

CRYPTOCURRENCIES 101

Looking for
FREEDOM?



THIS NOTE IS LEGAL TENDER
FOR ALL DEBTS, PUBLIC AND PRIVATE

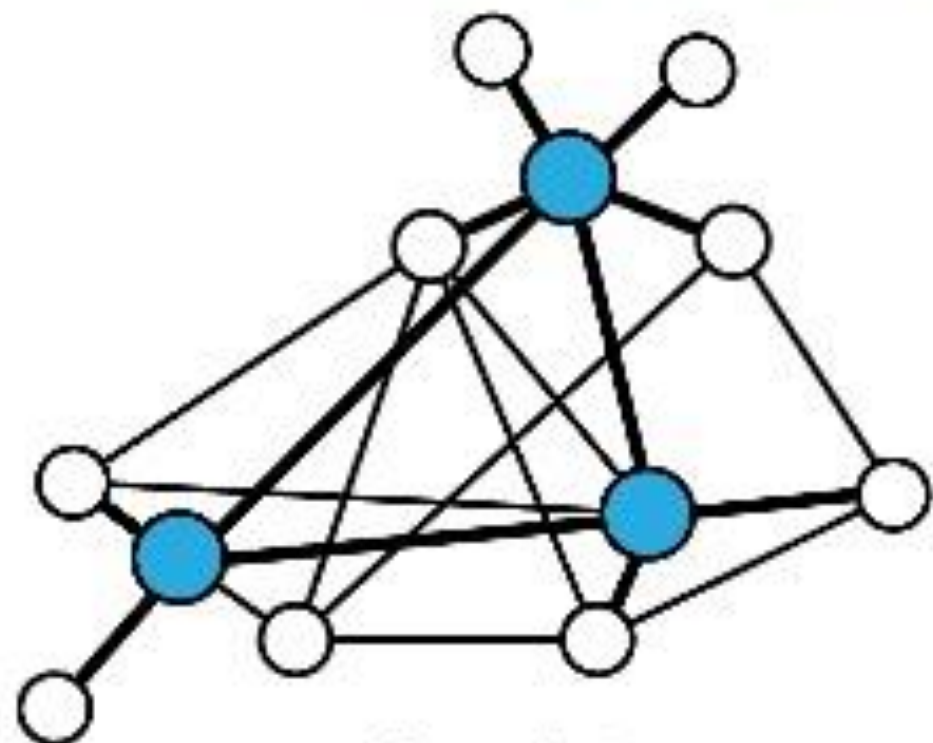
```
16
17 static CBlock CreateGenesisBlock(const char* pszTimestamp, const CScript&
    genesisOutputScript, uint32_t nTime, uint32_t nNonce, uint32_t nBits, int32_t nVersion,
    const CAmount& genesisReward)
18 {
19     CMutableTransaction txNew;
20     txNew.nVersion = 1;
21     txNew.vin.resize(1);
22     txNew.vout.resize(1);
23     txNew.vin[0].scriptSig = CScript() << 486604799 << CScriptNum(4) << std::vector<
        unsigned char>((const unsigned char*)pszTimestamp, (const unsigned char*)
        pszTimestamp + strlen(pszTimestamp));
24     txNew.vout[0].nValue = genesisReward;
25     txNew.vout[0].scriptPubKey = genesisOutputScript;
26
27     CBlock genesis;
28     genesis.nTime = nTime;
29     genesis.nBits = nBits;
30     genesis.nNonce = nNonce;
31     genesis.nVersion = nVersion;
32     genesis.vtx.push_back(MakeTransactionRef(std::move(txNew)));
33     genesis.hashPrevBlock.SetNull();
34     genesis.hashMerkleRoot = BlockMerkleRoot(genesis);
35     return genesis;
36 }
```

