvas.

Popularity of projects based on collecting unique items really amazes us. Apps like CryptoPunks or CryptoKitties proved that blockchain can be used to something else than dealing with currencies. It provides both incontestable proof of ownership of digital good and tools to trade that good.

The most important part is that mentioned projects are surprisingly popular. People are willing to pay a significant amount of money to become an owner of 24x24 pixel punk icon. The same thing happens with CryptoKittens. It clearly shows that people are starting to believe in that technology.

Blockchain provides distributed database whose history is publicly visible. It brings new possibilities but as well new limitations. Cost of immutable history log comes with a price for storing data. Massive cost comparing to traditional databases. Because of that, in case of more storage demanding apps, it's not possible to store all data in the blockchain. Keeping a good balance between on-blockchain and off-blockchain data is a new problem, that we need to focus on a bit more.

After analysing contract code of existing DApps[1] one may think that this balance is not really kept. Only critical data is being stored on the blockchain, rest is kept on the private servers. In case servers are shot down users becomes owners of meaningless ids (or gene number in case of kittens).

CryptoCanvas.art, as opposed to mentioned applications, is designed to keep all its data on the blockchain. It means, whatever happens to our servers, everybody is able to read and interpret all the data. Everybody can create a custom frontend to interact with our contract. We realise that it's extreme approach and usually it's not possible to do that, but our goal is to show that it's possible to have a different approach to storing data in DApps.

[1] Decentralised Application

What is Crypto Canvas?

Crypto Canvas is collectible art painted by the community backed by Ethereum blockchain technology. We managed to store all the data on the blockchain. Website cryptocanvas.art is a tool to interact with the contract. We hope you like it. In case you don't, feel free to create a different one.

Crypto Canvas provides empty, 64x64 canvases where everybody can paint on. You can think of a canvas as a token. As you have probably noticed, we don't create any tokens at the very beginning. You, the community, will become authors of artworks created on our platform.

Once the canvas is fully painted, contract has to determine who will become artwork's owner. Initial bidding will be available from that point. Winner of the bidding becomes the artwork's owner and is allowed to trade it as he wants to. Amount of ethers he bid will be proportionally distributed among all the authors of the artwork.

Inspiration

Crypto Canvas idea grew inspired by projects already mentioned in this document: CryptoPunks and CryptoKitties. They're great, yet simple projects. They prove that there are many different uses cases for blockchain technology. In short words, they create set of unique and collectible digital assets. We love their idea and execution. We wanted to go on the bit different path though. We prove that keeping more data on the blockchain is possible. Moreover, thanks to few optimisations, it doesn't have to be very pricey.

Another project we have to mention here was Reddit Place. The concept of art created by the community is interesting. But the outcome is what's truly fascinating. Even though there were no rules, what people can or can't paint, there is no a single sign of racism nor aggression.

Crypto Canvas introduces collectible art created by the community. It's where Reddit Place meets Crypto Punks.

Rules of contract

Mechanics of Crypto Canvas is highly dependant on canvas' lifecycle which consists of three stages:

1. ***Painting*** - this state is the first one. It starts when the canvas is created and finishes when the last pixel is set. In this stage, canvas doesn't have an owner. Trading and initial bidding are not allowed.
   Each address can place pixel only once per 30 seconds. It's a small value, but at some level, it should enforce cooperation.
2. ***Initial bidding*** - process of determining the first owner of the artwork. Bidding is allowed after the last pixel of the canvas is set and lasts for 48 hours after the first bid is made. A bid has to be bigger than minimal value (0.08 ETH) and previously made one (if any).
   When somebody successfully places a bid, he becomes an owner of an artwork, but trading will be blocked until initial bidding finishes. Thanks to that, the contract gives a chance to other people to place a higher bid. When somebody is outbid, he's ethers will be transferred back to his wallet.
3. ***Trading*** - process of selling and buying finished artworks. It's available after initial bidding is finished. It's up to the artwork's owner when to sell it and for how much. Basically, there are 3 mechanisms to trade artworks:
   - The owner of the artwork says that it's for sale and sets a minimum price. Then, whoever first pay that price (or more) buys the artwork. However the owner can choose to sell his artwork to one specific address. If he does so, only that specified address can buy artwork.
   - Anybody can place a buy offer on an artwork. It's up to the owner to accept offer or not. It's possible to cancel buy offer at any time before owner accepts it.
     If many people make a buy offer, only the highest one is kept. Because of that, newly made offers have to be higher than existing ones.
   - The owner can transfer his artwork for free to any address he choses. It's forbidden to send artworks to 0x0 address.

