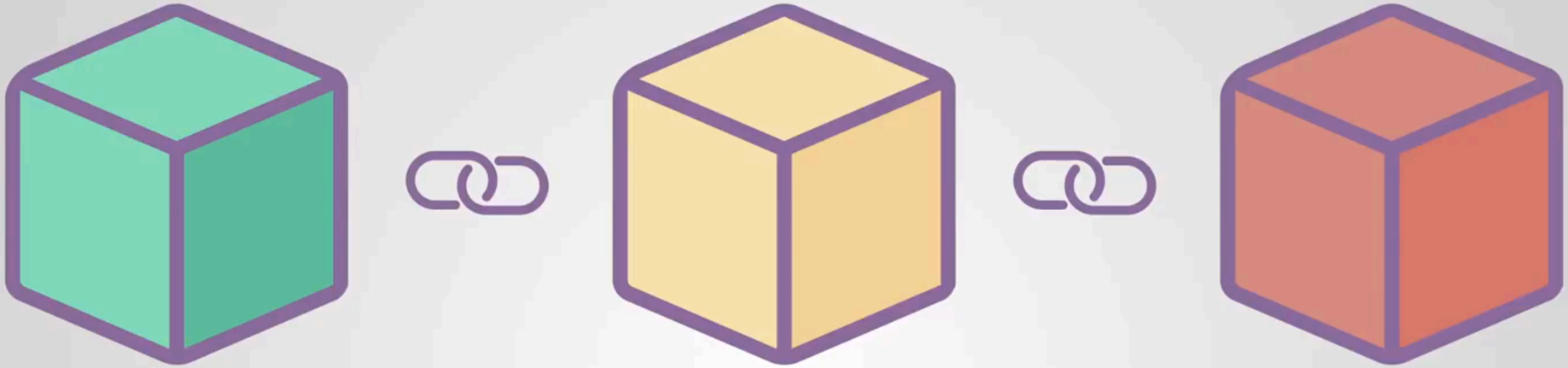
Bitcoin Visualization Workshop

Bitcoin features

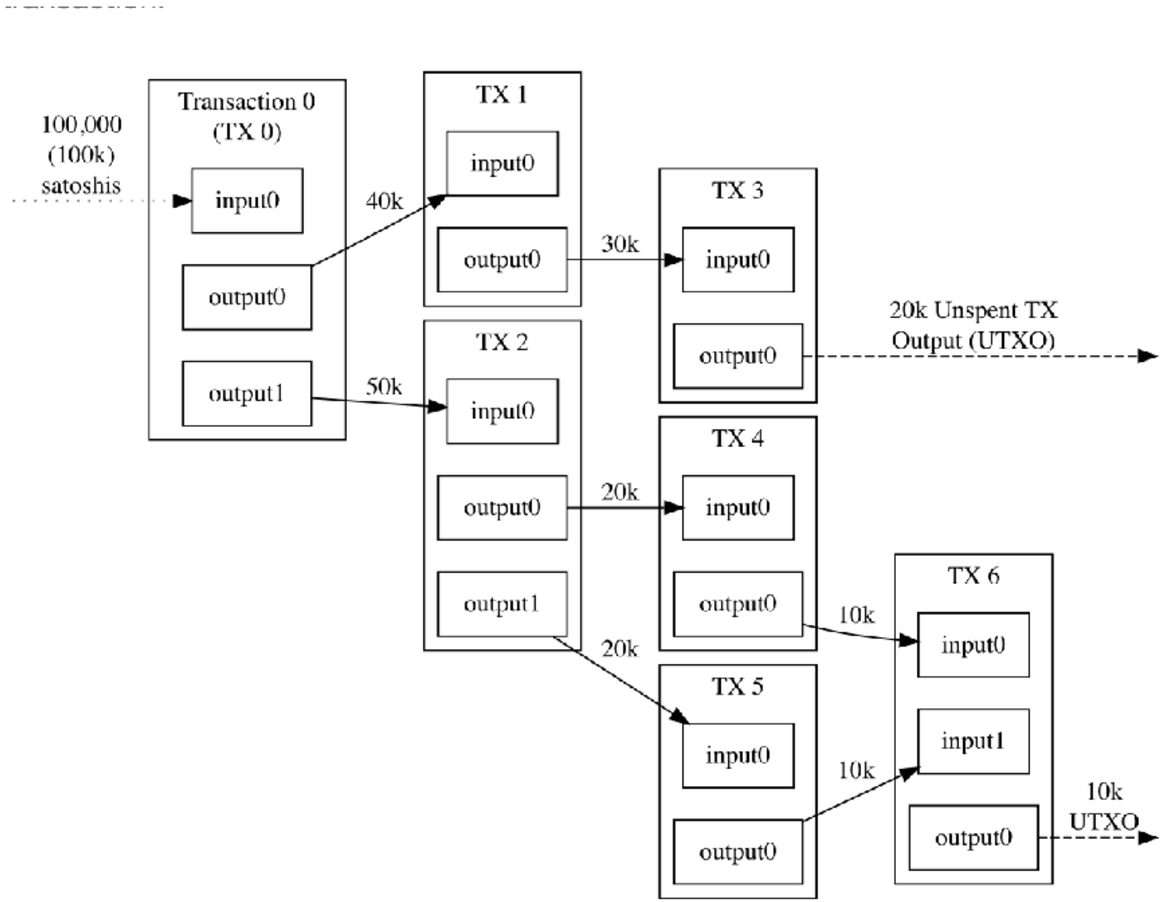
All information are public(software is open-source too)
&
Decentralized
&
Peer-to-Peer network