Token

Distributed Network



No Central Authority

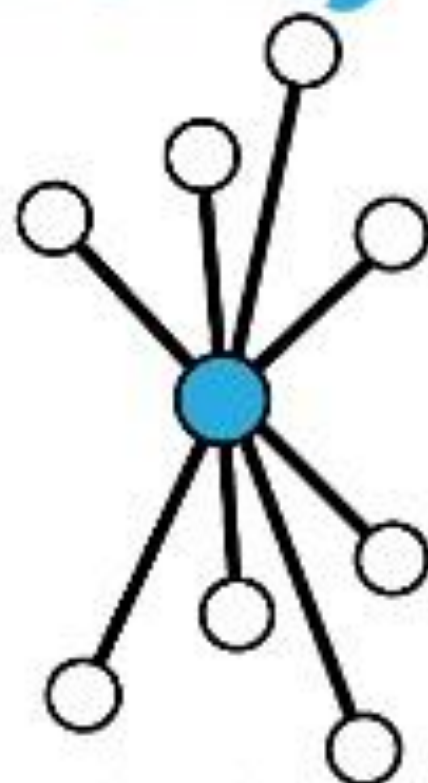


Decentralized Systems

No Central Authority

** Just like torrent and tor networks*

VS



Centralized Systems

with Central Authority

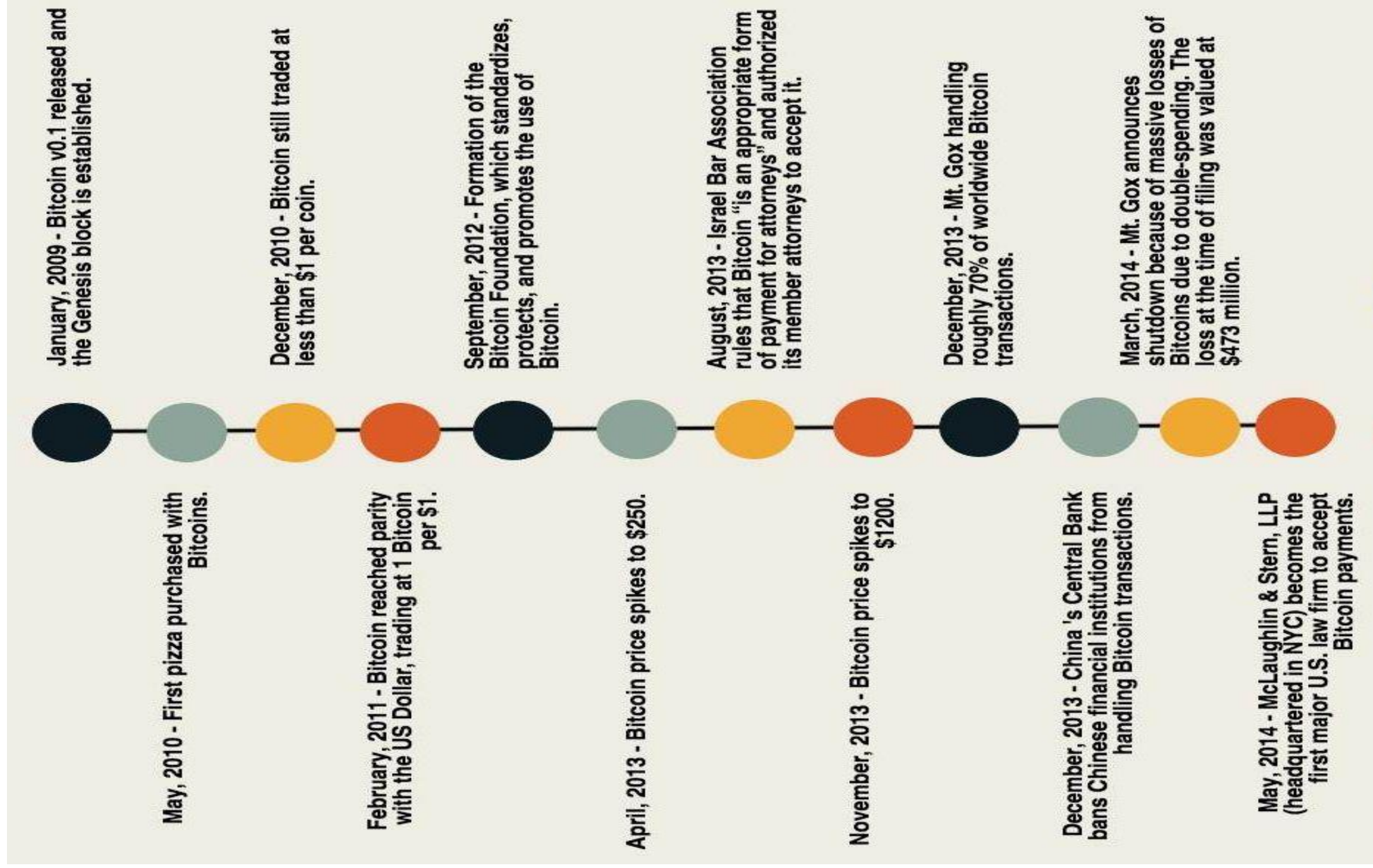


CRYPTOGRAPHY



Who's The Creator?

Timeline



\$8230 ▼

BTC Price



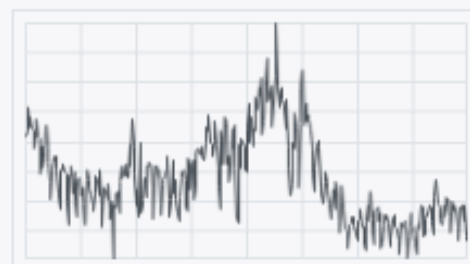
