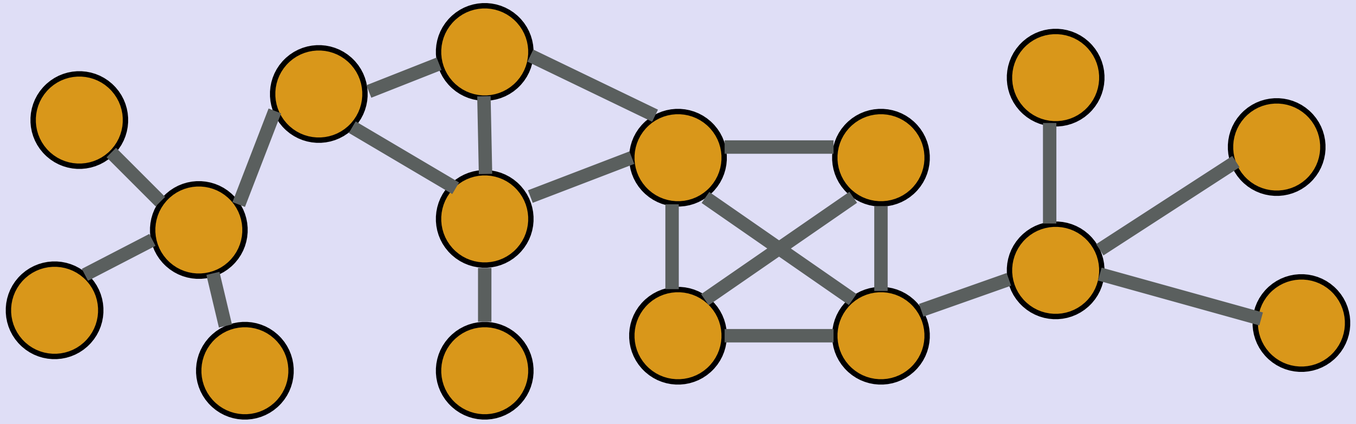
BLOCKCHAIN TUTORIAL 21

Peer-to-peer network, propagation and latency

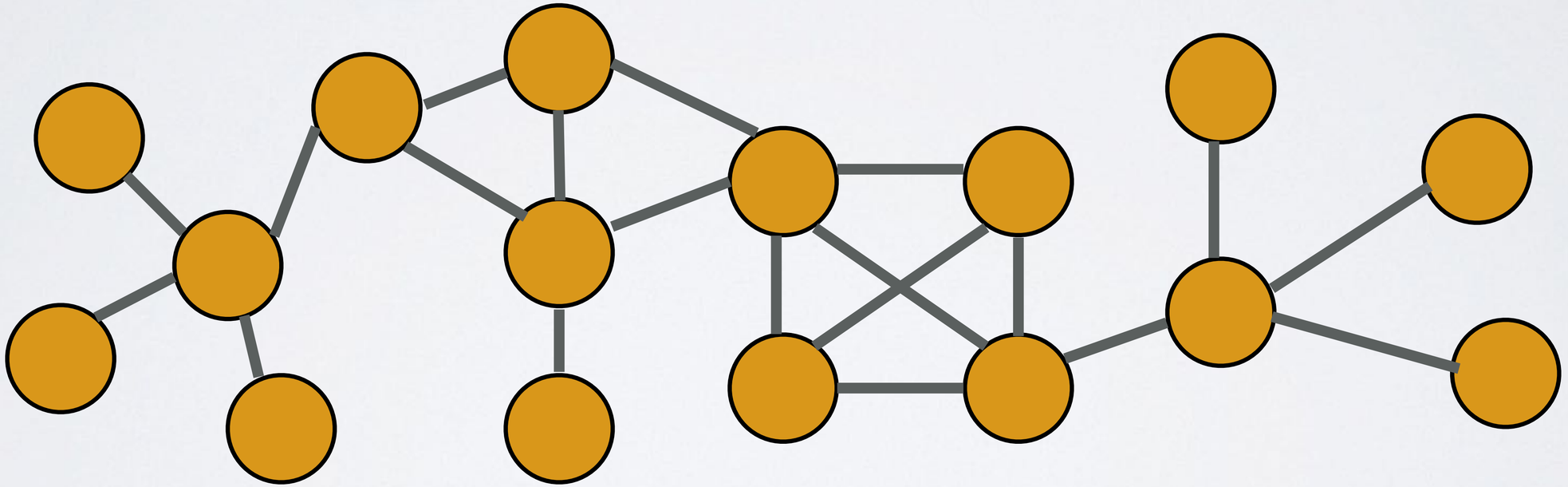


PURPOSE OF THIS VIDEO

- In this video I will explain what a peer-to-peer network is and what propagation and latency means. These words are often used in the blockchain ecosystem and for non-technical people it may be helpful to understand the meaning of these words.

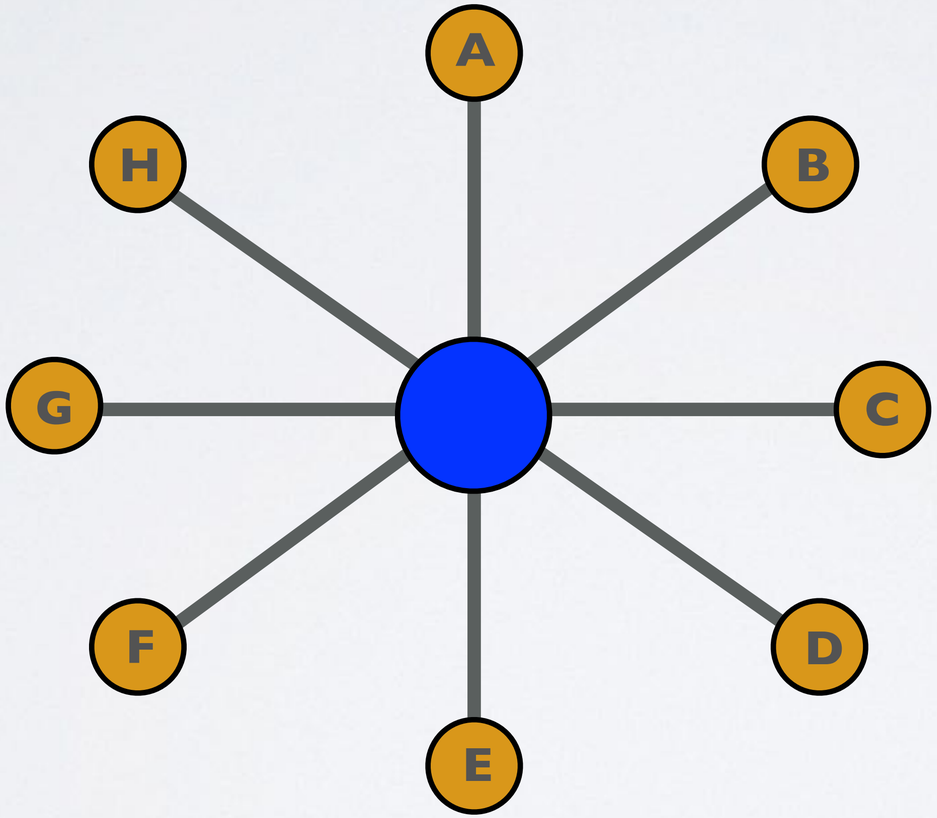
PEER-TO-PEER / DECENTRALISED NETWORK

- A peer-to-peer or decentralised network is a group of independent computers called nodes which are interconnected with each other to share data among each other without the use of a centralised computer. In this example each node has the same capabilities (= they are equal to each other) hence the word "peer".



CENTRALISED NETWORK

- In a centralised network there is one central node where all nodes send their data to. The central node then send the data to the intended recipient.