Blockchain

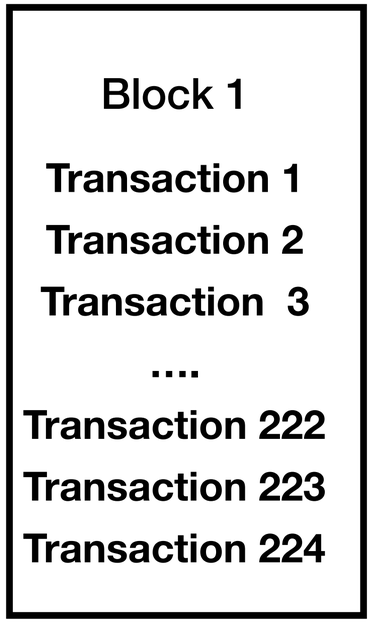
Simply explained

Transaction



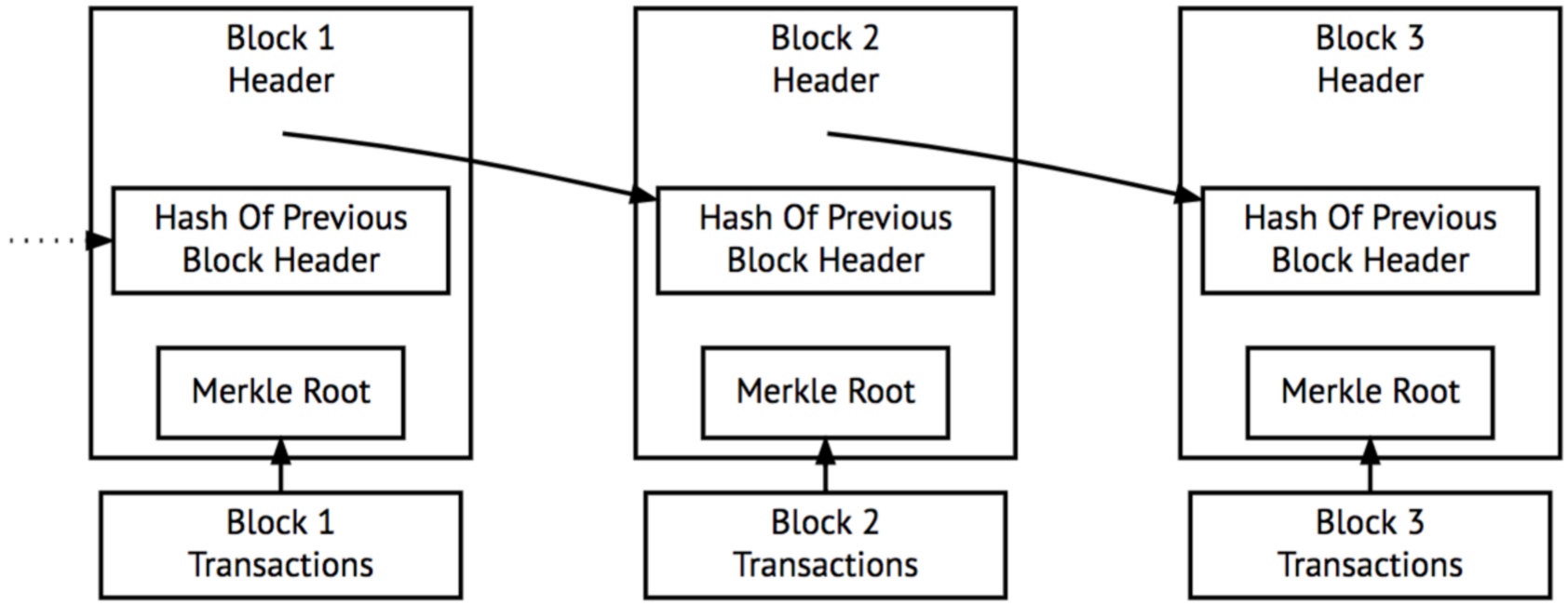
Triple-Entry Bookkeeping (Transaction-To-Transaction Payments) As Used By Bitcoin

Block



Each block represents a set of transactions (or events) that happened over a particular period.

Blockchain



Simplified Bitcoin Block Chain

https://hackernoon.com/bitcoin-ethereum-blockchain-tokens-icos-why-should-anyone-care-890b868cec06

what we are going to use are in our workshop

+blockchain events
numbers of transactions, total BTC sent, etc…
+transaction events
value, etc..
+market data(exchange rates)
$US <> BTC etc..
currency data from the major bitcoin exchanges

+archiving data(for data mining)

References

Bitcoin basic machanism

Whitepaper by Satoshi Nakamoto
https://bitcoin.org/bitcoin.pdf

Bitcoin basic info

- Bitcoin Wiki

https://en.bitcoin.it/wiki/Protocol_documentation

https://en.bitcoin.it/wiki/Script

https://en.bitcoin.it/wiki/Coinbase

Global Bitcoin Nodes Distribution
https://bitnodes.earn.com

BITNODES

Bitnodes is currently being developed to estimate the size of the Bitcoin network by finding all the reachable nodes in the network.

SUPPORTED BY EARN.COM

GLOBAL BITCOIN NODES DISTRIBUTION

Reachable nodes as of Sat Jan 20 2018 19:51:42 GMT+0900 (JST).

