

# Blockchain is not just about cryptocurrencies. What it actually is and what possibilities this technology has.

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Freelancer

11.09.2023

# Plan of speech

- Introduction and genesis,
- What is Blockchain,
- Definitions related to Blockchain,
- Applications,
- Advantages and Disadvantages,
  
- How to get started.

# Genesis

- reflections on online privacy,
- 2007-2009 economic crisis,
- subprime loans,
- October 2008 - US government approves \$700 billion bailout for banks,
- "too big to fail",
- decline in confidence in State institutions.

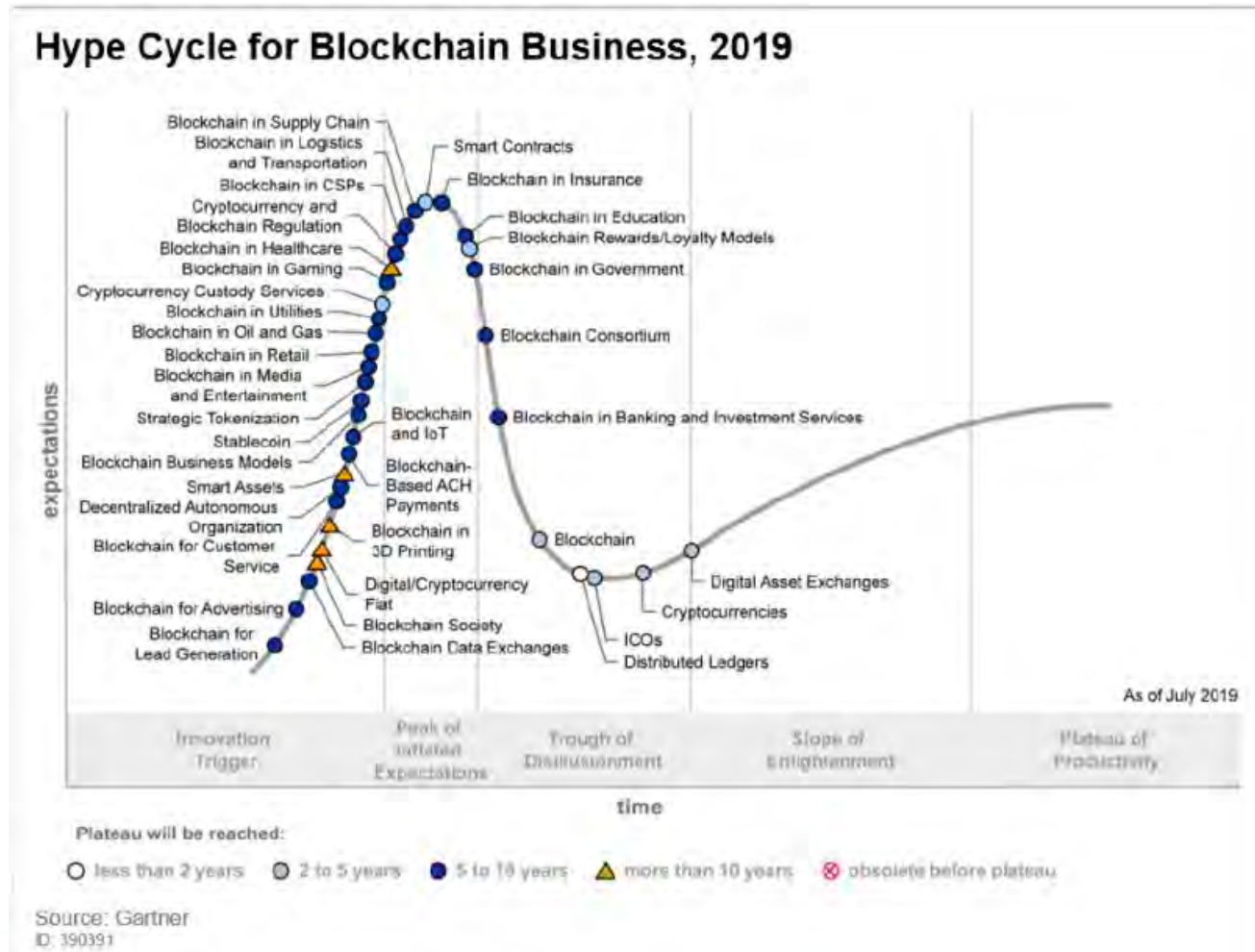
open source - key elements:

- publicly available source code,
- a license that allows modification of the code and its further distribution,
- the license does not limit the field of application, e.g. Linux system, LibreOffice package

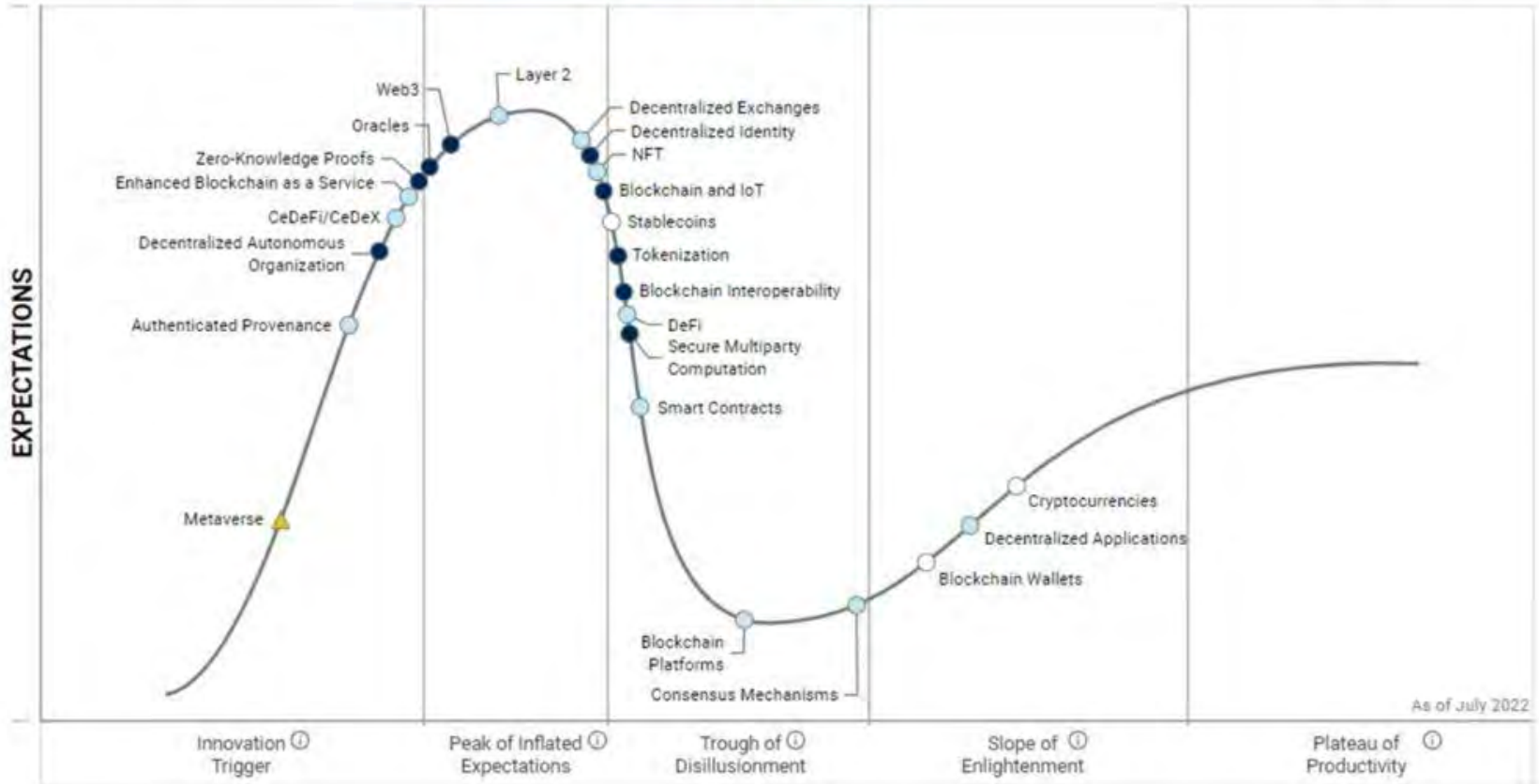
LEHMAN BROTHERS



# Why you should be interested in blockchain technology

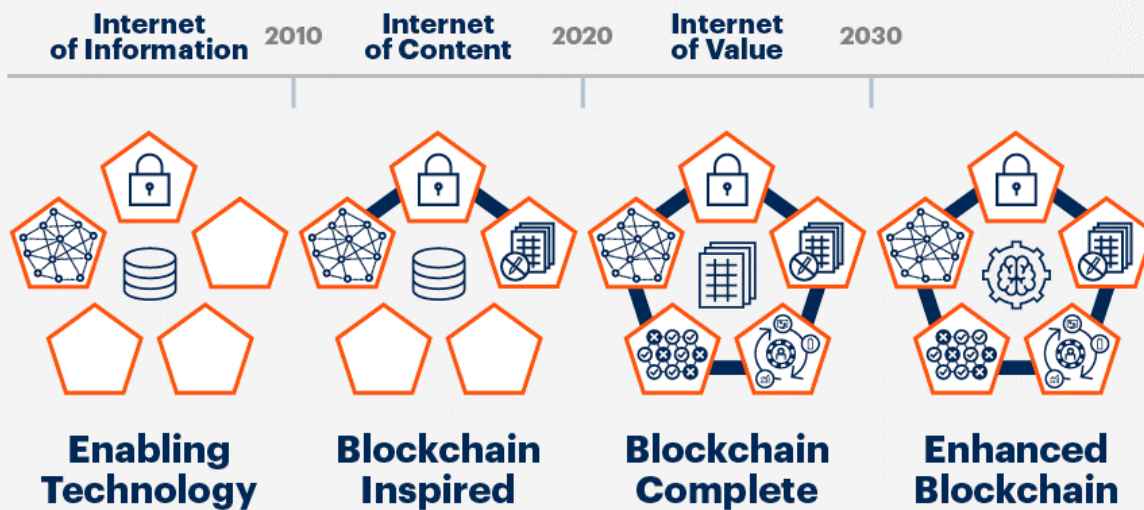


Time To Plateau Will Be Reached:  < 2 yrs.  2-5 yrs.  5-10 yrs.  > 10 yrs.



2022

# The Gartner Blockchain Spectrum, which began with emergence in 2008, predicts **maturity around 2025:**



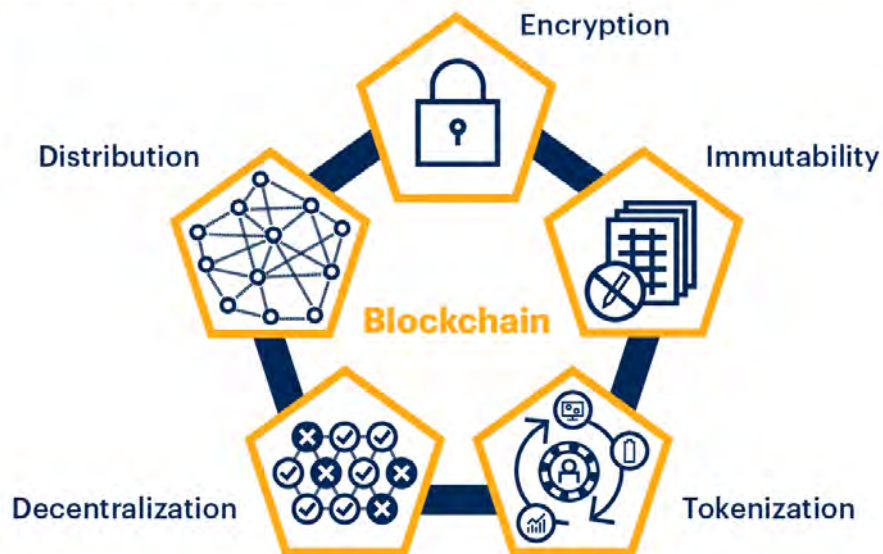
Source: Gartner  
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**Gartner**



## Five Key Elements of Blockchain

A complete blockchain incorporates all five of these design elements to authenticate users, validate transactions and record that information to the ledger in a way that can't be corrupted by a single participant or changed after the fact.



[gartner.com](https://gartner.com)

Source: Gartner  
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**Gartner**

# Whitepaper – Bitcoin-2008r.

## Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto  
satoshin@gmx.com  
www.bitcoin.org

**Abstract.** A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

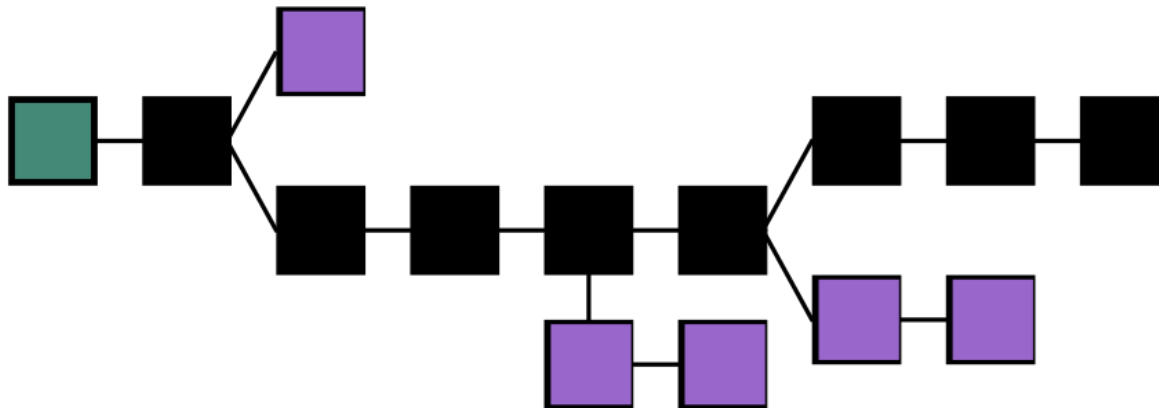
### 1. Introduction

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible, since financial institutions cannot avoid mediating disputes. The cost of mediation increases transaction costs, limiting the



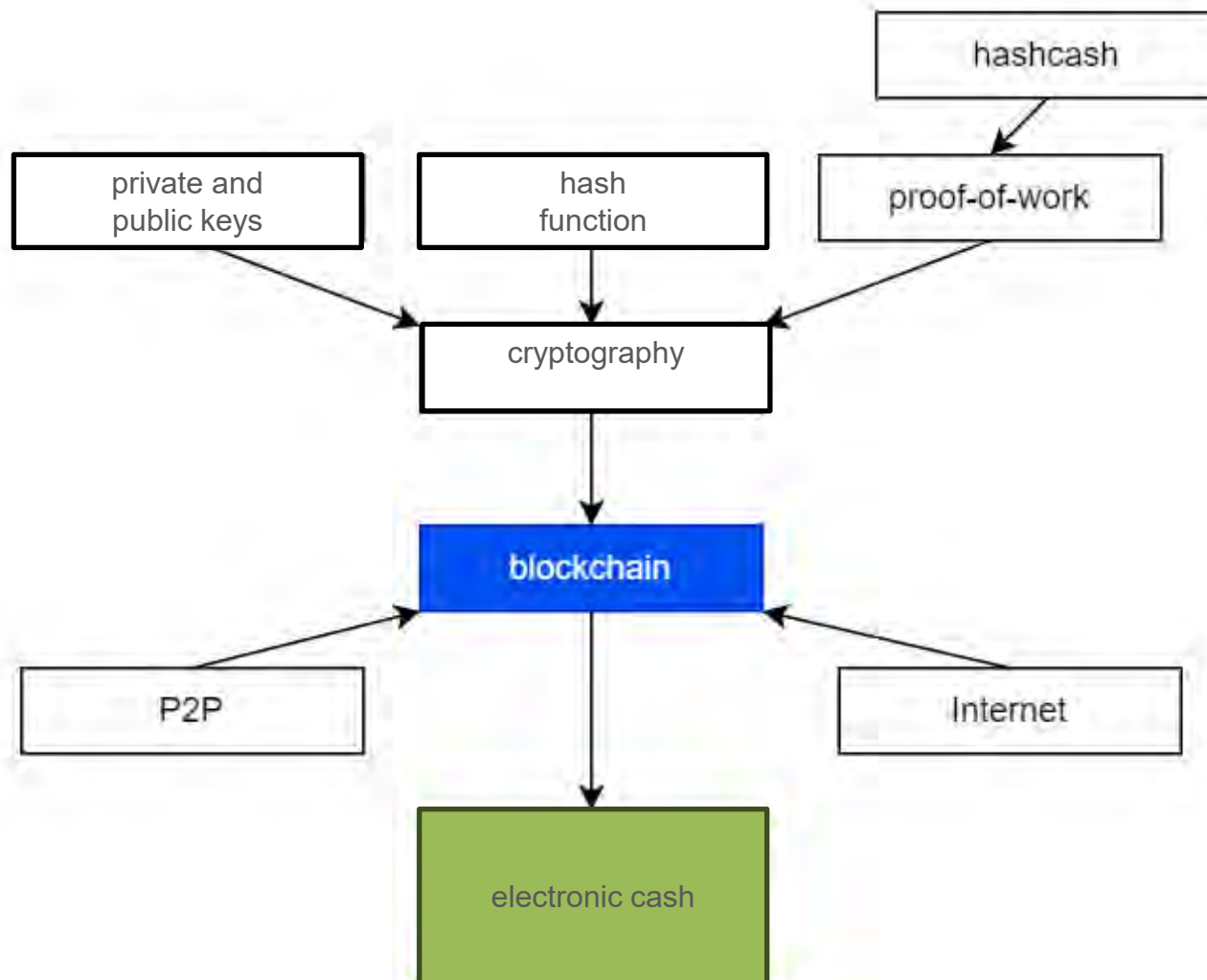
# Blockchain - definition

Blockchain is a distributed database that contains an ever-increasing amount of information (records) grouped into blocks and linked together in such a way that each subsequent block contains a timestamp of when it was created and a link to the previous block, which is an encrypted "summary" (hash) of its contents. Since each transaction block contains a reference to the previous block, it is not possible to change a transaction previously contained in a block without modifying all subsequent blocks.



