Bitcoin On-Chain Network Simulator

This a Java Script P5 static simulation (does not record data) intended for briefs explanations of computing network communications. It follows the most basic concepts of the Bitcoin on-chain network, like mining and decentralization of data, of which gives an automatic demonstration in a accelerated time frame.

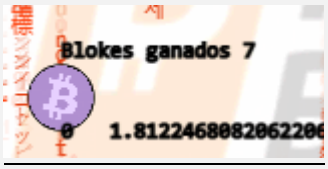
The simulation is by no means accurate in its representation of the Bitcoin on-chain network, and is thought as a superficial first (graphic) visualization of the logical process that goes on the network, intended for new learners who lack an understanding of computing networks and a like concepts, the missing of which represent an important barrier in the learning curve of Bitcoin and its benefits.

The simulation is composed of 3 core object-concepts; 1- the miner, 2- the node and 3- the wallet.

In order to simulate the network accurately enough without having to translate the actual code to Java Script, it´s being built using the concept of neural networking, a neuron is a node, and the machine learning capacity has been left out of the process to only use the communication capability of the network.

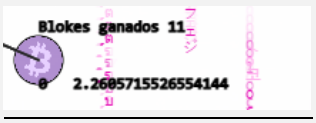
1) The Miner

Purple Bitcoin logo represents a miner



The miners simulate actually pretty accurately the mining process, but instead of guessing the hexadecimal hash, it pics random numbers until it does within certain parameter, which gives it a window of 10 seconds per block on average (or that´s the idea).

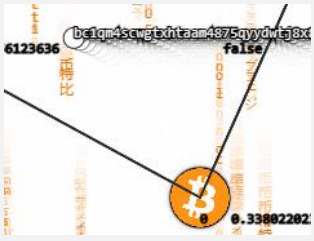
Once a Block is mined, the miner sends a message to all the miners and nodes, within 350 pixels of distance of it, containing a value of a random number between 0 and 3, dividing the number with all the connections



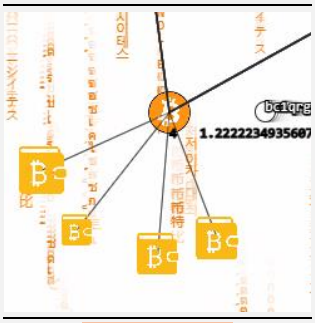
The miner accumulates values sent to it until surpasses 3 units, then it sends the value back through all its connections

2) *The Node*

Orange classic Bitcoin logo serves as the node concept image, they connect automatically to any miner or node within 350 pixels of distance, and to any wallet with in 150 pixels.

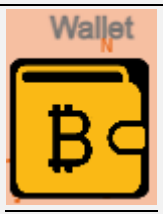


The node serves as a connection between other nodes and miners, it accumulates values sent to it and sends it back when they get to 3 units.



The node can generate its own input into the network by connecting to wallets, each wallet gives the node a +1 in the ratio in which generates value.

3) *The Wallet*



Yellow wallet logo, they just exist to connect to nodes, they can connect to multiples nodes. The purpose is to represent a user interacting with the network via its wallet, telling nodes to move information (the Bitcoin) in the network.

It still needs to be use in order to find bugs, areas of improvement and efficiency aspects, it can be deployed in mpb´s web as a didactive resource, it weighs less than 2 Mb, n that's it, so let me know what you think.