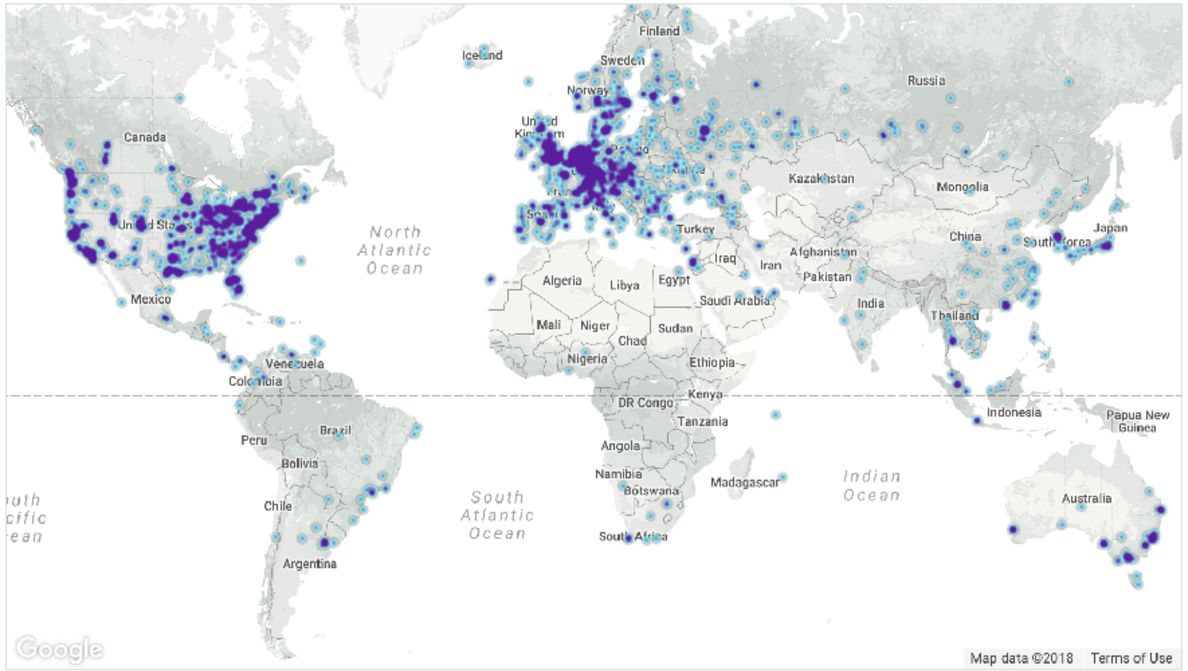
11612 NODES

24-hour charts »

Top 10 countries with their respective number of reachable nodes are as follow.

RANK	COUNTRY	NODES
1	United States	3166 (27.26%)
2	Germany	1983 (17.08%)
3	China	827 (7.12%)
4	France	771 (6.64%)
5	Netherlands	529 (4.56%)
6	Canada	449 (3.87%)
7	United Kingdom	433 (3.73%)
8	Russian Federation	395 (3.40%)
9	n/a	294 (2.53%)
10	Singapore	255 (2.20%)

More (103) »