\$140.3B ▼

Market Cap



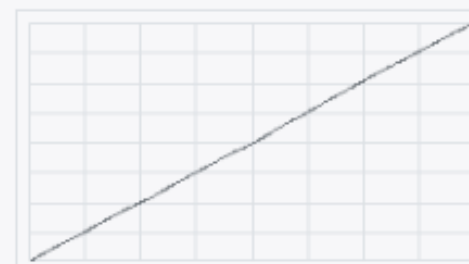
160K ▼

Daily Transactions



฿17.0M ▲

Money Supply



1 Bitcoin equals


















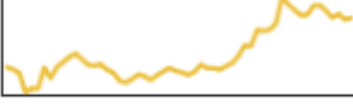


32,656.99 Malaysian Ringgit

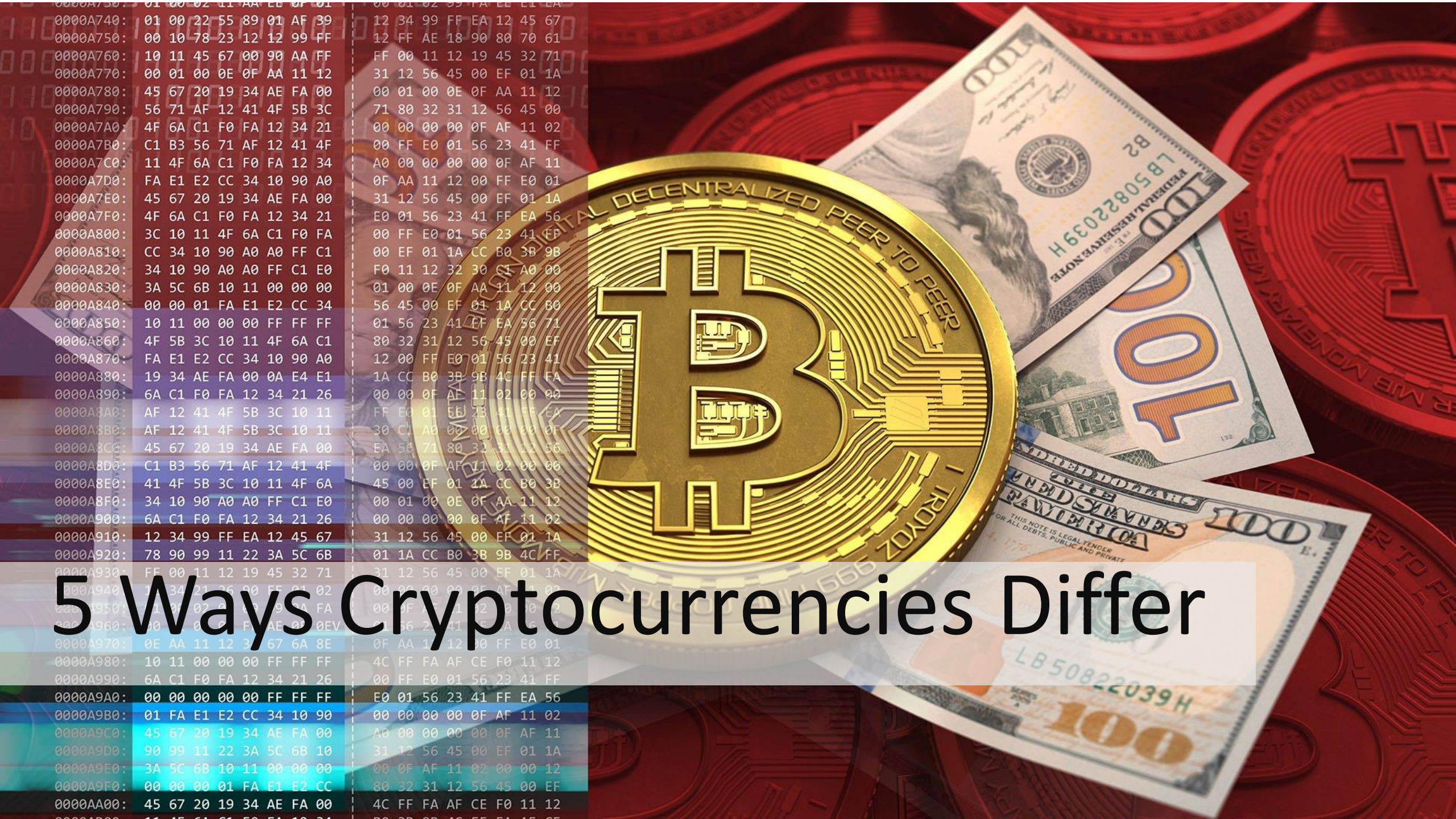
<input type="text" value="1"/>	Bitcoin ▼
<input type="text" value="32656.99"/>	Malaysian Ringgit ▼