Blockchain structure: the main chain (black) consists of the longest series of blocks starting from the starting (genesis) block (green) to the current block. Orphan blocks (purple) remain outside the main chain

# Bitcoin - the components of technology



# hashcash



e-mail

I want to deliver a message !

Ok, message delivered!



email server



e-mail

I want to deliver a message !

Ok, but first solve the riddle!

The solution is: XYZ

Ok, message delivered!



email server

# Proof of work

Data + what number will create a hash with X number of zeros at the beginning ?

000

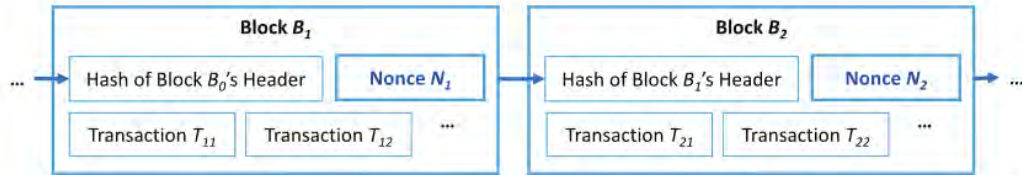
Torun.1839	4127dca93a9adb57f224842443b92184f7f8c96f1344cec7c6692ad9cc008f3e
Torun.1840	9bcaee5ffc35030ef7b1519d15a0d2d91f8efd5b72bf0eff639a069f179af05
Torun.1841	000530cb3ff256f4eaba98ef9265610621ed15fc84e2f7a7fcd8df0a7b70a3bb
Torun.1842	70a95e2f9f41e3a4160d2b63da980656c347381ad8781ccc15bf01b7e83bb117

SBP.22	152094f56f3d725ff0c80b09c2cbef435b314b73e750bb6969286524a2892057
SBP.23	68e1e6a4d86e3c79010fcb09875fdaad362261e3c3d6b09c3dece40f46d01666
SBP.24	a6bef70c36ef4ac4bc0d6bf17ed3e28d836cafb1e42f4de843f9ed3477cc300a
SBP.25	7076f912a4de8282e40dde331bbb94f2a082ae440360d37509bb100bdcb2cf89
SBP.26	0003d5fba8add9871b2a151451b8775ecae286ead13464ae80fa6512eac7c189

0000 > 20,000 attempts no solution

X - level of difficulty

# PoW



Every node starts proof-of-work

Node 1 creates new block B<sub>2</sub>

Node 1

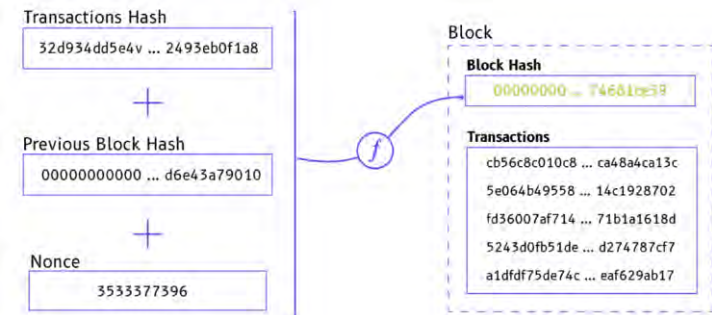
...  
 Nonce  $N_2 = "7C\ 4D\ DB\ 29"$  → Hash of  $B_2$ 's header = **"2D F8** 8E 32 ... 10 9A FE 1C", Failed (time = 10:14:20)  
 Nonce  $N_2 = "7C\ 4D\ DB\ 30"$  → Hash of  $B_2$ 's header = **"41 2A**, B3 DC ... 94 29 AB B5", Failed (time = 10:14:25)  
 Nonce  $N_2 = "7C\ 4D\ DB\ 31"$  → Hash of  $B_2$ 's header = **"00 00** 4F 65 ... 2F ED 31 09", Succeeded (time = 10:14:30)

Node 2

...  
 Nonce  $N_2 = "61\ 0A\ 3F\ 3A"$  → Hash of  $B_2$ 's header = **"A8 C7** 08 C9 ... 3D F1 A2 F9", Failed (time = 10:14:23)  
 Nonce  $N_2 = "61\ 0A\ 3F\ 3B"$  → Hash of  $B_2$ 's header = **"2A E9** 84 66 ... 91 B4 58 CE", Failed (time = 10:14:28)  
 Stopped after identifying that Node 1 has completed proof-of-work at time = 10:14:30

Node 3

...  
 Nonce  $N_2 = "99\ 06\ 10\ 13"$  → Hash of  $B_2$ 's header = **"FB 2F** 26 D9 ... 39 F5 C1 0B", Failed (time = 10:14:21)  
 Nonce  $N_2 = "99\ 06\ 10\ 14"$  → Hash of  $B_2$ 's header = **"E2 1C** 09 05 ... 25 3E AA CF", Failed (time = 10:14:26)  
 Stopped after identifying that Node 1 has completed proof-of-work at time = 10:14:30





# Other consensus mechanisms

Proof of Work,  
Proof of Stake,  
Delegated Proof of Stake,  
Proof of Authority,  
Proof of History,  
Proof of Space,  
Proof of Activity,

I inne.



# hash function

- CRC-16
- CRC-32
- MD2
- MD4
- MD5
- SHA1
- SHA224
- SHA256**
- SHA384
- SHA512
- SHA512/224
- SHA512/256
- SHA3-224
- SHA3-256
- SHA3-384
- SHA3-512
- Keccak-224
- Keccak-256
- Keccak-384
- Keccak-512
- Shake-128
- Shake-256

## SHA256

SHA256 online hash function

Ala has a ~~cat~~

Input type

Hash  Auto Update

a20fd73b94ed68972979a032978577fdc6604ac11bfa3986e9c84cd1157eef5f

## SHA256

SHA256 online hash function

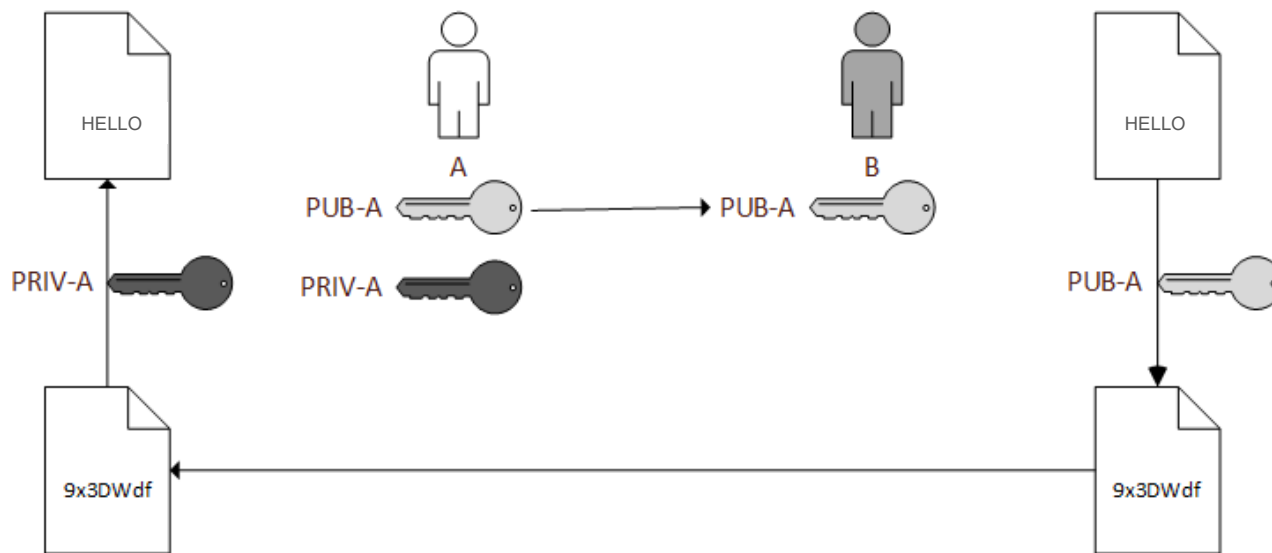
Ala has a ~~cat~~.

Input type

Hash  Auto Update

9117ad67abc0ab7a73ce095f293bb43b6072e31e5f21cfb9e5b0043a32d043a6


# Private and public key



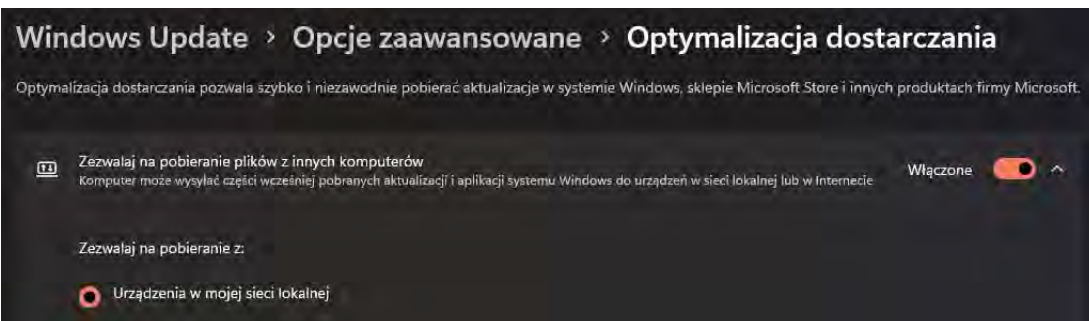
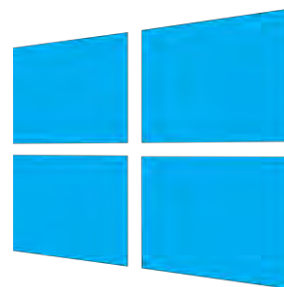
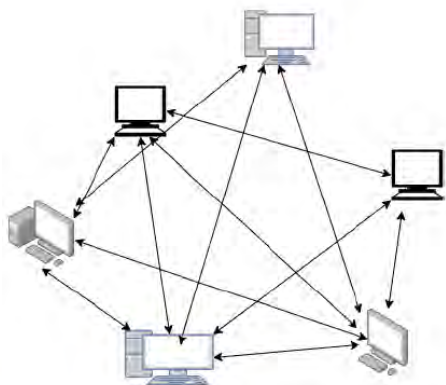


# P2P



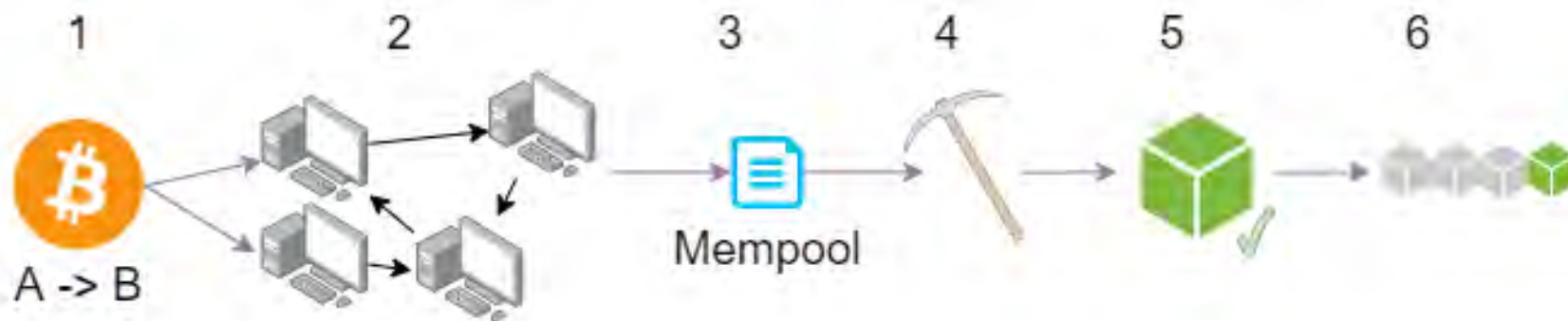
 [torrenty dla 64-bitowego PC \(DVD\)](#), [torrenty dla 32-bitowego PC \(DVD\)](#),

P2P model own development



Windows Update

# Transaction on the blockchain network





**Blok:** # 1

**Nonce:** 16651

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

**Poprzedni:** 0000000000000000000000000000000000000000000000000000000000000000

**Hash:** 0000438d7625b86a6f366545b1929975a0d3ff1f8847e56cc587caddb0ab781

Wykop

**Blok:** # 2

**Nonce:** 215458

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

PLN 10.00	Od: Anders	->	Sophia
PLN 20.00	Od: Anders	->	Lucas
PLN 15.00	Od: Anders	->	Emily
PLN 15.00	Od: Anders	->	Madison

**Poprzedni:** 0000438d7625b86a6f366545b1929975a0d3ff1f8847e56cc587caddb0ab781

**Hash:** 0000baeab68c2a60f9a6fa56355438d97c672a15494fcea617064d9314f9ff63

Wykop

**Blok:** # 3

**Nonce:** 146

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

PLN 10.00	Od: Emily	->	Jackson
PLN 5.00	Od: Madison	->	Jackson
PLN 20.00	Od: Lucas	->	Grace

**Poprzedni:** 0000baeab68c2a60f9a6fa56355438d97c672a15494fcea617064d9314f9ff63

**Hash:** 0000df1d632b734f5a5fc126a0f0e8894fb4c8314ba7086b62980559af6771b9

Wykop

**Blok:** # 1

**Nonce:** 16651

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

**Poprzedni:** 0000000000000000000000000000000000000000000000000000000000000000

**Hash:** 0000438d7625b86ae6f366545b1929975a0d3ff1f8847e56cc587caddb0ab781

Wykop

**Blok:** # 2

**Nonce:** 215458

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

PLN 11.00	Od: Anders	->	Sophia
PLN 20.00	Od: Anders	->	Lucas
PLN 15.00	Od: Anders	->	Emily
PLN 15.00	Od: Anders	->	Madison

**Poprzedni:** 0000438d7625b86ae6f366545b1929975a0d3ff1f8847e56cc587caddb0ab781

**Hash:** d6947b947cd3467c7c6324c96b117db574398a11b638d1f0dd58bc57bb724053

Wykop

**Blok:** # 3

**Nonce:** 146

**Coinbase:** PLN 100.00 -> Anders

**Transakcje:**

PLN 10.00	Od: Emily	->	Jackson
PLN 5.00	Od: Madison	->	Jackson
PLN 20.00	Od: Lucas	->	Grace