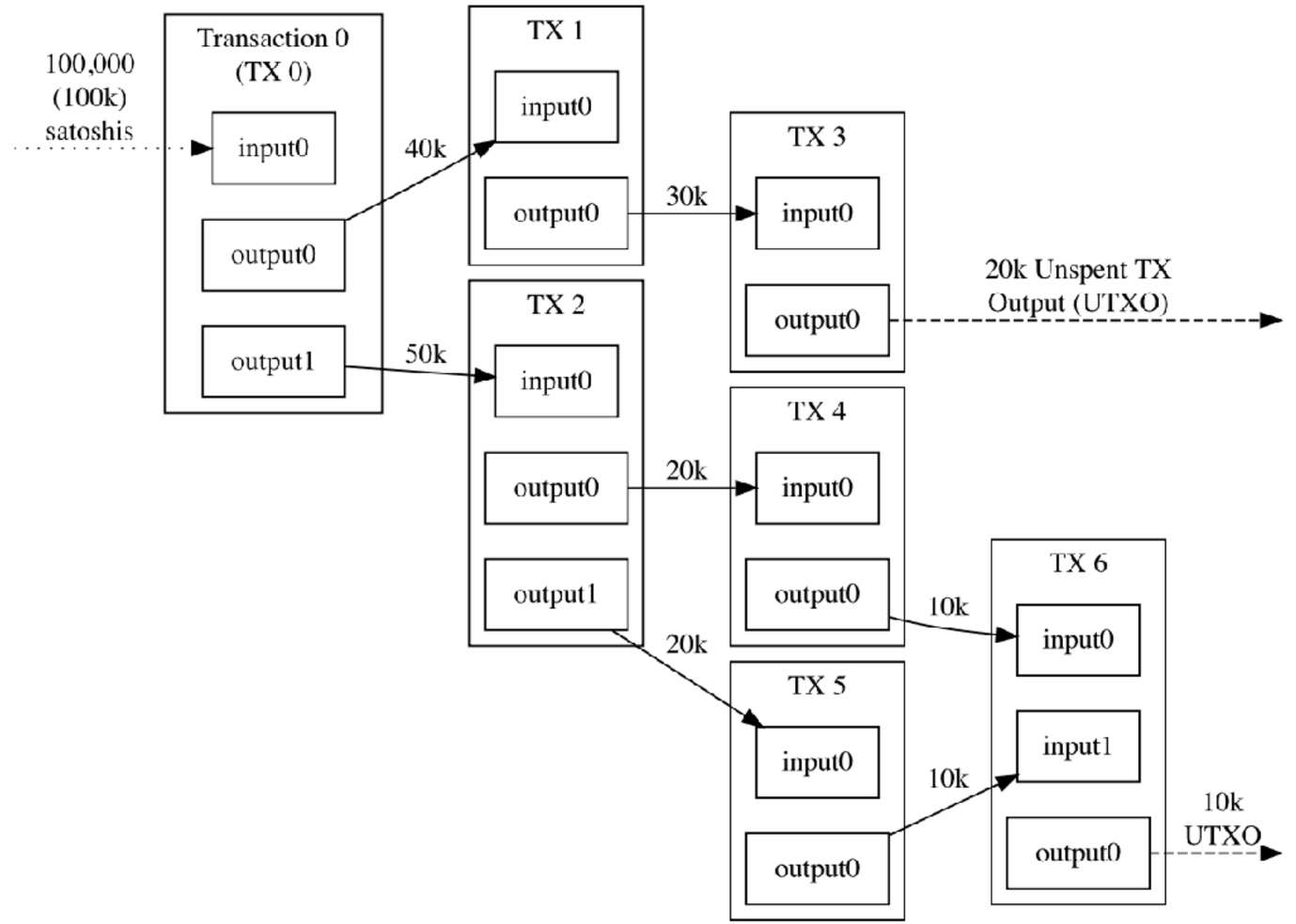


Map shows concentration of reachable Bitcoin nodes found in countries around the world.