Cryptocurrency Dominance

- > Cryptocurrencies: **1604**
- > Markets: **10891**
- > Market Cap: **\$372,843,364,713**
- > 24h Vol: **\$15,553,086,195**
- > BTC Dominance: **37.7%**

▲#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)	
1	 Bitcoin	\$140,566,678,557	\$8,245.16	\$4,980,420,000	17,048,387 BTC	-2.30%		...
2	 Ethereum	\$68,190,795,305	\$684.67	\$2,084,900,000	99,596,442 ETH	-2.74%		...
3	 Ripple	\$26,349,688,665	\$0.672358	\$215,366,000	39,189,968,239 XRP *	-1.74%		...
4	 Bitcoin Cash	\$20,217,591,905	\$1,179.44	\$612,376,000	17,141,688 BCH	-4.69%		...
5	 EOS	\$11,289,065,092	\$12.93	\$904,739,000	872,868,107 EOS *	-3.53%		...
6	 Litecoin	\$7,526,575,631	\$132.87	\$289,043,000	56,646,163 LTC	-1.84%		...
7	 Cardano	\$6,205,436,917	\$0.239342	\$61,670,600	25,927,070,538 ADA *	-4.15%		...
8	 Stellar	\$5,933,171,441	\$0.319374	\$28,375,900	18,577,502,993 XLM *	-0.70%		...
9	 TRON	\$5,204,883,510	\$0.079164	\$510,988,000	65,748,111,645 TRX *	-1.55%		...
10	 IOTA	\$4,746,492,683	\$1.71	\$47,670,700	2,779,530,283 MIOTA *	-3.10%		...