**Poprzedni:** d6947b947cd3467c7c6324c96b117db574398a11b638d1f0dd58bc57bb724053

**Hash:** 5c39d4ef49df6e6c657501d6b57845afefb886a311cb77c5f658cbe604a533bb

Wykop

Klient A

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:   
 Programy:   
 Hasła:

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

PLN 10.00	OC	Indyca	→	Indyca
PLN 20.00	OC	Indyca	→	Litwa
PLN 15.00	OC	Indyca	→	Indyca
PLN 15.00	OC	Indyca	→	Indyca

 Programy:   
 Hasła:

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

PLN 10.00	OC	Indyca
PLN 20.00	OC	Indyca
PLN 20.00	OC	Litwa

 Programy:   
 Hasła:

Klient B

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:   
 Programy:   
 Hasła:

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

PLN 10.00	OC	Indyca	→	Indyca
PLN 20.00	OC	Indyca	→	Litwa
PLN 15.00	OC	Indyca	→	Indyca
PLN 15.00	OC	Indyca	→	Indyca

 Programy:   
 Hasła:

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

PLN 10.00	OC	Indyca
PLN 20.00	OC	Indyca
PLN 20.00	OC	Litwa

 Programy:   
 Hasła:

Klient C

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:   
 Programy:   
 Hasła:

Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

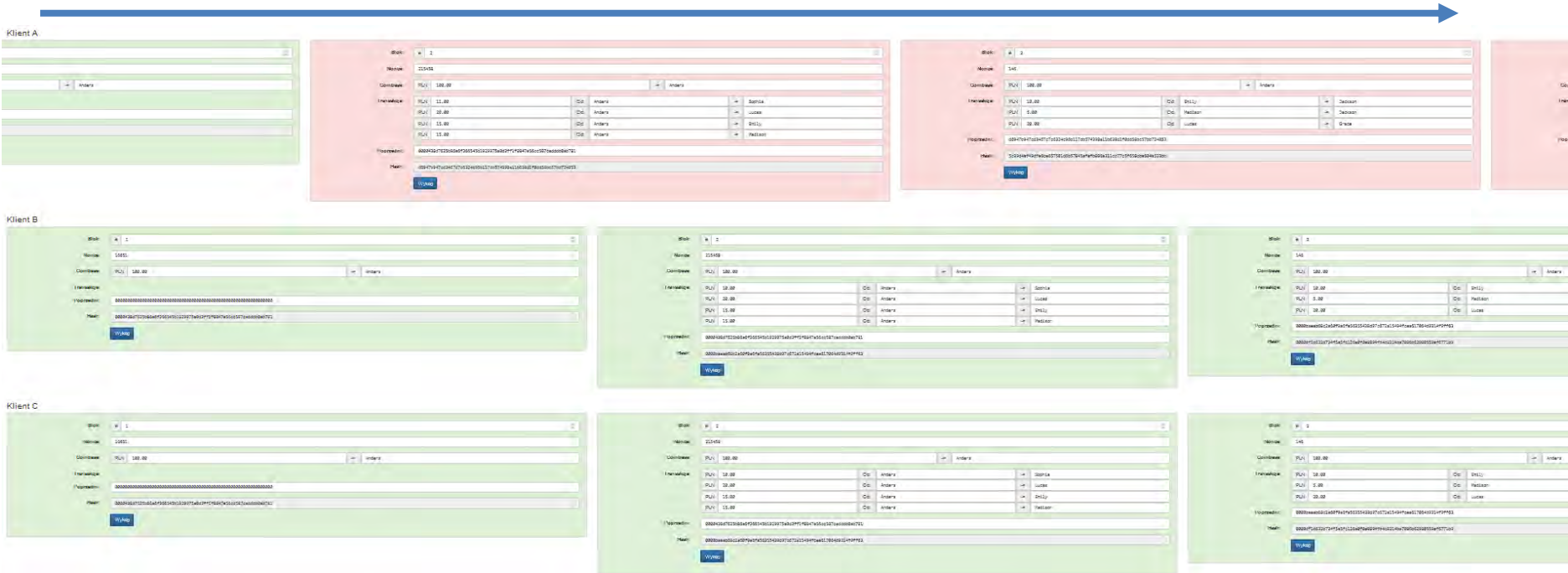
PLN 10.00	OC	Indyca	→	Indyca
PLN 20.00	OC	Indyca	→	Litwa
PLN 15.00	OC	Indyca	→	Indyca
PLN 15.00	OC	Indyca	→	Indyca

 Programy:   
 Hasła:

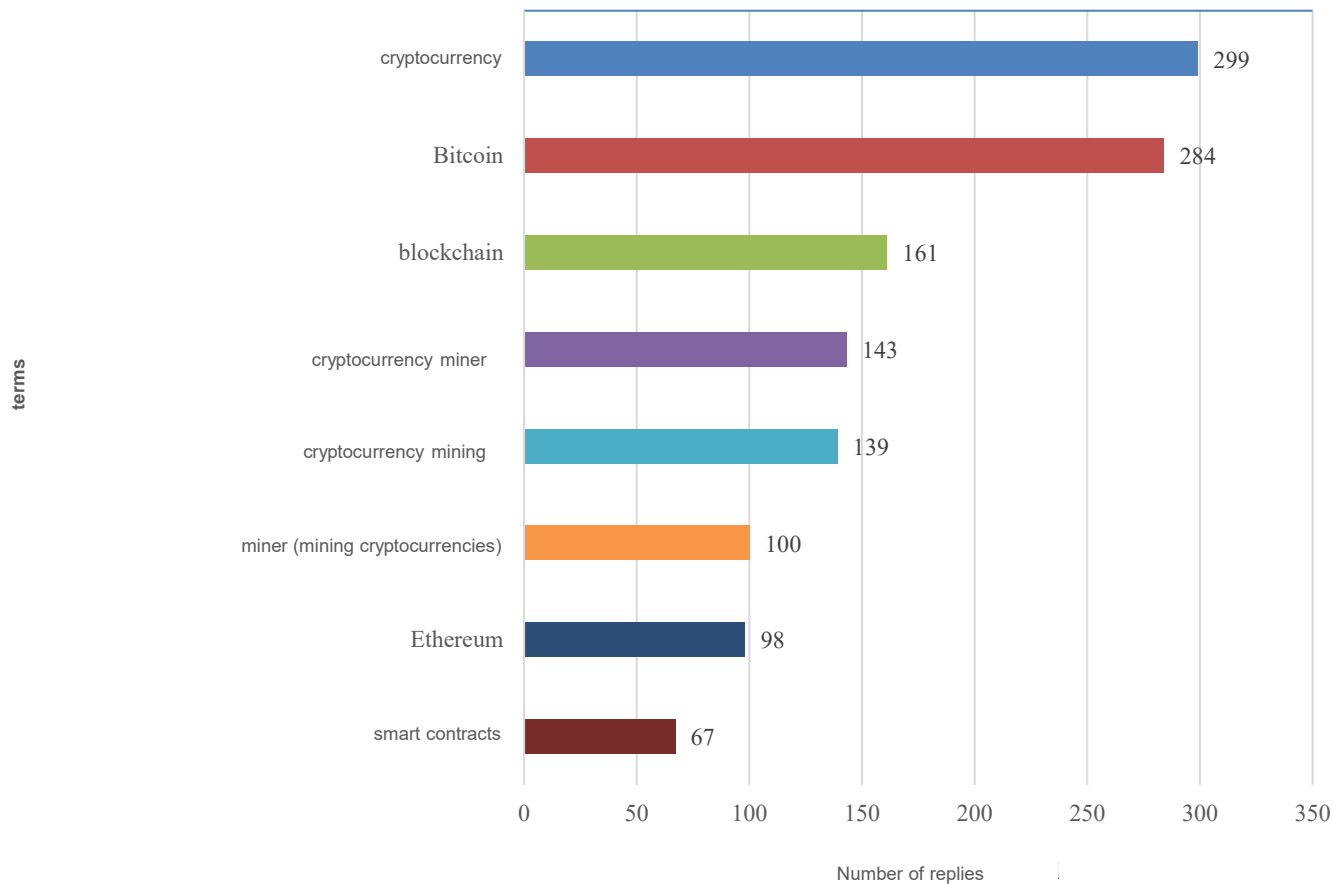
Blok:   
 Nazwa:   
 Kontakt: PLN 100.00  
 Terminy:
 

PLN 10.00	OC	Indyca
PLN 20.00	OC	Indyca
PLN 20.00	OC	Litwa

 Programy:   
 Hasła:

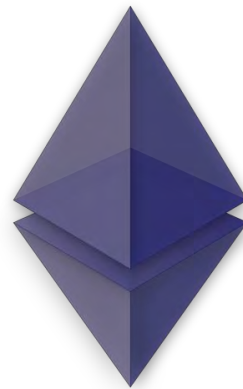


# Recognition of definitions





# Cryptocurrency










# Cryptocurrency

Waluty: ~180

Kryptowaluty: ~22 111 (2022r.)

Waluta	Symbol waluty	Kurs średni	Zmiana
bat (Tajlandia)	THB	0,1166	+0,69
dolar amerykański	USD	4,1285	+0,46
dolar australijski	AUD	2,6416	+0,51
dolar hongkoński	HKD	0,5272	+0,44
dolar kanadyjski	CAD	3,0487	+0,36
dolar nowozelandzki	NZD	2,4456	+0,38
dolar singapurski	SGD	3,0403	+0,75
euro	EUR	4,4869	+0,42
forint węgierski	HUF	1,1687	+1,37
frank szwajcarski	CHF	4,6897	+0,36
funt szterling	GBP	5,2515	+0,53
hrywna ukraińska	UAH	0,1118	+0,45
jen japoński	JPY	2,8360	+0,93
korona czeska	CZK	0,1866	+0,65
korona duńska	DKK	0,6021	+0,42
korona islandzka	ISK	3,1224	+0,70
korona norweska	NOK	0,3888	+0,44

#	Nazwa	Symbol	Cena (USD)	Kap.	Wol. (24h)
1	 Bitcoin	BTC	26.081,0	507,27B \$	11,51B \$
2	 Ethereum	ETH	1.673,01	200,95B \$	5,14B \$
3	 Tether	USDT	1,0003	82,83B \$	18,88B \$
4	 BNB	BNB	216,5	33,30B \$	480,09M \$
5	 XRP	XRP	0,51792	27,32B \$	1,08B \$
6	 USD Coin	USDC	1,0002	25,98B \$	2,69B \$
7	 Cardano	ADA	0,2691	9,40B \$	147,48M \$
8	 Dogecoin	DOGE	0,063527	8,93B \$	263,42M \$
9	 Solana	SOL	21,808	8,88B \$	253,63M \$
10	 TRON	TRX	0,073981	6,61B \$	146,08M \$

# crypto - currency



Salvador 2021



Central African Republic (RCA) 2022

# Digger



1770 Gh

ANTMINER



BITMAIN  
D9

#OnlyBestMiners





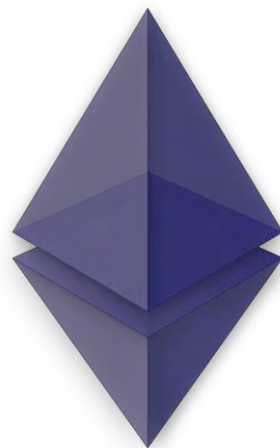
# Cryptocurrency mining / Miner

```
20191015 14:31:39 [ OK ] 1/1 - 181.02 MH/s, 43ms
20191015 14:31:53 [ OK ] 2/2 - 220.63 MH/s, 43ms
20191015 14:32:00 [ OK ] 3/3 - 220.51 MH/s, 43ms
20191015 14:32:00 [ OK ] 4/4 - 220.54 MH/s, 43ms
20191015 14:32:18 [ OK ] 5/5 - 220.04 MH/s, 43ms
20191015 14:32:18 GPU #0: MSI GTX 1070 - 27.28 MH/s, [T:66C, P:121W, F:41%, E:237kH/W]
20191015 14:32:18 GPU #1: MSI GTX 1070 - 27.28 MH/s, [T:65C, P: 92W, F:47%, E:257kH/W]
20191015 14:32:18 GPU #2: MSI GTX 1070 - 27.06 MH/s, [T:65C, P: 88W, F:42%, E:276kH/W]
20191015 14:32:18 GPU #3: MSI GTX 1070 - 27.77 MH/s, [T:65C, P: 70W, F:61%, E:267kH/W]
20191015 14:32:18 GPU #4: MSI GTX 1070 - 28.09 MH/s, [T:65C, P:113W, F:43%, E:253kH/W]
20191015 14:32:18 GPU #5: MSI GTX 1070 - 26.94 MH/s, [T:64C, P:119W, F:32%, E:249kH/W]
20191015 14:32:18 GPU #6: MSI GTX 1070 - 27.66 MH/s, [T:64C, P:118W, F:46%, E:258kH/W]
20191015 14:32:18 GPU #7: MSI GTX 1070 - 27.96 MH/s, [T:64C, P:121W, F:53%, E:252kH/W]
20191015 14:32:18 Shares/min: 6.202 (Avr. 2.497), Avr.Power: 860W, Avr.Efficiency: 256kH/W
20191015 14:32:18 Uptime: 2 mins | Algo: x16rv2 | T-Rex v0.14.5
20191015 14:32:39 [ OK ] 6/6 - 219.91 MH/s, 43ms
20191015 14:33:13 [ OK ] 7/7 - 220.48 MH/s, 43ms
20191015 14:33:18 [ OK ] 8/8 - 220.56 MH/s, 43ms
20191015 14:33:20 x16rv2 block 927399, diff 142130.209
20191015 14:33:20 Hash order 6D2A830E8D820CD4
20191015 14:33:20 TigLufShbGroEchShvJh581kWr1Shv5hbShvGro81kFug5hbTigKck
20191015 14:33:51 [ OK ] 9/9 - 153.81 MH/s, 43ms
20191015 14:34:07 [ OK ] 10/10 - 142.25 MH/s, 43ms
20191015 14:34:07 GPU #0: MSI GTX 1070 - 17.62 MH/s, [T:66C, P:117W, F:41%, E:168kH/W]
20191015 14:34:07 GPU #1: MSI GTX 1070 - 17.60 MH/s, [T:65C, P:116W, F:47%, E:157kH/W]
20191015 14:34:07 GPU #2: MSI GTX 1070 - 17.58 MH/s, [T:66C, P:121W, F:42%, E:149kH/W]
20191015 14:34:07 GPU #3: MSI GTX 1070 - 18.01 MH/s, [T:65C, P:118W, F:60%, E:154kH/W]
20191015 14:34:07 GPU #4: MSI GTX 1070 - 18.07 MH/s, [T:65C, P:118W, F:43%, E:154kH/W]
20191015 14:34:07 GPU #5: MSI GTX 1070 - 17.39 MH/s, [T:67C, P:118W, F:32%, E:150kH/W]
20191015 14:34:07 GPU #6: MSI GTX 1070 - 17.91 MH/s, [T:66C, P:116W, F:46%, E:152kH/W]
20191015 14:34:07 GPU #7: MSI GTX 1070 - 18.06 MH/s, [T:65C, P:122W, F:52%, E:163kH/W]
20191015 14:34:07 Shares/min: 3.654 (Avr. 2.618), Avr.Power: 914W, Avr.Efficiency: 156kH/W
20191015 14:34:07 Uptime: 3 mins 49 secs | Algo: x16rv2 | T-Rex v0.14.5
```



```
t-rex.exe -a ethash -o stratum+tcp://eu1.ethermine.org:4444 -u
0x0[redacted]309c[redacted]CDdE95[redacted] -p x -w rig0
pause
```

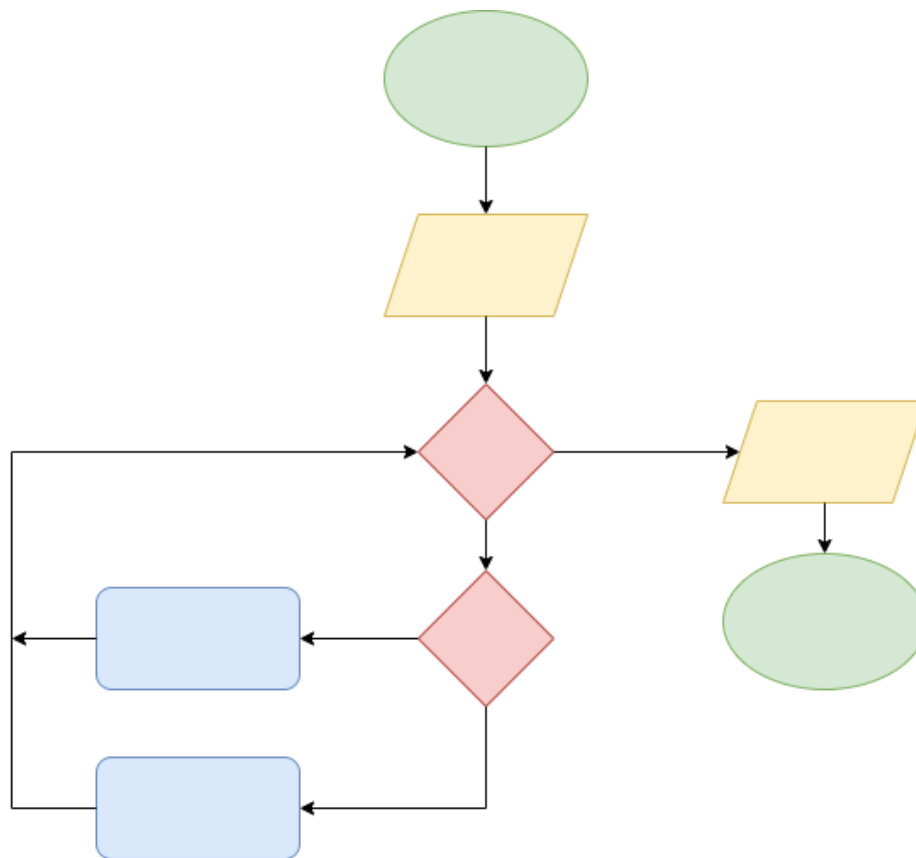
# Ethereum / Smart Contracts



## Ethereum VS Bitcoin



# Smart Contract





# CryptoKitties

Collect and breed furrever friends!