Business model

We like clear rules, that's why Crypto Canvas's business model is very simple. We take 5% from every completed transaction.

We don't charge anything if the transaction is not finished. For example, if you made a buy offer or initial bid but it was outbid your money will be transferred back to you. No costs here.

A fee is charged from receiver of a payment. Let's assume someone makes a buy offer for 1 ETH and owner accepts it. We charge 0.05 ETH and owner gets 0.95 ETH.

Goal

TBD

Legal

//Agreement on the fact that as a community we sell both ownership and copyrights to the art. Owner can use it as he wants, BUT it will be cleary said, till the end of existence of the blockchain, who are AUTHORS of each art.

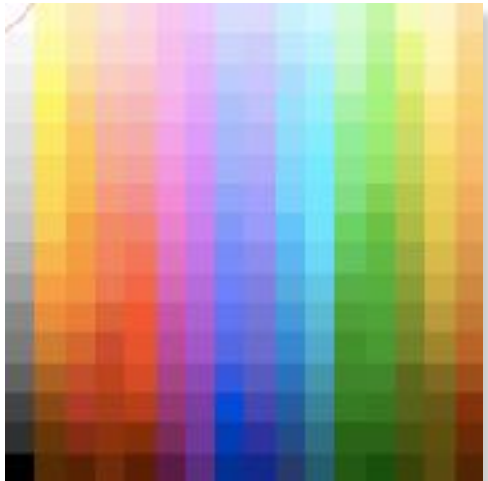
Technical information

Our contract is no different than any other Ethereum contract. That's why there is gas cost for every transaction. Calls to the blockchain, that only reads data, are free.

Documentation and gas costs for every function can be found on the project's GitHub page.

Colour palette

CryptoCanvas stores pixel using 8bit colours. Because of technical details we decided that we won't use RGB colour palette (especially that there are few standards). Because of that



we created custom palette, where each colour is represented by number between 0-255. We place full colour mapping in the table below.

CryptoCanvas full colour palette

0	none	64	128	192
1	#FFFF9E	65	129	193
2	#FFE6A3	66	130	194
3		67	131	195
4		68	132	196
5		69	133	197
6		70	134	198
7		71	135	199
8		72	136	200
9		73	137	201
10		74	138	202
11		75	139	203
12		76	140	204
13		77	141	205
14		78	142	206
15		79	143	207
16		80	144	208
17		81	145	209
18		82	146	210
19		83	147	211
20		84	148	212
21		85	149	213
22		86	150	214
23		87	151	215
24		88	152	216
25		89	153	217
26		90	154	218
27		91	155	219
28		92	156	220
29		93	157	221
30		94	158	222

31	95	159	223
32	96	160	224
33	97	161	225
34	98	162	226
35	99	163	227
36	100	164	228
37	101	165	229
38	102	166	230
39	103	167	231
40	104	168	232
41	105	169	233
42	106	170	234
43	107	171	235
44	108	172	236
45	109	173	237
46	110	174	238
47	111	175	239
48	112	176	240
49	113	177	241
50	114	178	242
51	115	179	243
52	116	180	244
53	117	181	245
54	118	182	246
55	119	183	247
56	120	184	248
57	121	185	249
58	122	186	250
59	123	187	251
60	124	188	252
61	125	189	253
62	126	190	254
63	127	191	255