LIVE MAP

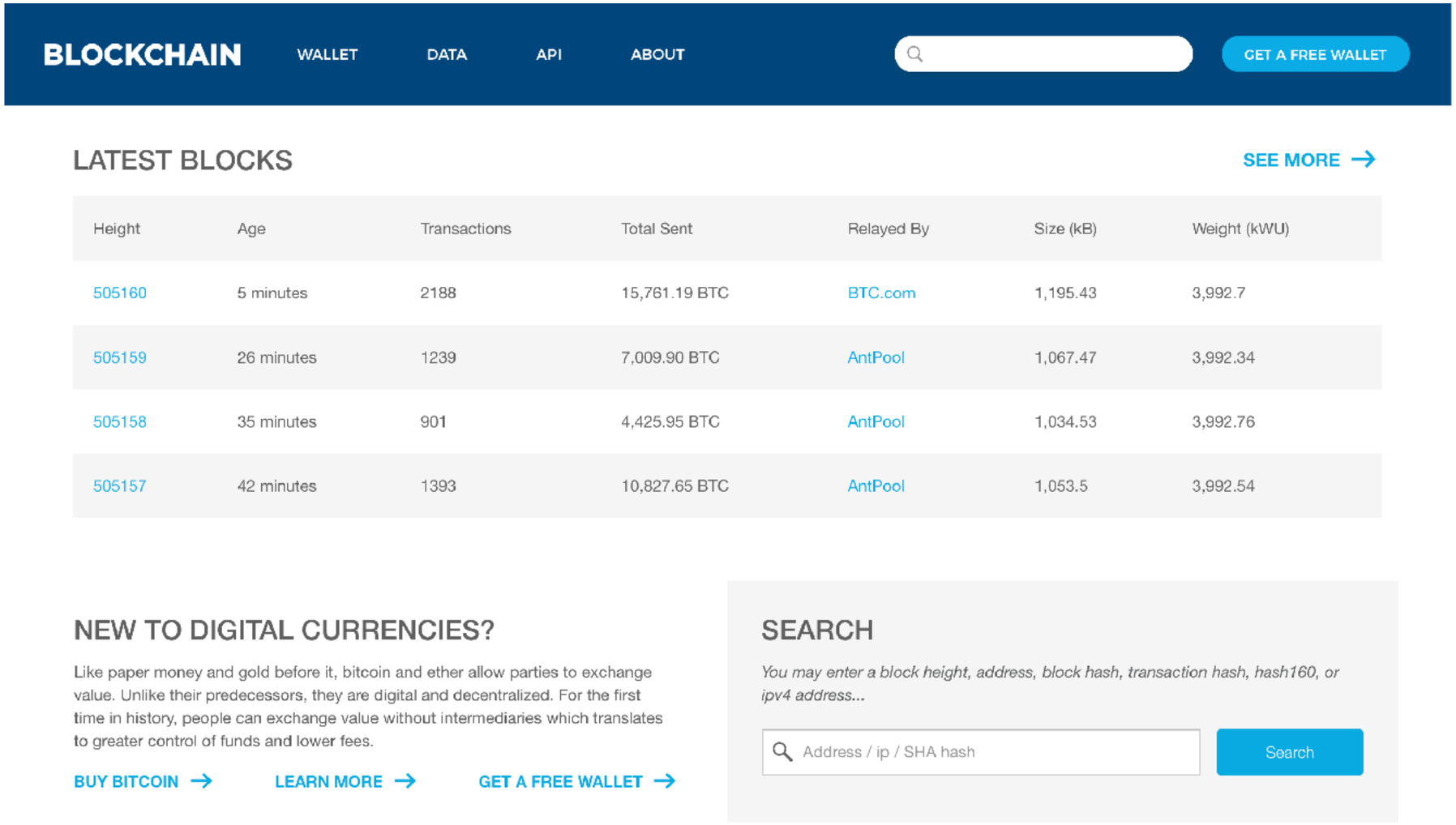
Bitcoin Developer Guide

https://bitcoin.org/en/developer-guide



Triple-Entry Bookkeeping (Transaction-To-Transaction Payments) As Used By Bitcoin