"GTA creator releases game on Ethereum blockchain".  
[Take-Two Interactive Software]  
16.08.2023

# Applications



# Censorship / Data Storage

0x2d6a7b0f6adef38423d4c62cd8b6ccb708ddad85da5d3d06756ad4d8a04a6a2

From: [0x44938B01DA1fEB3f6fa1cf38870EE564e25D9Bf3](#)

To: [0x44938B01DA1fEB3f6fa1cf38870EE564e25D9Bf3](#)

Value: **0 ETH** (\$0.00)

Transaction Fee: **0.0007787 ETH** **\$1.30**

Gas Price: **1.3 Gwei** (0.0000000013 ETH)

Ether Price: **\$644.13 / ETH**

Gas Limit & Usage by Txn: **800,000** | **599,000 (74.88%)**

Other Attributes: **Nonce: 0** **Position In Block: 107**

Input Data: `0x3c5554462d383e0a50656b696e6720556e697665727369747920746561636865727320616e6420636c6173736d617465733a0a486f772061726520796f75210a4920616d205975656c756f2066726f6d20746865203230313420466f726569676e204c616e67756167657320496e737469747574652e204920776173206f6e65206f66207468652065696768742073747564656e74732077686f207375626d69747465642074686520e2809c496e666f726d6174696f6e20446973636c6f73757265204170706c69636174696f6e20466f726de2809d20746f2050656b696e6720556e6976657273697479206f6e20`

[View Input As](#) ▾

View Input As ▾

Default View

UTF-8

### Other Attributes:

Nonce: 0

Position In Block: 107

### Input Data:

```
0x3c5554462d383e0a50656b696e6720556e6976657273697479207465616368  
65727320616e6420636c6173736d617465733a0a486f772061726520796f7521  
0a4920616d205975656c756f2066726f6d20746865203230313420466f726569  
676e204c616e67756167657320496e737469747574652e204920776173206f6e  
65206f66207468652065696768742073747564656e74732077686f207375626d  
69747465642074686520e2809c496e666f726d6174696f6e20446973636c6f73  
757265204170706c69636174696f6e20466f726de2809d20746f2050656b696e  
6720556e6976657273697479206f6e20746865206d6f726e696e67206f662041  
7072696c20392e20492064726167676564206d7920746972656420626f647920  
616e642077726f74652074686973207465787420746f20696c6c757374726174  
6520736f6d65206f6620746865207468696e6773207468617420686176652068  
617070656e656420746f206d6520726563656e746c792e0a6f6e650a41667465  
7220417072696c203974682c20492077617320636f6e7374616e746c7920696e  
74657276696577656420627920666163756c7479206d656d6265727320616e64
```

View Input As ▾

### Other Attributes:

Nonce: 0

Position In Block: 107

### Input Data:

<UTF-8>

Peking University teachers and classmates:

How are you!

I am Yueluo from the 2014 Foreign Languages Institute. I was one of the eight students who submitted the "Information Disclosure Application Form" to Peking University on the morning of April 9. I dragged my tired body and wrote this text to illustrate some of the things that have happened to me recently.

one

After April 9th, I was constantly interviewed by faculty members and leaders of the college, and it continued twice until midnight or even two. During the conversation, the student teacher repeatedly mentioned "Can you graduate successfully," "Do what your mother and grandmother do," and "Student teacher has the right not to contact you directly by your parents."

While I was preparing my graduation thesis recently, frequent interruptions and subsequent psychological pressures severely

View Input As ▾



0xb1ed364e4333aae1da4a901d5231244ba6a35f9421d4607f7cb90d60bf45578a

Overview State Comments More ▾

Transaction Hash:	0xb1ed364e4333aae1da4a901d5231244ba6a35f9421d4607f7cb90d60bf45578a <a href="#">🔗</a>
Status:	<span>Success</span>
Block:	<span>6007493</span> <span>12049886 Block Confirmations</span>
Timestamp:	🕒 1869 days 14 hrs ago (Jul-22-2018 02:49:54 AM +UTC)
Transaction Action:	<p>▶ <b>IDM:</b> 2001 年, 东北一家国有疫苗公司悄无声息进行改制。多年后再回首, 人们才明白其中意义。那年的 9 月 18 日, 上市公司长春高新旗下的长生生物迎来了两位新的股东——韩刚君和杜伟民。</p> <p>韩刚君用 1932 万元买下了长生生物 30% 的股权, 成为第二大股东; 他和杜伟民的合资公司则成为了长生的小股东。</p> <p>杜伟民是长生生物的销售总监。</p> <p>这笔交易几乎没人注意到。长生生物被放到聚光灯下, 是在两年后了。</p> <p>2003 年末, 长春高新和长生生物的掌门人高俊芳把 2000 万打进公司账户, 要将长生生物私有化。</p> <p><a href="#">🗨️ Read Chat</a> <span>2</span></p>



# High fees for posting larger documents / photos \*



Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. Aenean nec lorem. In porttitor. Donec laoreet nonummy augue. Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut nonummy. Fusce aliquet pede non pede. Suspendisse dapibus lorem pellentesque magna. Integer nulla. Donec blandit feugiat ligula. Donec hendrerit, felis et imperdiet euismod, purus ipsum pretium metus, in lacinia nulla nisl eget sapien. Donec ut est in lectus consequat consequat. Etiam eget dui. Aliquam erat volutpat. Sed at lorem in nunc porta tristique. Proin

Txt ~95p.

Txt ~3p.

**Transaction fee**

120,39 \$ → 15 min 0.072006 ETH

Total: 0.072006 ETH

Not enough ETH to cover network fee. Buy more ETH

[How are fees determined?](#)

**Advanced** Gas Limit & Data

⚠ For advanced users only

Please don't edit these fields unless you are an expert user & know what you're doing. Entering the wrong information could result in your transaction failing or getting stuck.

Reset to default: 4,208,568

Gas Limit (usually ranges from 21,000 to 500,000)

4208568

Add Data

02870EB652185C5100BC122622B01F0056AEF5C2121F1B2AE27B8F2FBE74EB2E8BAF95

**Transaction fee**

218,71 \$ → 15 min 0.130477 ETH

Not enough ETH to cover network fee. Buy more ETH

**Transaction fee**

10,03 \$ → 15 min 0.005986 ETH

[How are fees determined?](#)

# Akord.com / Arweave

The image shows three pricing cards for Akord.com storage. The 'Boost' card is highlighted as 'POPULAR'.

Plan	Storage	Price	Payment Type
Bump	1 GB	\$6.5	One-off payment
Boost (Popular)	10 GB	\$58.5	One-off payment
Bulk	50 GB	\$276	One-off payment

## Arweave Fees

Welcome to the permaweb! This calculator provides the approximate real-time cost to store data permanently on Arweave.

Per KB	Per MB	Per GB	Per TB
0.00021202 AR ~\$0.0009541 USD 212017846 Winston	0.0008404 AR ~\$0.004 USD 840377014 Winston	0.85792 AR ~\$3.861 USD 857922282166 Winston	878.51 AR ~\$3,953.29 USD 878549793157814 Winston

### Storage Fee Calculator

10 MB

Calculate

### Approximate Cost\*

Data Size	10 MB
Arweave	0.00838068703 AR
Winston	8380687030 Winston
USD	~\$0.037713091635 USD

\*Fees are dynamic. Pricing is determined by the network.



peepeth.com



Bringing out our best with opinionated features and permanence.

#### Open

Content is stored on the [blockchain](#), ensuring access and giving you control.

#### Thoughtful

Novel features encourage mindful engagement.

#### Responsible

[Charity badges](#) prevent suffering. 1922 mosquito nets purchased so far.

- Powered by the blockchain 
  - Data is open, decentralized, and immutable because it's saved to the Ethereum blockchain and IPFS. Anyone can make an alternative Peepeth reader/writer.

mirror.xyz

## The home for web3 publishing

Built on web3 for web3, Mirror's robust publishing platform pushes the boundaries of writing online—whether it's the next big white paper or a weekly community update.



 indorse



# Banking

Access to online payments in technologically excluded countries



Alior Bank is the first bank in Poland to use public blockchain [17.06.2019].



PKO Bank Polski has implemented sustainable carrier 2.0 [27.10.2020].



Bank Polski

# Public administration



KSI Blockchain



Estonia



GLOBAL PASSPORT PROJECT





Poland's first Blockchain-based voting app.

**iVoting Business**

voting in capital companies

**iVoting University**

voting at universities

**iVoting Public Opinion**

polling and surveys

**iVoting NGO**

voting in the non-governmental sector

**iVoting GOV**

voting in local governments and state institutions

# Logistics

**Walmart** 

*Coca-Cola*

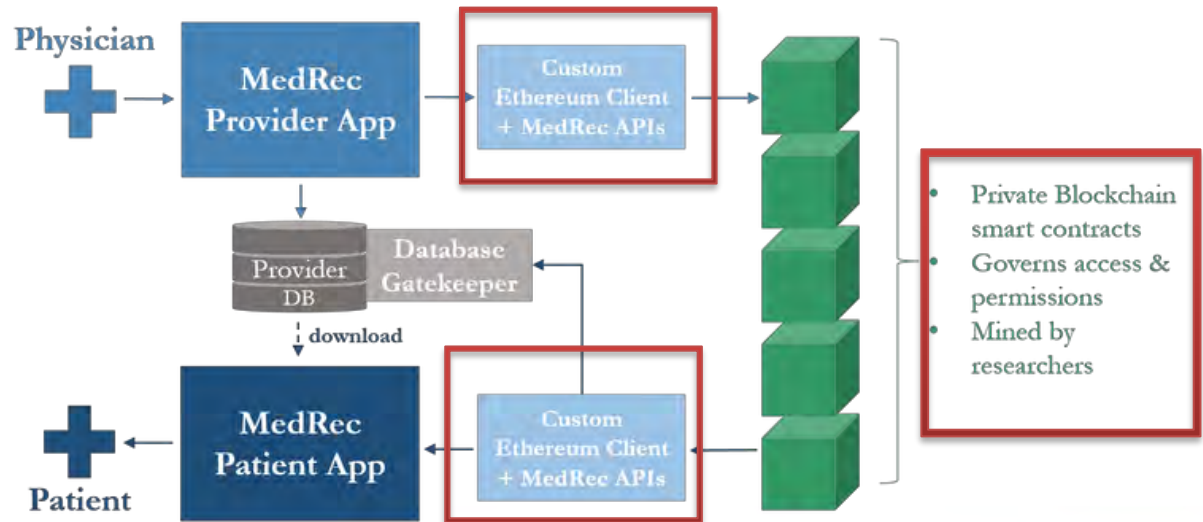


# Health care

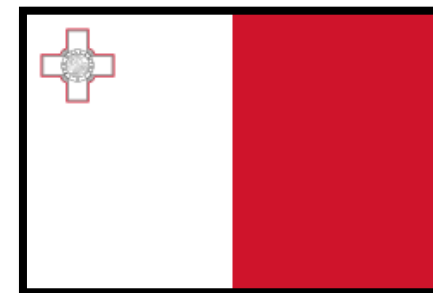


Blockchain HIE

## MedRec



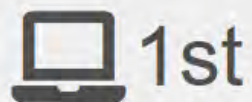
# Education



Malta



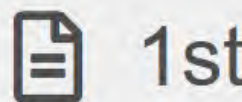
in the World in  
Blockchain  
Education



University in the World  
to Offer a Blockchain  
Course



University in the World  
to Offer a Degree in  
Blockchain



to Write Academic  
Certificates to the  
Blockchain

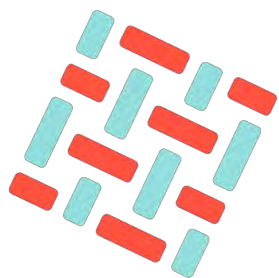


University to Accept  
Bitcoin for Tuition  
Payments

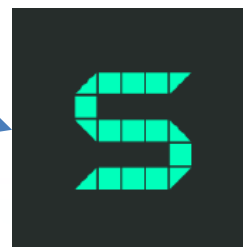
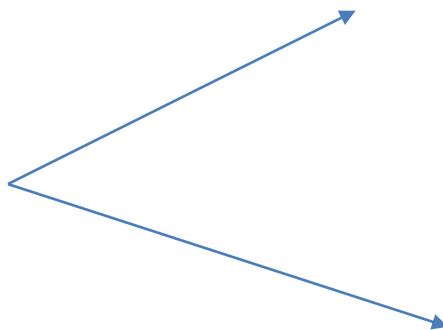


University to Graduate  
Students from a  
Blockchain Program

# Custom blockchain

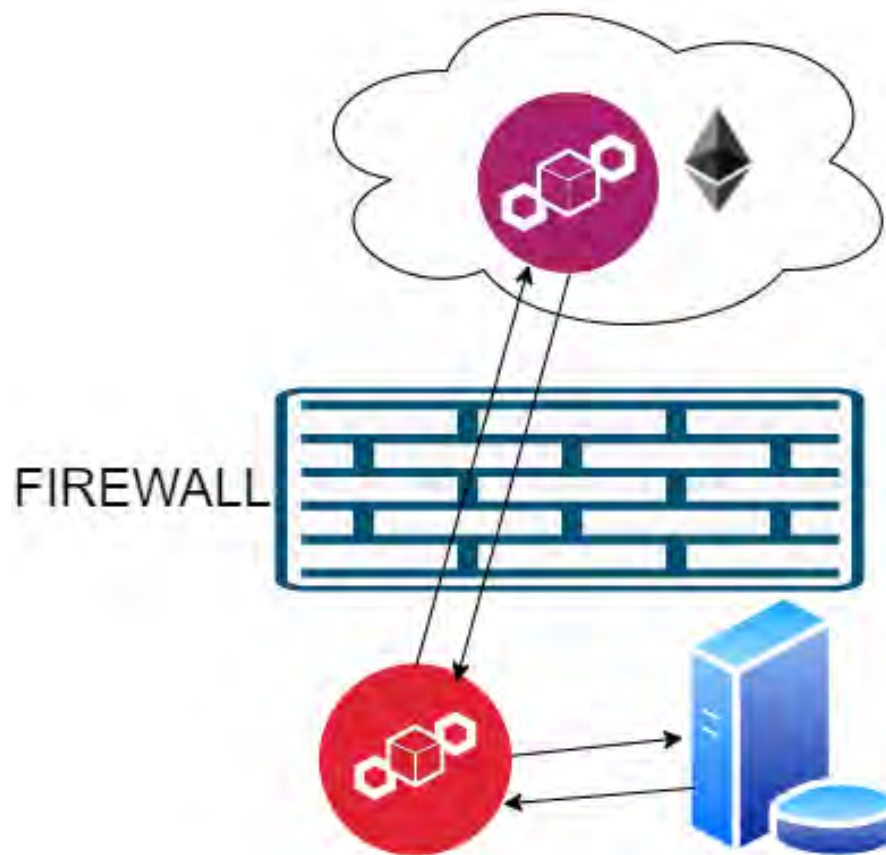


**HYPERLEDGER**  
**FABRIC**



# Public / Private Hybrid

**INTERNET**





# Blockchain for libraries

- data storage,
- Management of licensing agreements and digital rights,
- Supporting science communication and open science,
- metadata management,
- Data, collections and collections management,
- managing the rental process,
- user support,
- organization and certification of training.