BITCOIN PEER-TO-PEER NETWORK

Bitcoin peer-to-peer network. Source: https://bitnodes.21.co

GLOBAL BITCOIN NODES DISTRIBUTION

Reachable nodes as of Tue Apr 11 2017 14:28:05 GMT+0200 (CEST).

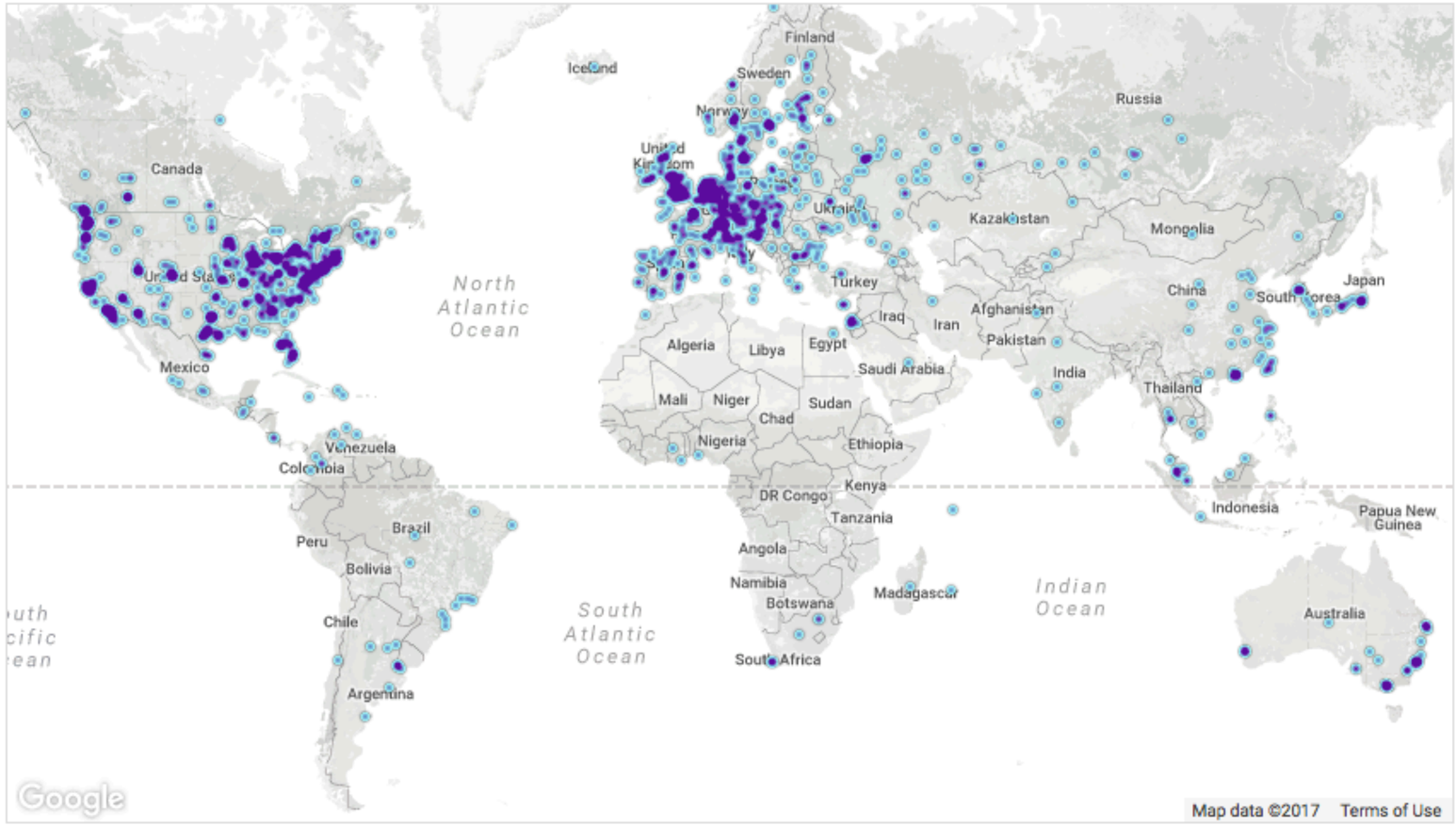
6966 NODES

24-hour charts »