BLOCKCHAIN.info



we are going to use BLOCKCHAIN's api->>> https://blockchain.info/api

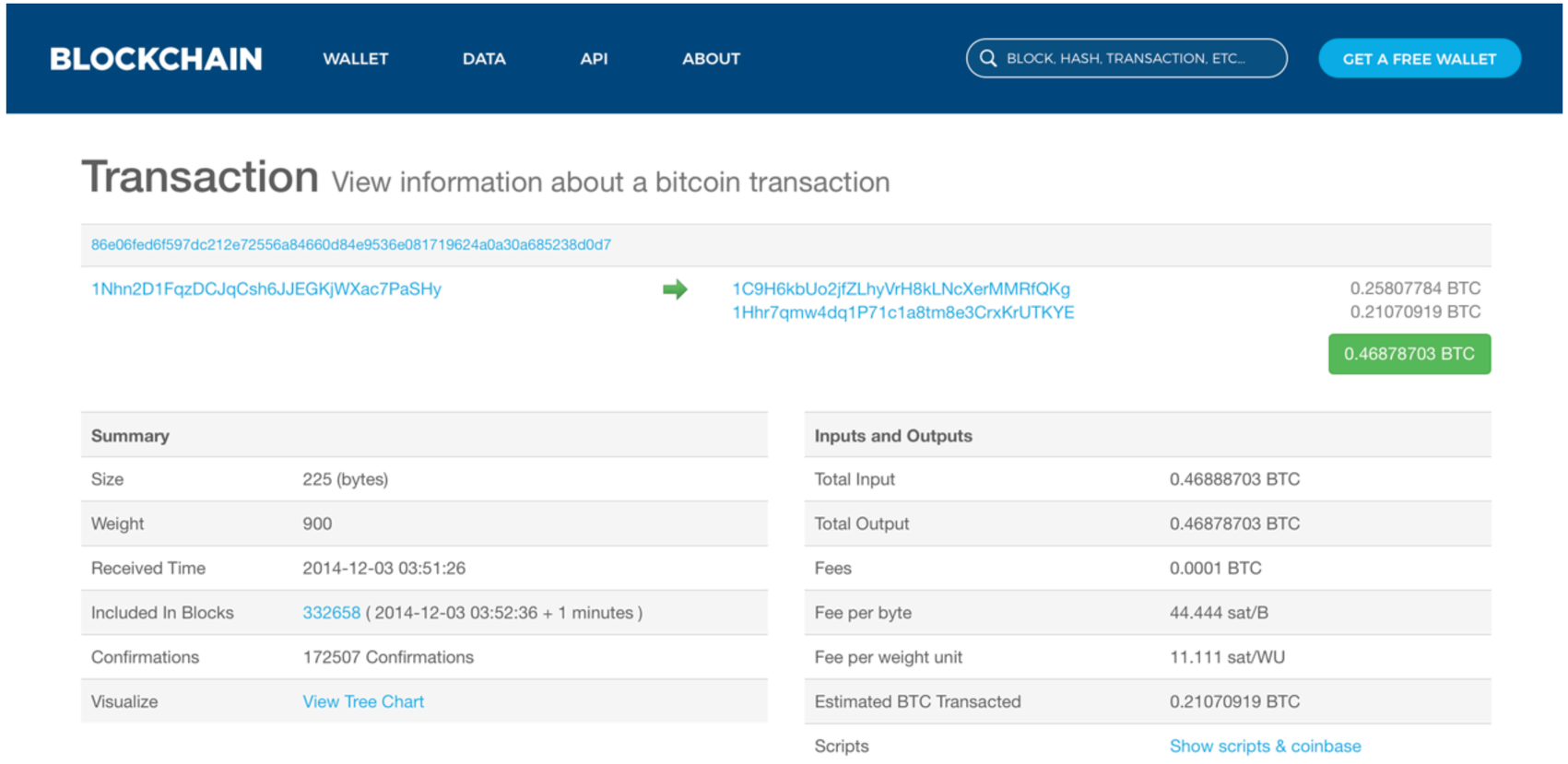
The number of daily confirmed Bitcoin transactions at BLOCKCHAIN.info

https://blockchain.info/charts/n-transactions?timespan=all&daysAverageString=7