DRM



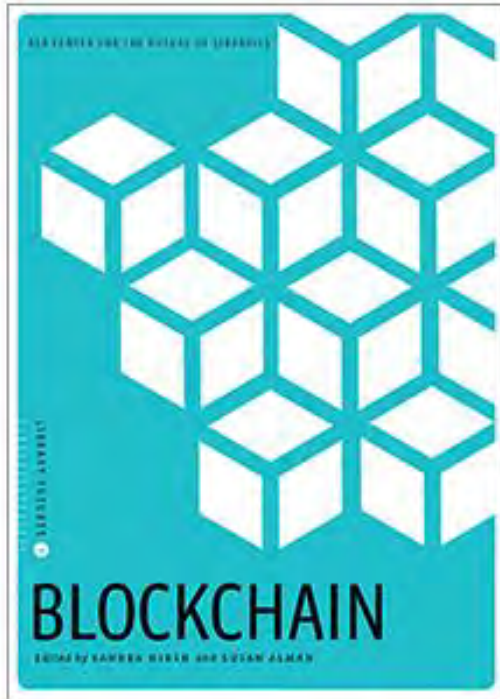
# Advantages and disadvantages



- immutability,
- non-repudiation,
- cryptography,
- consensus mechanisms,
- forgery resistant,
- huge potential for implementation,
- open source,
- public audit,
- data security.

- RODO
- consumption of high-carbon electricity
- Laws restricting / prohibiting the use of cryptocurrencies
- responsibility for accessing funds rests with the wallet owner
- errors in smart contracts - attacks or unplanned consumption of funds





- 1) Install the wallet on your computer and create a new Bitcoin address,
- 2) Buy Bitcoin for \$5,
- 3) Send funds from the exchange / exchange to your wallet,
- 4) Install a mobile wallet on your smartphone,
- 5) Transfer funds from your computer to your smartphone,
- 6) Create a "paper wallet",
- 7) Send some funds to your "paper wallet",
- 8) See the balance of your accounts using blockchain explorer,
- 9) Backup your private keys,
- 10) Buy goods and services from merchants who accept cryptocurrencies.

# Setting up an account - traditional bank

- Going to the bank with an identity document

## Otwórz konto na selfie

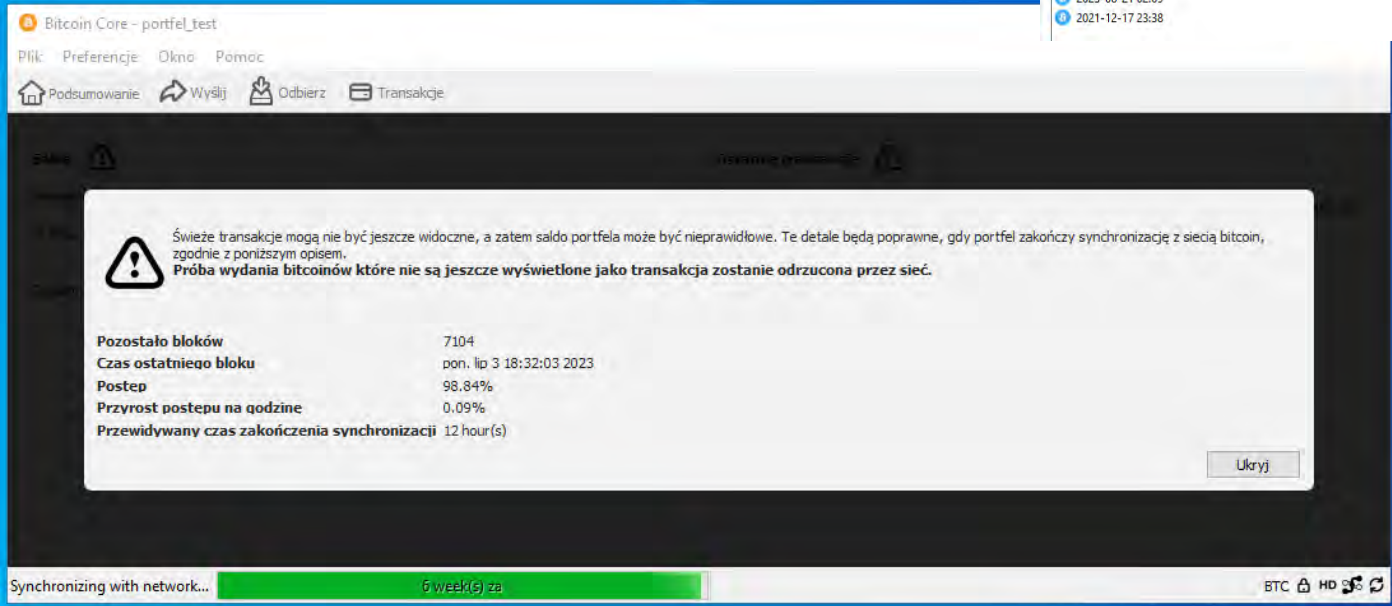
1. Pobierz i uruchom aplikację **IKO**, a następnie wybierz **Otwórz konto na selfie**.
2. Podaj dane kontaktowe, udziel odpowiednie zgody oraz wybierz rodzaj konta i kartę płatniczą.
3. Zrób zdjęcia swojego dowodu osobistego i twarzy, sprawdź poprawność danych, wskaż adres zamieszkania, zaakceptuj oświadczenia i złoż wniosek. Podpisz umowę online i korzystaj ze swojego konta! Niektóre funkcje np. e-Urząd będą wymagały dodatkowego potwierdzenia tożsamości w oddziale.



# Wallet



# Bitcoin Wallet



# Ethereum Wallet

## Holding the keys to your digital future

Wallets help you access your digital assets and sign in to applications.

Find a wallet

The screenshot shows the 'Find a wallet' interface. On the left, there are 'Profile filters' and 'Feature filters (0)'. The 'Profile filters' section includes three categories: 'New to crypto' (for first-time users), 'NFTs' (for users interested in NFTs), and 'Hodler' (for users who don't want to touch their tokens). Each category lists specific features like 'Connect to dapps', 'Layer 2', 'ENS support', 'Token support', 'Buy crypto', and 'Fee optimization'. The 'Feature filters' section is currently empty. The main area shows a list of 51 wallets, with the first six visible: Coin wallet, Bitkeep, Ledger, Coinbase Wallet, AirGap wallet, and Argent. Each wallet entry includes its logo, supported platforms (e.g., iOS, Android, Linux, Windows, macOS), and a grid of feature support indicators (green checkmarks for supported, red X for not supported).

Wallet	Buy crypto	Self custody	Layer 2
Coin wallet	✓	✓	✗
Bitkeep	✗	✓	✓
Ledger	✓	✓	✗
Coinbase Wallet	✓	✓	✓
AirGap wallet	✗	✓	✗
Argent	✓	✓	✓

# Desktop Wallet

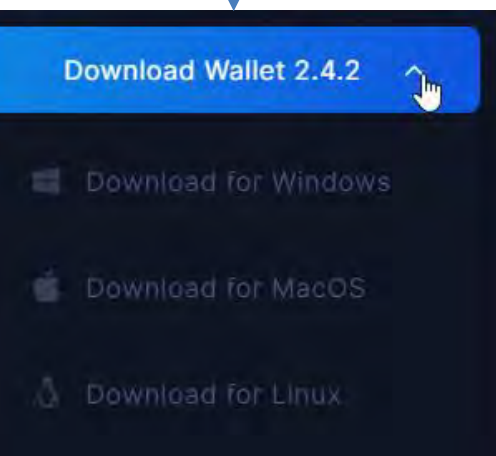
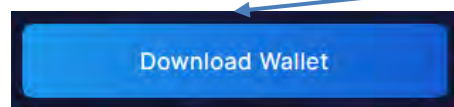


infinitywallet.io

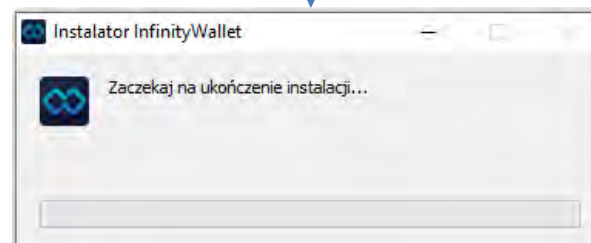
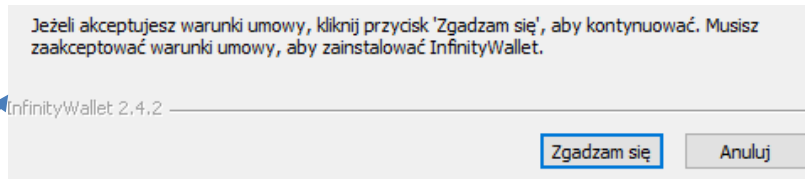
https://infinitywallet.io · Tłumaczenie strony

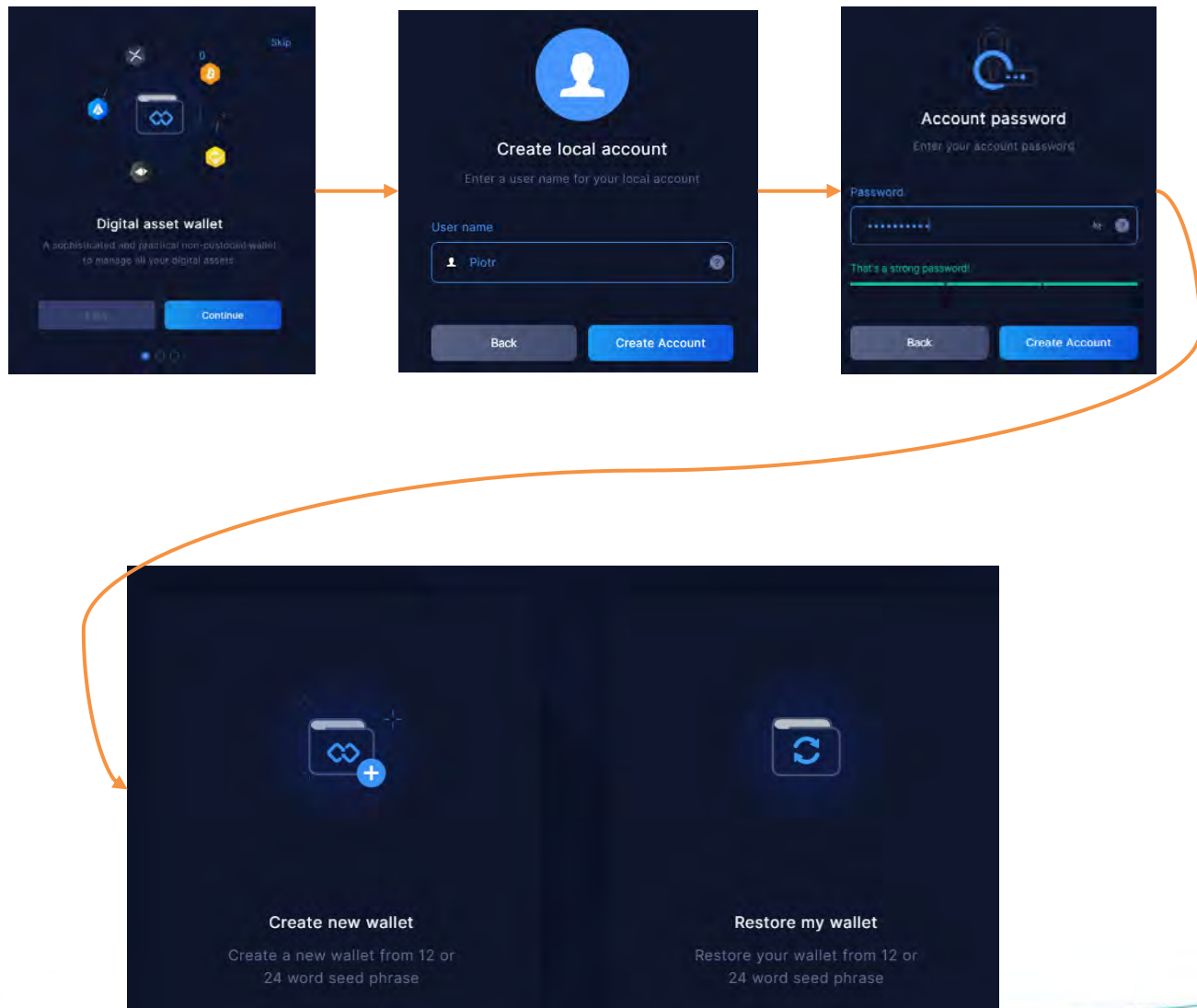
## Infinity Wallet: The Best Crypto Wallet for Desktop & Mobile

The **Infinity Wallet** is a leading cryptocurrency wallet, designed to provide easy & secure access to manage and exchange hundreds of digital assets like ...



 InfinityWallet-Setup-2.4.2







**Name your wallet**  
Give your wallet a nice name

Wallet name

lk

Back Continue

**Create wallet PIN (optional)**  
PIN can be used to confirm wallet transactions.  
You can enable PIN later in security settings


1 2 3  
4 5 6  
7 8 9  
⌫ 0 ✓

Back Confirm wallet PIN

Skip this step

**12**  
12 word seed  
Create your wallet from 12 word seed phrase

**24**  
24 word seed  
Create your wallet from 24 word seed phrase



### Backup your wallet

In the next step you will see 12 recovery words. This is the only way to recover your wallet if you lose it!

I understand that if I lose my recovery words I will not be able to access my wallet

[Generate 12 word seed](#)

### Save your backup phrase

Write down these 12 words in order. Remember - keep them somewhere safe!

1	brain	2		3	little	4	
5		6		7		8	
9		10		11		12	


Click on a word to reroll it. You have 6 tries left.

### Confirm your backup phrase

Please re-enter your 12 word backup phrase.

4		7		8		11	
[ ]							

[Create wallet](#)



### Wallet created!

Your wallet has been successfully created. Thank you for using InfinityWallet!