0000A730: 01 00 22 55 89 01 AF 39
0000A750: 00 10 78 23 12 12 99 FF
0000A760: 10 11 45 67 00 90 AA FF
0000A770: 00 01 00 0E 0F AA 11 12
0000A780: 45 67 20 19 34 AE FA 00
0000A790: 56 71 AF 12 41 4F 5B 3C
0000A7A0: 4F 6A C1 F0 FA 12 34 21
0000A7B0: C1 B3 56 71 AF 12 41 4F
0000A7C0: 11 4F 6A C1 F0 FA 12 34
0000A7D0: FA E1 E2 CC 34 10 90 A0
0000A7E0: 45 67 20 19 34 AE FA 00
0000A7F0: 4F 6A C1 F0 FA 12 34 21
0000A800: 3C 10 11 4F 6A C1 F0 FA
0000A810: CC 34 10 90 A0 A0 FF C1
0000A820: 34 10 90 A0 A0 FF C1 E0
0000A830: 3A 5C 6B 10 11 00 00 00
0000A840: 00 00 01 FA E1 E2 CC 34
0000A850: 10 11 00 00 00 FF FF FF
0000A860: 4F 5B 3C 10 11 4F 6A C1
0000A870: FA E1 E2 CC 34 10 90 A0
0000A880: 19 34 AE FA 00 0A E4 E1
0000A890: 6A C1 F0 FA 12 34 21 26
0000A8A0: AF 12 41 4F 5B 3C 10 11
0000A8B0: AF 12 41 4F 5B 3C 10 11
0000A8C0: 45 67 20 19 34 AE FA 00
0000A8D0: C1 B3 56 71 AF 12 41 4F
0000A8E0: 41 4F 5B 3C 10 11 4F 6A
0000A8F0: 34 10 90 A0 A0 FF C1 E0
0000A900: 6A C1 F0 FA 12 34 21 26
0000A910: 12 34 99 FF EA 12 45 67
0000A920: 78 90 99 11 22 3A 5C 6B
0000A930: FF 00 11 12 19 45 32 71
0000A940: 34 21 26 90 FF 01 02
0000A950: 11 30 02 09 9A FA
0000A960: 00 00 00 00 00 00 00 00
0000A970: 0E AA 11 12 36 67 6A 8E
0000A980: 10 11 00 00 00 FF FF FF
0000A990: 6A C1 F0 FA 12 34 21 26
0000A9A0: 00 00 00 00 00 FF FF FF
0000A9B0: 01 FA E1 E2 CC 34 10 90
0000A9C0: 45 67 20 19 34 AE FA 00
0000A9D0: 90 99 11 22 3A 5C 6B 10
0000A9E0: 3A 5C 6B 10 11 00 00 00
0000A9F0: 00 00 00 01 FA E1 E2 CC
0000AA00: 45 67 20 19 34 AE FA 00
0000AA10: 11 45 67 20 19 34 AE FA 00

5 Ways Cryptocurrencies Differ

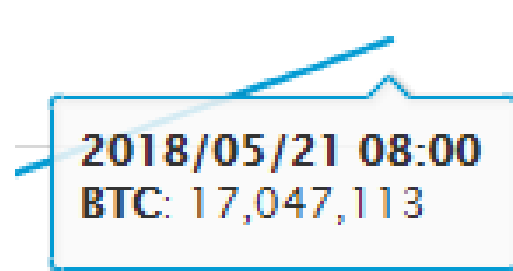
1. Decentralized

- No bank or government controls it
- Maintained by group of volunteer coders
- Run by open network of computers spread all around the world.
- Solves “double spending problem”



2. Limited Supply

- 21 million Btcs Will Ever Be Mined
- Fiat has unlimited supply.
- Banks produce them at their whim.



<https://blockchain.info/charts/total-bitcoins>

100 000 000 000 000 RESERVE BANK OF ZIMBABWE

*I promise to pay
the bearer on demand*

ONE HUNDRED
TRILLION
DOLLARS

for the Reserve Bank of Zimbabwe


Dr. G. Gono
Governor

100 000 000 000 000 HARARE 2008



N 5592206 C

BANQUE DU ZAIRE

CINQ MILLIONS ZAÏRES

5000000

1 · 10 · 1992

LE GOUVERNEUR

Nyulu 12/7

N 5592206 C

5000000



100000



BANK INDONESIA
SERATUS RIBU RUPIAH

KURANGKALAU
Bank Indonesia berkedudukan sebagai alat perlengkapan Pemerintah
Republik Indonesia.
Bank ini adalah yang mempunyai kekuasaan sebagaimana tercantum dalam
Undang-Undang Nomor 11/1998 tentang Bank Indonesia yang telah
diubah dengan Undang-Undang Nomor 10/2004 tentang Perubahan
Undang-Undang Nomor 11/1998 tentang Bank Indonesia.
Ditandatangani oleh
[Signature]
[Signature]