View information about a bitcoin transaction

ex. a view of txid = 86e06fed6f597dc212e72556a84660d84e9536e081719624a0a30a685238d0d7

https://blockchain.info/tx/86e06fed6f597dc212e72556a84660d84e9536e081719624a0a30a685238d0d7



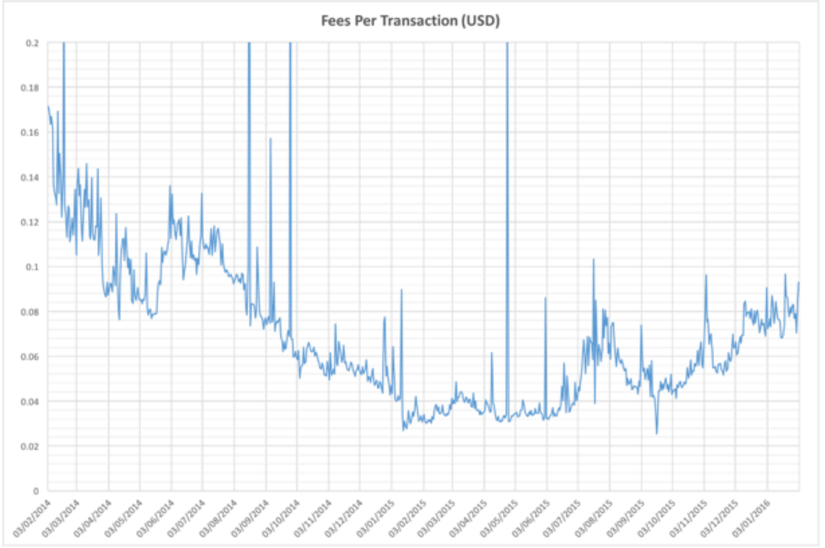
we can get this view data by call BLOCKCHAIN API