[Continue to wallet](#)

Infinity Wallet

IK  
0.00 USD

+





🔔

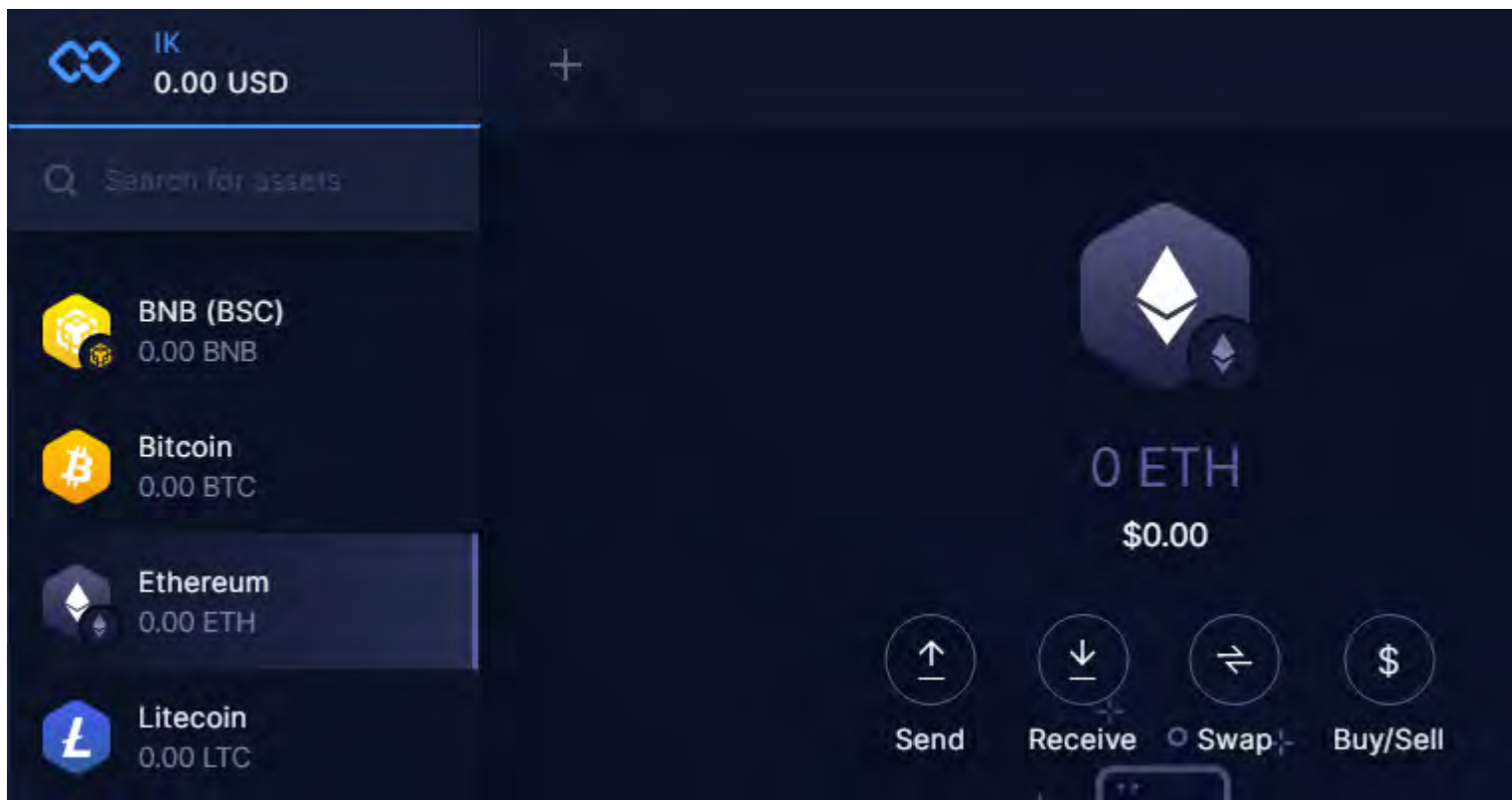
👤 Piotr

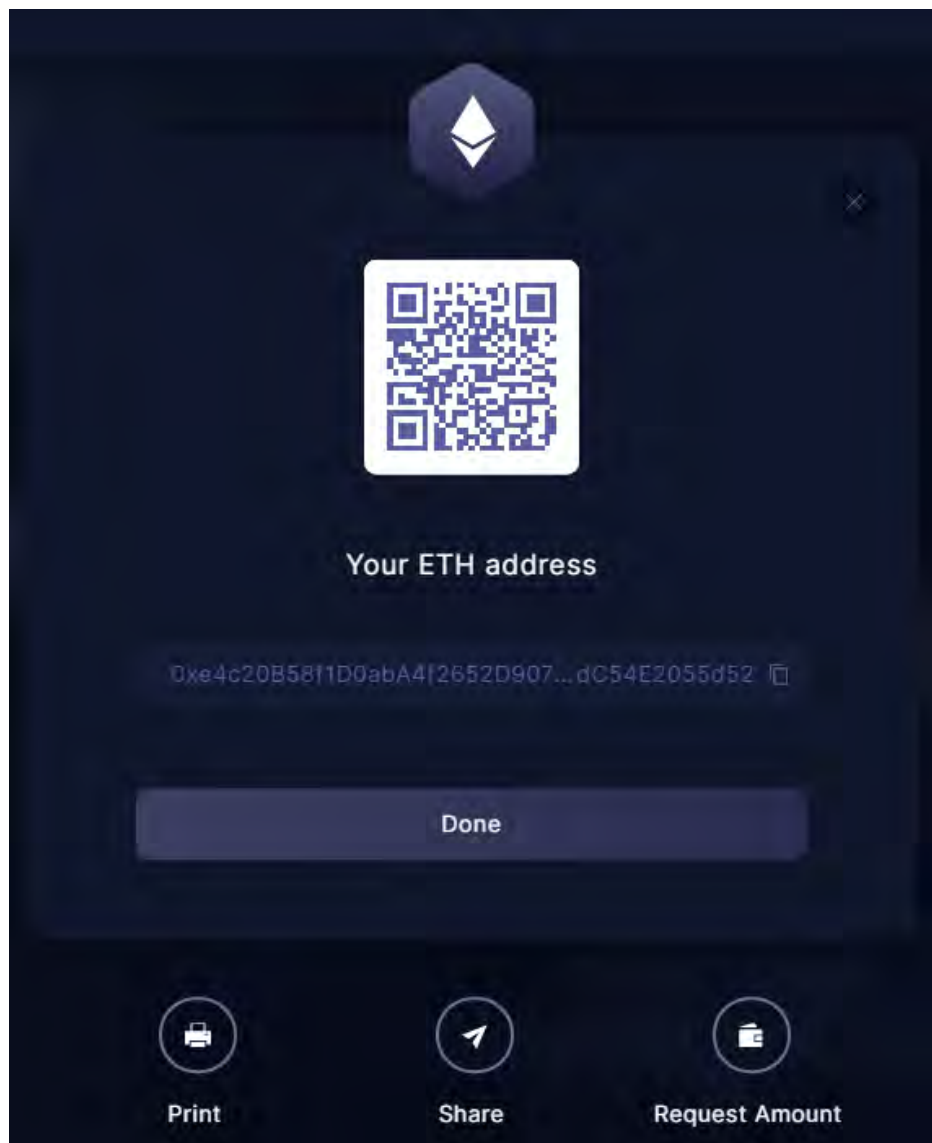
XLM 0%

### Active Assets

🔍 Search for assets

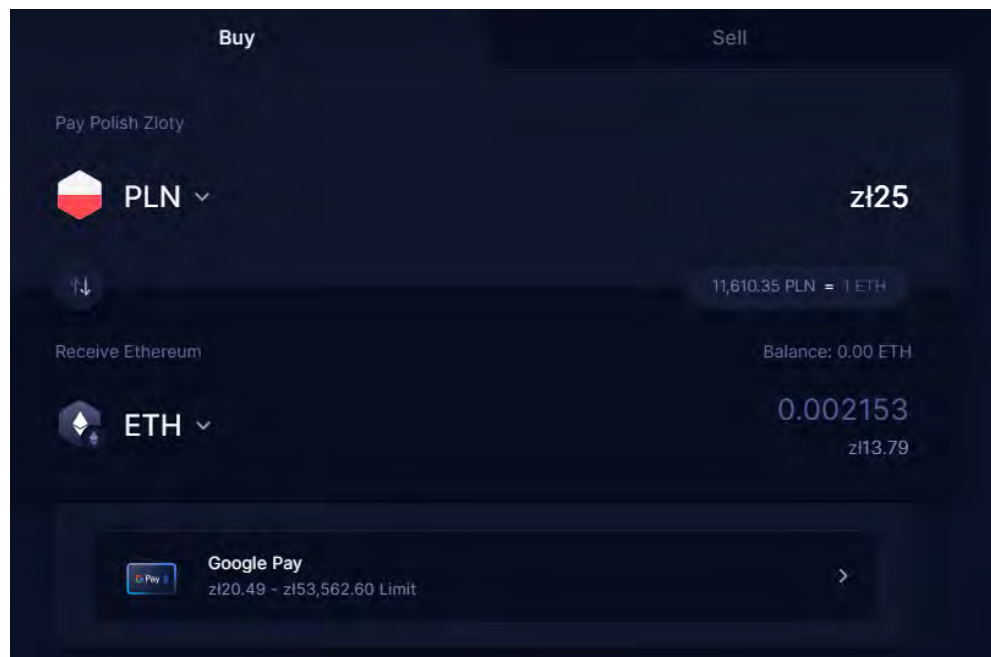
ASSET NAME	PRICE	24H CHANGE	MY BALANCE	VALUE	TOTAL %
 Bitcoin BTC	\$26,144.00	+0.16%	0.00 BTC	\$0.00	0.00%
 XRP XRP	\$0.53	+3.52%	0.00 XRP	\$0.00	0.00%
 Litecoin LTC	\$65.35	+1.76%	0.00 LTC	\$0.00	0.00%
 Stellar XLM	\$0.12	+4.73%	0.00 XLM	\$0.00	0.00%







# In-app purchase



# Purchase at the exchange office



Chcę kupić  ETH  PLN

1 ETH = 7533.1269 PLN [Prowizja i KYC](#)

Krok 1 z 3

**Wprowadź dane swojego portfela**  
Twój portfel działający w sieci Ethereum Network

\* Oświadczam, że adres portfela podany przy składaniu zamówienia należy do mnie.

Jeśli nie masz portfela kryptowalutowego, sprawdź aplikację Ari10 Exchange (iOS / Android).

[POTWIERDŹ I KONTYNUUJ](#)

Chcę kupić  ETH  PLN

1 ETH = 7533.1269 PLN [Prowizja i KYC](#)

Krok 3 z 4

**Opłata transakcyjna**  
Opłata za transakcję w sieci Ethereum Network wynosi **0.0016478 ETH (~11.6 PLN)**.  
Kwota ta zostanie dodana do całkowitej kwoty płatności. Zapłacisz **~111.6 PLN**.

[WRÓĆ](#) [POTWIERDŹ](#)

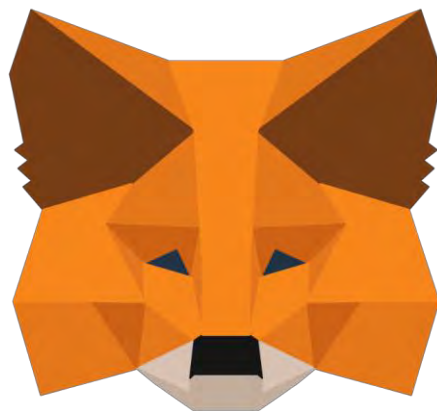
## Płatność

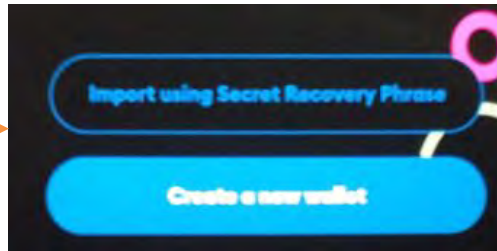
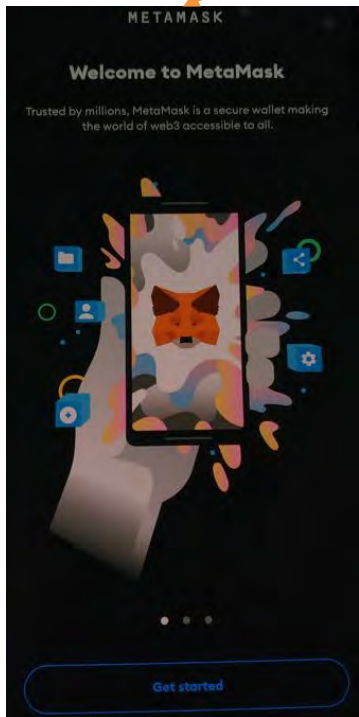
Wybierz metodę płatności



\* Wyrażam zgodę na przetwarzanie moich danych osobowych przez Bitcoan sp. z o.o., zgadzam się z [regulaminem strony](#) i rozumiem, że nie mogę wycofać się z umowy po zakończeniu transakcji ze względu na jej nieodwracalny charakter. Szczegóły dotyczące przetwarzania danych znajdują się w polityce prywatności.

# Wallet Mobilny





### Help us improve MetaMask

MetaMask would like to gather usage data to better understand how our users interact with MetaMask. This data will be used to provide the service, which includes improving the service based on your use.

MetaMask will...

- ✓ Always allow you to opt-out via Settings
- ✓ Send anonymized click & pageview events
- ✗ Never collect information we don't need to provide the service (such as keys, addresses, transaction hashes, or balances)
- ✗ Never collect your full IP address\*
- ✗ Never sell data. Ever!

This data is aggregated and is therefore anonymous for



**Our Terms of Use have been updated**

Ta witryna internetowa wykorzystuje technologie, takie jak pliki cookie, w celu umożliwienia podstawowej funkcjonalności witryny, a także do celów analitycznych, personalizacji i reklamy ukierunkowanej. W każdej chwili możesz zmienić swoje ustawienia lub zaakceptować ustawienia domyślne. Możesz zamknąć ten baner, aby kontynuować tylko z niezbędnymi plikami cookie.

[Polityka Cookie](#)  
[Preferencje dotyczące przechowywania danych](#)

Ukierunkowana reklama  
 Personalizacja

I agree to the Terms of Use, which apply to my use of MetaMask and all of its features

Accept

Please scroll to read all sections

**METAMASK**

1 Create password    2 Secure wallet    3 Confirm Secret Recovery Phrase

### Create password

This password will unlock your MetaMask wallet only on this device.

New Password Show

Password strength: **Good**

Confirm password

Must be at least 8 characters

Unlock with Fingerprint?

I understand that MetaMask cannot recover this password for me. [Learn more.](#)

**METAMASK**

1 Create password    2 Secure wallet    3 Confirm Secret Recovery Phrase

### Secure your wallet

Don't risk losing your funds. Protect your wallet by saving your **Secret Recovery Phrase** in a place you trust. It's the only way to recover your wallet if you get locked out of the app or get a new device.

Remind me later  
(Not recommended)

Start

Highly recommended

### Secure your wallet

Secure your wallet's **Secret Recovery Phrase**.

[Why is it important?](#)

**Manual**

Write down your Secret Recovery Phrase on a piece of paper and store in a safe place.

Security level: Very strong

Risks are:

- You lose it
- You forget where you put it
- Someone else finds it

Other options: Doesn't have to be paper!