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

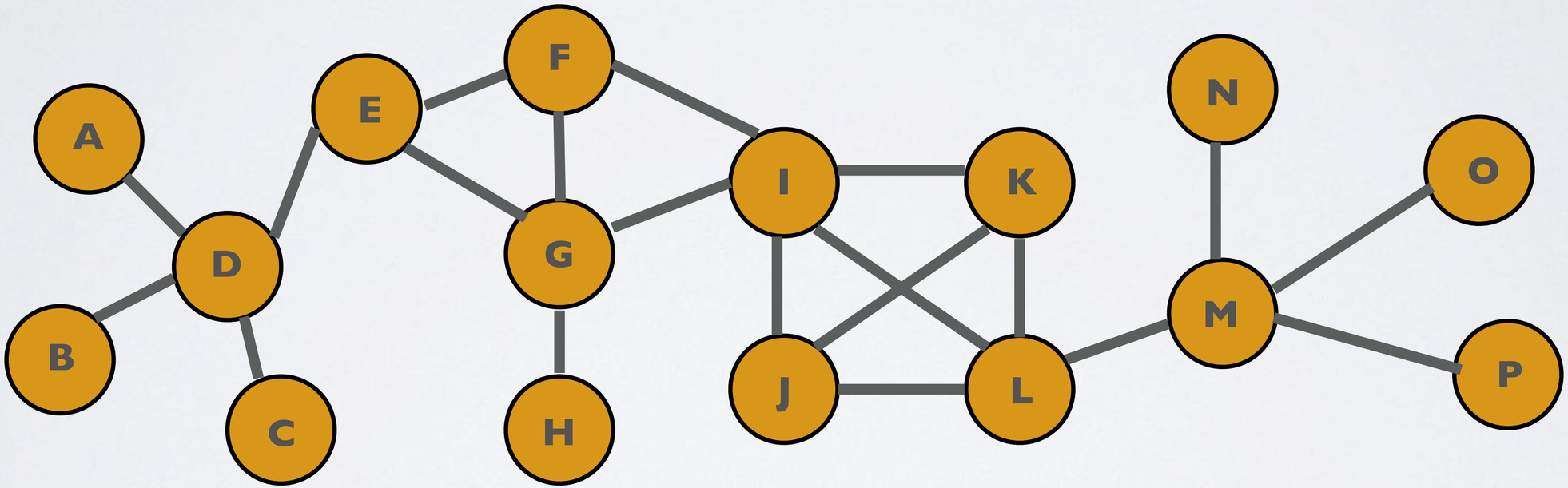
RANK	COUNTRY	NODES
1	United States	1921 (27.58%)
2	Germany	1396 (20.04%)
3	France	469 (6.73%)
4	Netherlands	398 (5.71%)
5	United Kingdom	293 (4.21%)
6	Canada	287 (4.12%)
7	n/a	263 (3.78%)
8	China	204 (2.93%)
9	Russian Federation	179 (2.57%)
10	Switzerland	115 (1.65%)

More (91) »



PROPAGATION

- When data is moved from one node to another it is called data propagation.
- It takes time to propagate the same data to all nodes in the network.



LATENCY

- Network latency is the term used to indicate any kind of delay that happens in data communication over a network. Latency is the time it takes for data to travel from its point of origin to the point of destination. Low latency means small delay times, while high latency means long delays.

- There are many factors which contributes to latency. For example: delay caused by data propagation over long distance or intercontinental communication via undersea cables. Delay caused by transmitting data through routers/switches.