Important Articles about Bitcoin () at #hashingit.com

http://hashingit.com/analysis

A Market For Bitcoin Transaction Fees?

Details
Published: 03 February 2016

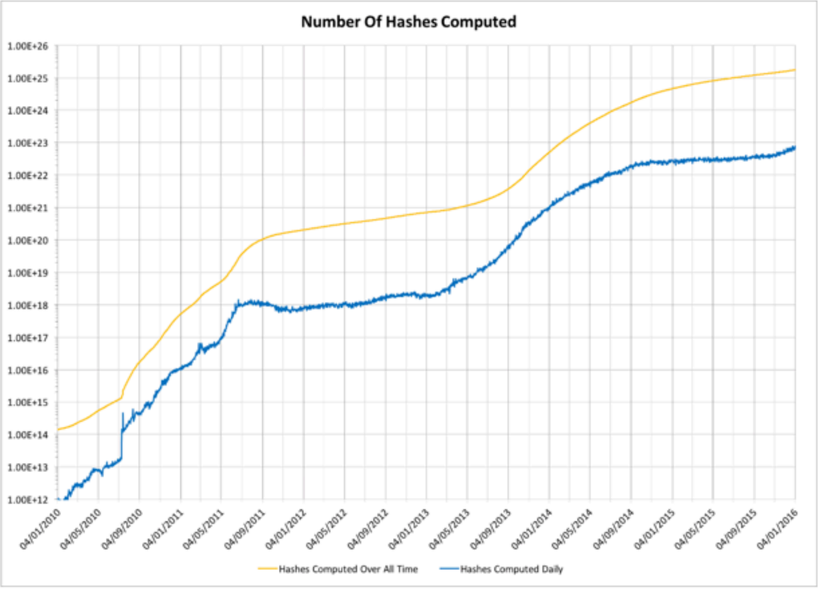


Most participants in the ongoing Bitcoin block size debates have a point of agreement; that a shortage of block space should have an effect on transaction fees. Arguments aside, then, let's see what has actually been happening. Are fees going through the roof? Are miners going to be celebrating a potential offset to the block reward halving that looms in July 2016? The results seem a little surprising!

Read more: A Market For Bitcoin Transaction Fees?

Behold Mighty Exahash, Hammer Of The Blocks!

Details
Published: 06 January 2016



"Exahash" sounds like it could well have been the hammer of the Norse Gods of old as it defeated all in battle. In the Bitcoin world of early 2016, however, a mining network that achieves one exahash per second will soon become part of the new folklore. It will, as others before it, quantitatively destroy all earlier incarnations of itself.

Common wisdom that this ever-increasing hash rate makes the Bitcoin network continually stronger, but what does that strength mean? What is it stronger than? What guarantees does it offer? The answer, as so often, is perhaps less clear-cut than we might first imagine!

Read more: Behold Mighty Exahash, Hammer Of The Blocks!

More info

http://lopp.net/bitcoin.html

Example of visualization

1. convert value to position
2. convert value to size
3. convert value to speed
4. convert value to color

Example of mining

1.Check the specific address’s activity
(find by address)

2.Find the most active address.
(sort by transaction frequency)

3.Visualize the timeline
(timestamp, tx_in)

4. Animate the timeline
(timestamp, tx_in)