Tips:

- Store in bank vault
- Store in a safe
- Store in multiple secret places

Start

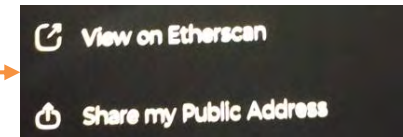
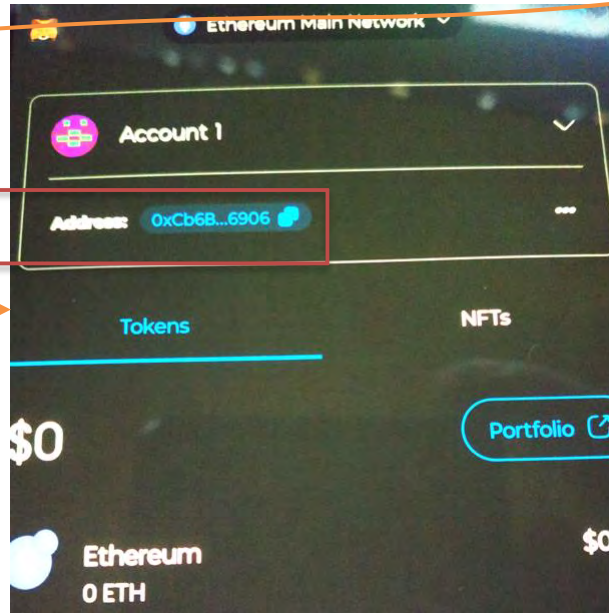
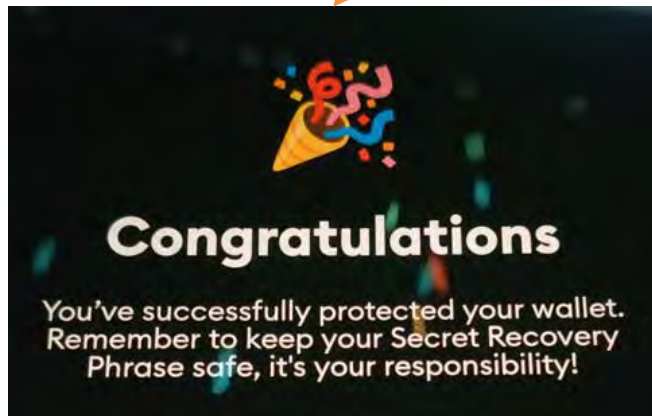
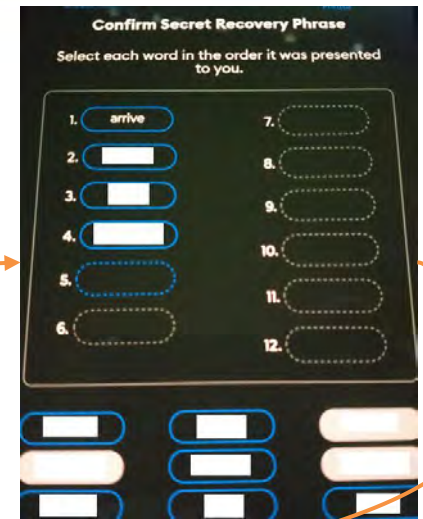
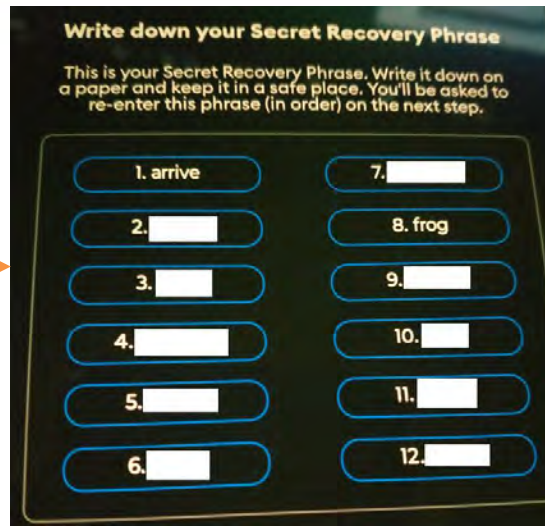
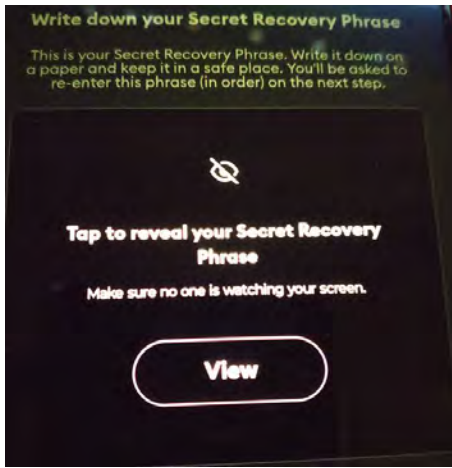
### Confirm your password

Before continuing we need you to confirm your password

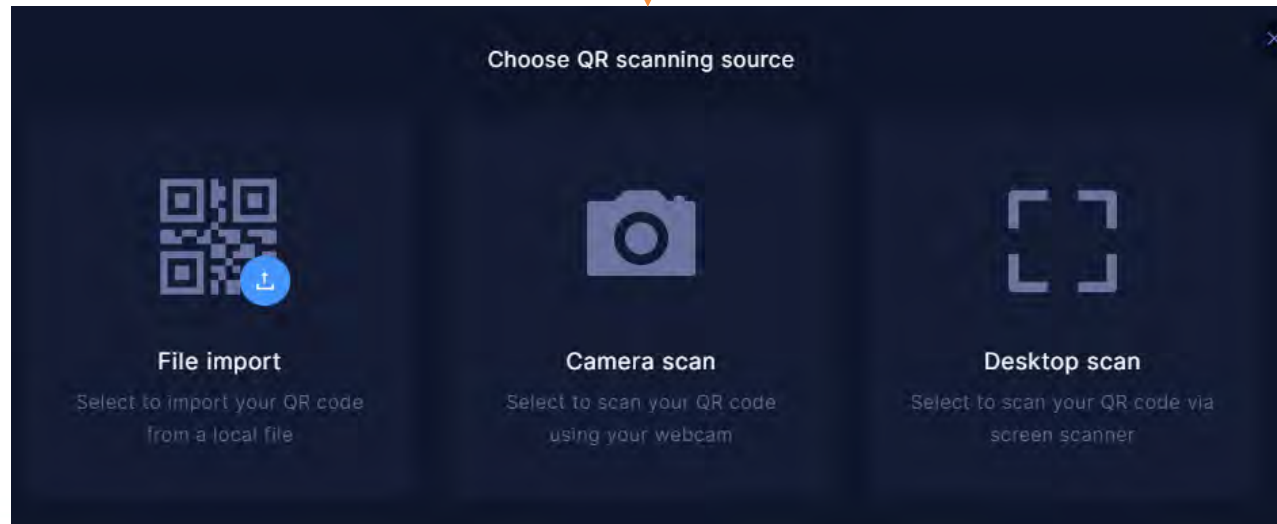
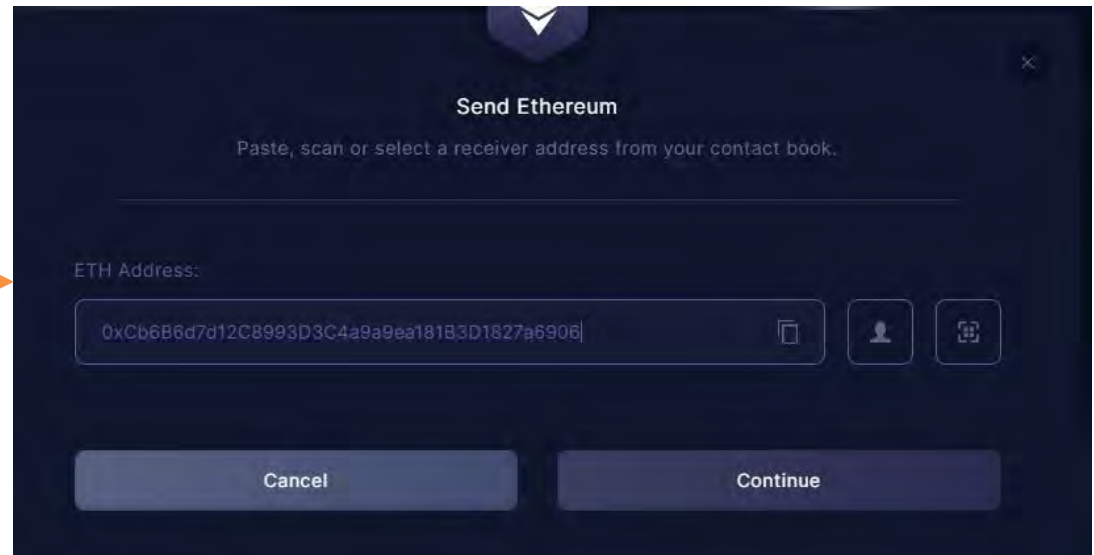
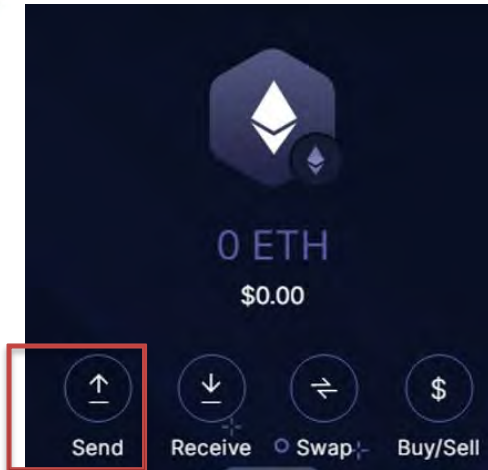
Password

CONFIRM





- 1) Install the wallet on your computer and create a new Bitcoin address, ✓
- 2) Buy Bitcoin for \$5, ✓
- 3) Send funds from the exchange / exchange to your wallet, ✓
- 4) Install a mobile wallet on your smartphone, ✓
- 5) Transfer funds from your computer to your smartphone,**
- 6) Create a "paper wallet",
- 7) Send some funds to your "paper wallet",
- 8) See the balance of your accounts using blockchain explorer,
- 9) Backup your private keys,
- 10) Buy goods and services from merchants who accept cryptocurrencies.



### Send Ethereum

0.00007 ETH ALL

---

0.11 USD

Network fee: **Average** ? 0.0006771 ETH | 1.13 USD

Balance after: 0.007201 ETH | 12.01 USD

Show Advanced Options



0.00007 ETH ALL

---

0.11 USD

Network fee: **Low** ? 0.0004514 ETH | 0.75 USD


Balance after: 0.007427 ETH | 12.39 USD

Nonce: ?

Gas price: 16.37 GWEI

Low  Average  Fast

Confirm Send



0.11 USD  
0.00007 ETH

---

To Address: 0xCb6B6d7d12C8993D3C4a9a9ea181B3D1827a6906

Network fee: ? 0.0004514 ETH | 0.75 USD

Balance after: 0.007427 ETH | 12.39 USD

Back Send

Unlock Wallet

Enter your account password

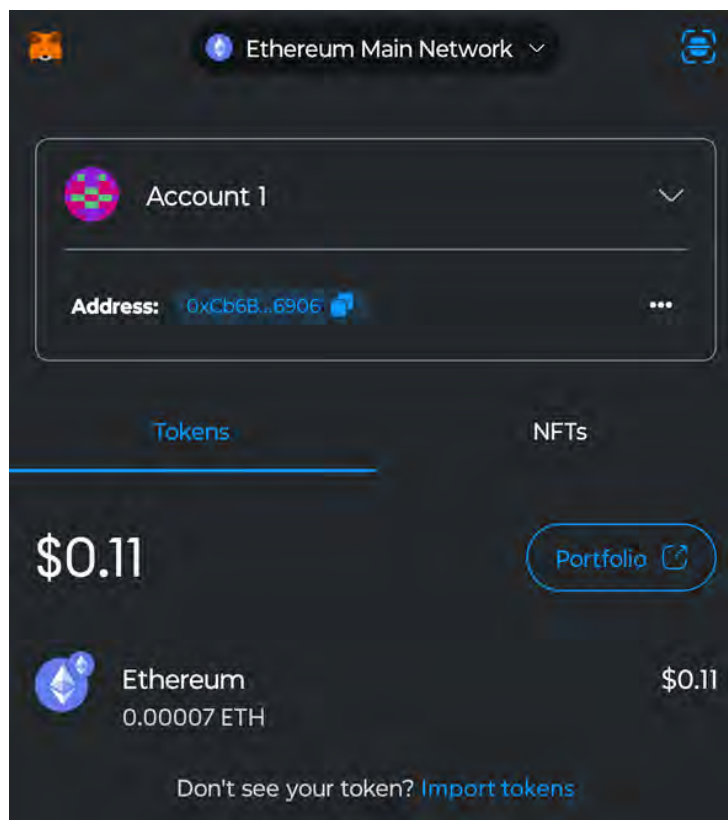
Password

You sent 0.00007 ETH to

0xCb6B6d7d12C8993D3C4a9a9ea181B3D1827a6906

Send Again Continue









- 1) Install the wallet on your computer and create a new Bitcoin address, ✓
- 2) Buy Bitcoin for \$5, ✓
- 3) Send funds from the exchange / exchange to your wallet, ✓
- 4) Install a mobile wallet on your smartphone, ✓
- 5) Transfer funds from your computer to your smartphone, ✓
- 6) Create a "paper wallet",**
- 7) Send some funds to your "paper wallet",
- 8) See the balance of your accounts using blockchain explorer,
- 9) Backup your private keys,**
- 10) Buy goods and services from merchants who accept cryptocurrencies.

# Paper Wallet



*Open Source JavaScript Client-Side Bitcoin Wallet Generator*

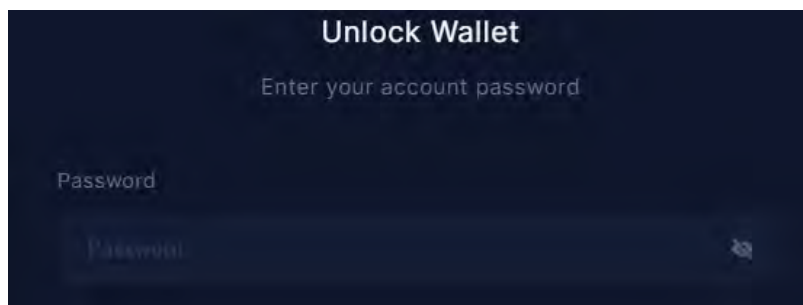
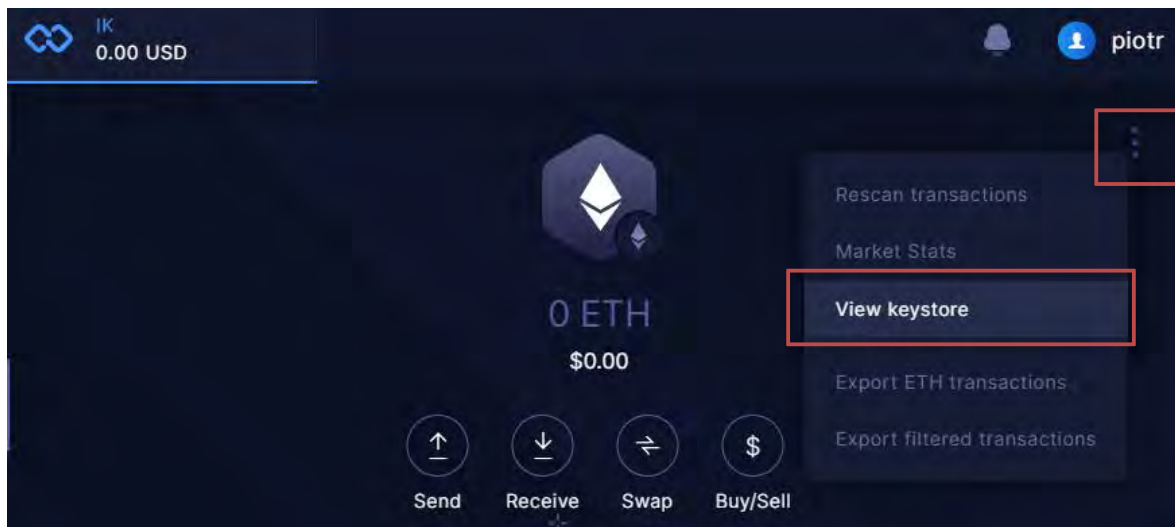
Bitcoin Address	Private Key
 <b>SHARE</b> 1AnDnxb[REDACTED]Buxbv	 <b>SECRET</b> L4HJz99GnM34ZSyjL19[REDACTED]

Single Wallet    Paper Wallet    Bulk Wallet    Brain Wallet  
Vanity Wallet    Split Wallet    Wallet Details

Hide Art?     Addresses to generate:     Generate    Print  
BIP38 Encrypt?     Passphrase:     Addresses per page:



# Copy of the keys



**Ethereum** (ETH)

Public Address: 0xa0090063[redacted]

Extended Public Key: [redacted]

Address	Path	Balance	Private key
0xa00900636e69f0AB3539[redacted] [redacted]	m/0/0	0.00000000 ETH	0x[redacted] [redacted]

Notatnik.txt

Plik Edytuj Wyświetl

Adres	Private Key
19aomg[redacted]9hMmY8ERY	L1pe13vtqRk[redacted]y13md9k[redacted]um5
1Jw3cTy[redacted]rtriM9hh	KzaNzu3XM6b4[redacted]Qy1qtg[redacted]hBxy
1AHXeoVt[redacted]kqDGHP6RP4	L2wWAvq8qhN[redacted]jdDC[redacted]4rcn





- 1) Install the wallet on your computer and create a new Bitcoin address, ✓
- 2) Buy Bitcoin for \$5, ✓
- 3) Send funds from the exchange / exchange to your wallet, ✓
- 4) Install a mobile wallet on your smartphone, ✓
- 5) Transfer funds from your computer to your smartphone, ✓
- 6) Create a "paper wallet", ✓
- 7) Send some funds to your "paper wallet", ✓
- 8) See the balance of your accounts using blockchain explorer,**
- 9) Backup your private keys, ✓
- 10) Buy goods and services from merchants who accept cryptocurrencies.