28 NOVEMBER 2004



100000

2004
DEWAN GUBERNUR
[Signature] *[Signature]*
GUBERNUR DEPUTI GUBERNUR



BANK NEGARA MALAYSIA

1000

WANG KERTAS INDIAN D. PERLAKIPAN
DENGAN NILAI

**SERIBU
RINGGIT**

Handwritten signature



ZY4890448

\$1000

ZY4890448

Year	Malaysia	Singapore	Indonesia	Thailand	Philippines	Vietnam	South Korea
2007	3.44	1.51	9,140.65	34.51	46.11	16,083.32	929.23
2008	3.33	1.41	9,693.56	33.35	44.48	16,445.24	1,100.66
2009	3.52	1.45	10,405.66	34.33	47.63	17,799.81	1,277.01
2010	3.22	1.36	9,086.01	31.72	45.09	19,125.11	1,156.36
2011	3.06	1.26	8,774.39	30.49	43.31	20,656.70	1,108.05
2012	3.09	1.25	9,387.38	31.07	42.21	20,873.13	1,126.39
2013	3.15	1.25	10,448.93	30.72	42.46	21,029.04	1,094.62
2014	3.27	1.27	11,866.03	32.48	44.40	21,198.86	1,053.02
2015	3.91	1.37	13,388.03	34.25	45.52	21,920.18	1,131.55
2016	4.14	1.38	13,307.10	35.29	47.50	22,364.71	1,160.48
2017	4.39	1.40	13,328.14	34.72	49.87	22,702.49	1,140.40



Currency Depreciation Factors

- Economic fundamentals
- Interest rate differentials
- Political instability
- Risk aversion among investors
- Weak economic fundamentals
- Chronic current account deficits
- High rates of inflation
- Unlimited supply of fiat currencies



3. Pseudonymous

- Do NOT need to identify yourself when sending bitcoin to another user.
- Each user is identified by the address of his or her wallet.
- The systems checks if the sender has enough crypto in his wallet and if he has authority to send.



HOW DO TRANSACTIONS WORK?

Bob wants to purchase something from Joe's store.



Joe's store provides bob with a unique address to send the payment to:
Ex: 1Ks32kdDgHt7J8luYhT56



Bob sends Joe the amount using the unique address.



The transaction is processed by the miners.



Joe's store receives the Bitcoins & the transaction is recorded.





✓ · Conn 65 · Height 523876



Scan

BTC ▾

Latest Transactions

Hash	Value Out
6f4178e329d7f21596e340cee5589ce89eb27c467b8...	0.18271635 BTC
aae8913409402a26811d5b7e7456dc36c2a7706a0f6...	1.22358854 BTC
1d81b617a9d64a99c566902c16eb1879bff4be18c56...	0.00473636 BTC
53b4694050c619b207ca83c71ce568216569235ae34...	25.76958019 BTC
aff23650ab1508aa5fab05f95760a7af458a69dde58f...	0.00595036 BTC
ad58d3179962f7352bc9db3350b909c4cc3c9908dee...	0.13050334 BTC
c113563f7be0e63cdb409595794c7be315c3e242c37...	0.00029779 BTC
93ebd4fc1c7ddd946f8aa21c58977f6f34d25e181bf...	0.16585631 BTC
c901379091c2e32fc004d4c0b9ded98140441551484...	0.00415257 BTC
30aed53ac03af4ee9a11a76b15505187993820ed287...	0.03755 BTC



IMMUTABLE

UNCHANGING. PERMANENT. FOREVER.

A close-up photograph of a person's hands slicing a red apple on a white cutting board with a red border. The person is wearing a dark green jacket and a gold watch. They are using a large, light blue-handled knife to cut the apple into wedges. Several slices of apple are already on the board, and a small pink bowl containing apple slices is visible on the left. The background is a blurred kitchen counter with a stainless steel pot.

Divisible



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