## The Ethereum Blockchain Explorer

All Filters Search by Address / Txn Hash / Block / Token / Domain Name

## The Ethereum Blockchain Explorer

All Filters 0xd9AFFdAa73 FbbC47E299B2E7

### Overview

ETH BALANCE  
0.007436121877267392 ETH

ETH VALUE  
\$12.14 (@ \$1,632.71/ETH)

### More Info

PRIVATE NAME TAGS  
+ Add

LAST TXN SENT  
0x0430ab72ac75... from 1 day 4 hrs ago

FIRST TXN SENT  
0x9d99013a749e... from 56 days 28 mins ago

### Multi Chain

MULTICHAIN ADDRESSES  
7 addresses found via Blockscan

Transactions Token Transfers (ERC-20) Analytics Comments

Latest 5 from a total of 5 transactions

Advanced Filter

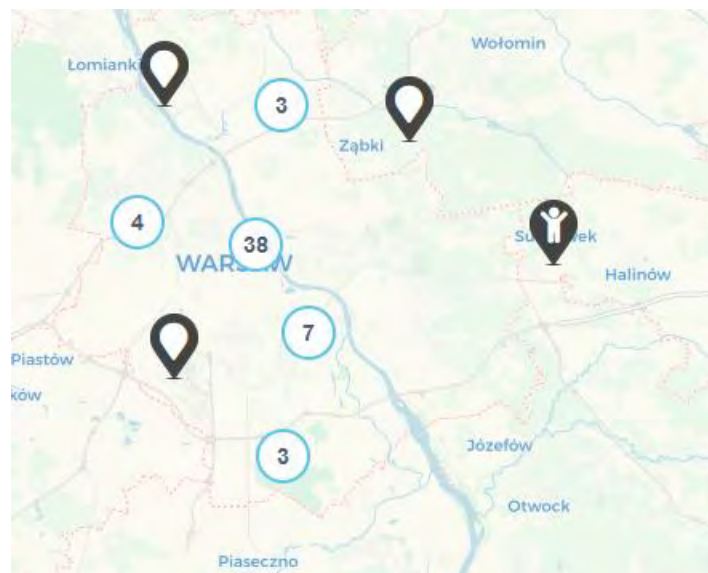
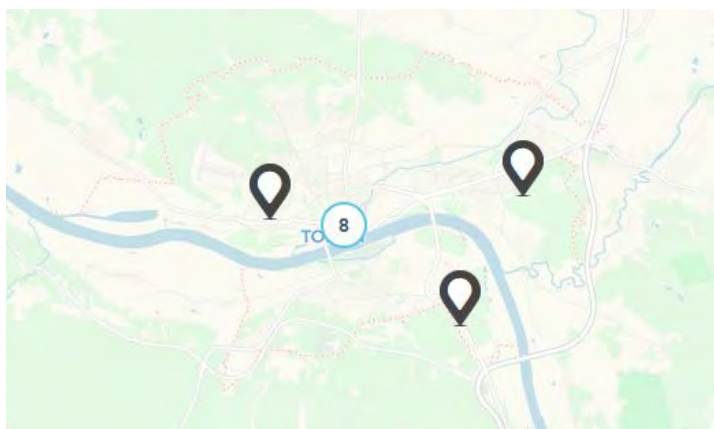
Transaction Hash	Method	Block	Age	From	To	Value	Txn Fee
0x0430ab72ac7545efb...	Transfer	17963388	1 day 4 hrs ago	0xd9AFFd...9B2E7F42	0xCb6B6d...827a6906	0.00007 ETH	0.00044244
0xb56cf721757db15b0...	Transfer*	17606510	51 days 4 hrs ago	0xd9AFFd...9B2E7F42	0xd9AFFd...9B2E7F42	0 ETH	0.00108823
0x9d99013a749e8905...	Transfer*	17572066	56 days 28 mins ago	0xd9AFFd...9B2E7F42	0xd9AFFd...9B2E7F42	0 ETH	0.00114195


- 1) Install the wallet on your computer and create a new Bitcoin address, ✓
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- 3) Send funds from the exchange / exchange to your wallet, ✓
- 4) Install a mobile wallet on your smartphone, ✓
- 5) Transfer funds from your computer to your smartphone, ✓
- 6) Create a "paper wallet", ✓
- 7) Send some funds to your "paper wallet", ✓
- 8) See the balance of your accounts using blockchain explorer, ✓
- 9) Backup your private keys, ✓
- 10) Buy goods and services from merchants who accept cryptocurrencies.**

All the cryptocurrency merchants and ATMs of the world in one map.

VIEW MAP

Read more



NAZWA PRODUKTU	CENA	ILOŚĆ	WARTOŚĆ
 <p>TP-Link TL-MR3020 router bezprzewodowy Fast Ethernet Jedna częstotliwości (2,4 GHz) 3G Wysyłka z: M19   Kod producenta: TL-MR3020</p>	169,99 zł	- 1 +	169,99 zł ×

Dostawa od 14,99 zł

Czas dostawy 2 - 3 dni robocze

**Koszyk 169,99 zł**

[Dostawa i płatność >](#)



## Dane do faktury

Imię i nazwisko \*

Kupuję jako \*

Adres (z numerem budynku/lokalu) \*

Kod pocztowy \*

Miejscowość \*

Telefon komórkowy \*

Adres e-mail \*

Chcę, aby zamówienie zostało **dostarczone na inny adres**

Chcę, aby na fakturze wydrukowano Dane Odbiorcy (dostawy)






## Sposób dostawy

Wybierz sposób dostawy (**przesyłki: 1 szt.**)

- Przesyłka kurierska **14,99 zł**
- Odbiór w punkcie Gdynia **14,99 zł**

## Metoda płatności

Wybierz metodę płatności za zamówienie

- Karta płatnicza, BLIK, szybki przelew 
- Przelew bankowy (proforma) 
- Raty Pekao **3 x 0%** 3 raty po 61,66 zł każda 
- Niskie raty 
- Szybka płatność kryptowalutą **zonda** 

## Przelew kryptowaluty - ZondaPay

**UWAGA!** Zgodnie z ustawą o Prawach Konsumenta, wybór tej metody płatności wyłącza możliwość skorzystania przez Konsumenta z prawa do odstąpienia od umowy bez podania przyczyny w terminie 14 dni. *Przyczyna: cena lub wynagrodzenie zależą od wahań na rynku finansowym, niezależnych od przedsiębiorcy i mogących wystąpić przed upływem terminu na odstąpienie od umowy.* Klikając przycisk rozpoczęcia płatności kryptowalutą, akceptujesz powyższe wyłączenie prawa do odstąpienia od umowy.

zapłać teraz kryptowalutą

The screenshot shows the ZondaCryptoPay interface. On the left, a white box displays the recipient's email 'Płatność dla: ...@... .pl' and the amount 'Wartość: 41.43 EUR'. The main area is titled 'Wybierz kryptowalutę, którą chcesz zapłacić' (Choose the cryptocurrency you want to pay with). A search bar contains 'Bitcoin'. The Bitcoin option is selected and highlighted in orange, showing a value of '≈ 0.00179814 BTC'. Below it, a grid of other cryptocurrencies is displayed, each with its icon, name, and value:

Cryptocurrency	Value
Bitcoin	≈ 0.00179814 BTC
Ethereum	≈ 0.02849265 ETH
Tether	≈ 46.804368 USDT
Litecoin	≈ 0.71975164 LTC
Bitcoin Cash	≈ 0.25321762 BCC
Ripple	≈ 51.119609 XRP
Bitcoin Gold	≈ 3.66272121 BTG
zCash	≈ 2.10375769 ZEC
Lisk	≈ 74.19441443 LSK
Dash	≈ 1.8470643 DASH
TRON	≈ 624.399476 TRX
Dogecoin	≈ 730.1056338 DOGE

## Wyślij dokładnie podaną wartość na podany adres portfela

Pamiętaj, aby uwzględnić opłatę dla sieci

Wspieramy tylko wpłaty poprzez mainnet, z wyłączeniem przelewów ETH kontrakt 



Oczekiwanie na płatność

14:54

Pamiętaj, że jeżeli nie zakończysz płatności w przeciągu 15 minut, wartość ETH może ulec zmianie z powodu wahań kursu.

ID płatności oraz adres Twojej płatności są unikatowe. Prosimy ich nie udostępniać dalej.

Przelej dokładnie

0.02848679 ETH

Kopiuj

Na adres portfela

0x94489fA1d

:956B83c00

Kopiuj

PŁATNOŚĆ Z PORTFELA

# Curiosity

"photo sent by text"








### Encode files to Base64 format

Select a file to upload and process, then you can download the encoded result.

 Click (or tap) here to select a file

 The maximum file size is 192MB.

Destination character set for text files.


Newline separator (for the "encode each line separately" and "split lines into chunks" functions).

Encode each line separately (useful for when you have multiple entries).

Split lines into 76 character wide chunks (useful for MIME).

Perform URL-safe encoding (uses Base64URL format).

**> ENCODE <**


 **Success!**

**CLICK OR TAP HERE** to download the encoded file.

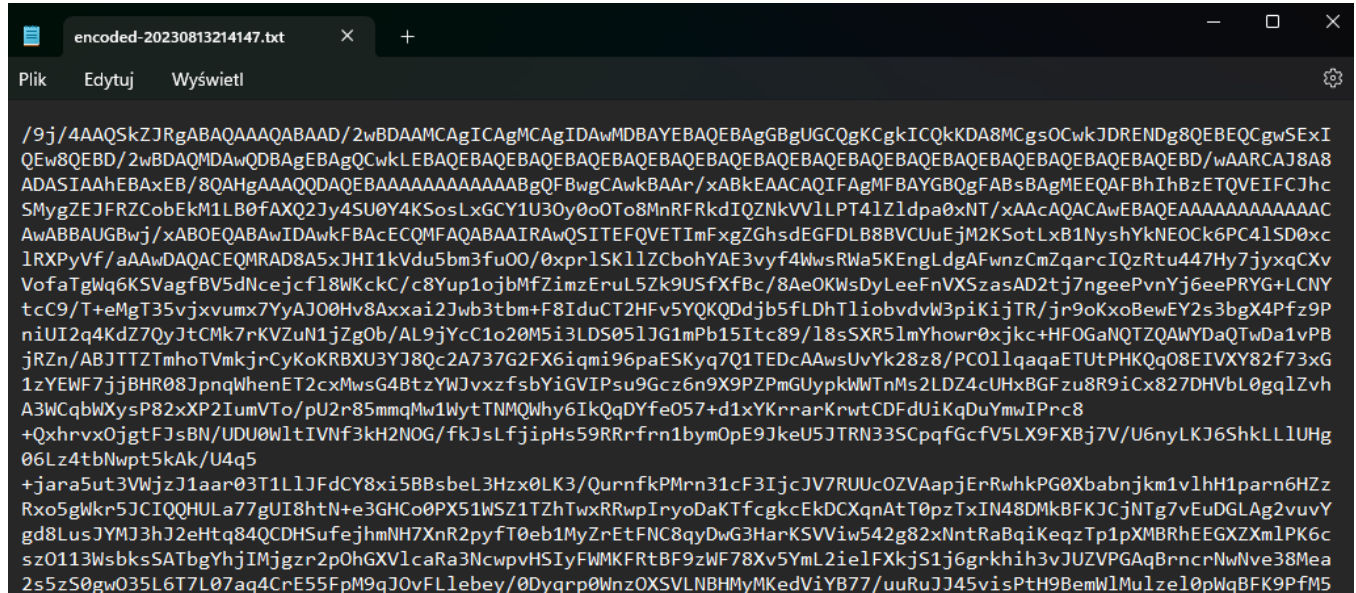
*Please note that this file is removed from our system immediately after the first download attempt or 15 m*

Nazwa

▼ Dzisiaj

 encoded-20230813214147.txt





## Online Tools

### Base64 Decode File

Decode and download file from base64 online function

Input

Download

Hash	File Hash
CRC-16	CRC-16
CRC-32	CRC-32
MD2	MD2
MD4	MD4
MD5	MD5
SHA1	SHA1
SHA224	SHA224
SHA256	SHA256
SHA384	SHA384
SHA512	SHA512
SHA512/224	SHA512/224

## Base64 Decode File

Decode and download file from base64 online function

```

/9j/4AAQSkZJRgABAQAAQABAAD/2wBDAAMCAgICAgMCAgIDAwMDBAYEBAQEBAgGBgUGCQgKCgkICQkKDA8MCgsOCwkJDRENDg8QEBEQCgwsExI
QEw8QEw8QEBD/2wBDAQMDAwQDBAgEBAgQCwklEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQEBAQ
ADASIAAhEBAxEB/8QAHgAAAQQAQDEBAAAAAAAAAAABgQFBwgCAwKBAAr/xABkEAACAQIFAgMFBAYGBQgFABsBAGMEEQAFBhIhBzETQVEIFCJhc
SMYgZEJFRZCobEkM1Lb0fAXQ2Jy4SU0Y4KSosLxGcY1U30y0o0T08MnRFRkdIQZnkVW1LPT41Z1dpa0xNT/xAAcAQACAwEBAQEAAAAAAAAAAAC
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1RXPYVf/aAAwDAQACEQMRAD8A5xJHI1kVdu5bm3fu00/0xpr1SK11ZCbohYAE3vyf4WwsRWA5KEngLdgAFwnzCmZqarcIQzRtu447Hy7jyxqCXv
VofaTglWq6KSVagfBV5dNcejcfl8WKckC/c8Yup1ojbMfZimzEruL5Zk9USfXfBc/8AeOKwsDyLeeFnVXSzasAD2tj7ngeePvnYj6eePRYG+LCNY
tcC9/T+eMgT35vjxvumx7YyAJ00Hv8Axxai2Jwb3tBm+F8IduCT2HFv5YQKQDdb5fLdHTliobvduW3piKijTR/jr9oKxoBewEY2s3bgX4Pfz9P
niUI2q4KdZ7QyJtCMk7rKVZuN1jZgOb/AL9jYcC1o20M5i3LDS051JG1mPb15Itc89/18sSXR51mYhowr0xjkc+HF0GaNQTZQAWYDaQTWda1vpB
jRZn/ABJTtZTmhoTVmkjrCyKoKRBXU3YJ8Qc2A737G2FX6iqmi96paESKYq7Q1TEdCAAwSUVYk28z8/PCO1lqaqaETUTPHKQq08EIVXY82f73xG
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Rxo5gWkr5JCIQQHULa77gUI8htN+e3GHCo0PX51WSZ1TZhTwxRRwpIryodaKtfcgkEkDCXqnAtT0pzTxIN48DMkBFKJcJntg7vEuDGLAg2vuvY
gd8LusJYMJ3hJ2eHtq84QCDHSufeJhmNH7Xnr2pyfT0eb1MyZrEtFNC8qyDwG3HarKSVIw542g82xNntRaBqiKeqzTp1pXMBRhEEGXm1PK6c
sz0113WsbksSATbgYhjIMjgzr2p0hGXV1caRa3NcwpvHSIyFWMKFRtBF9zWf78Xv5YmL2ielFXkj5j6grkhih3vJUzVPGAqBrncrNwNve38Mea
2s5z50gw035L6T7L07aq4CrE55FpM9qJ0vFLlebey/0Dyqpp0WnzOXSVLNBHMyMKedViYB77/uuRuJJ45visPtH9Bemw1Mu1zel0pWqBFK9PFM5

```

Download

Nazwa	Data modyfikacji	Typ	Rozmiar
Dzisiaj			
base64	13.08.2023 23:44	Plik	245 KB

Nazwa	Data modyfikacji	Typ	Rozmiar
Dzisiaj			
base64.jpg	13.08.2023 23:44	Plik.JPG	245 KB
encoded-20230813214147.txt	13.08.2023 23:42	Dokument tekstowy	327 KB

[https://emn178.github.io/online-tools/base64\\_decode\\_file.html](https://emn178.github.io/online-tools/base64_decode_file.html)

Thank you for your attention

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