

## What is Consensus?

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Consensus mechanisms make sure all nodes are synchronized with each other and agree on which transactions are legitimate and are added to the blockchain.

Consensus algorithm may be defined as the mechanism through which a blockchain network reaches consensus.

A decentralized system without a common consensus will fall into pieces in a second.

Consensus assure that the protocol rules are being followed and guarantee that all transactions occur in a trustless way.

There are some specific goals in the Blockchain consensus protocol, such as agreement, collaboration, cooperation, equal rights for each node, and mandatory participation of each node in the consensus process.

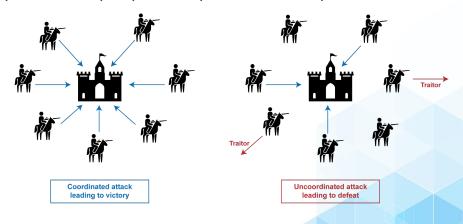
## Byzantine General Problem



Byzantine Generals Problem was a logical dilemma that illustrates how a group of Byzantine generals may have communication problems when trying to agree on their next move.

They are facing two very distinct problems:

- The generals and their armies are very far apart, so centralized authority is impossible, that makes coordinated attack very tough.
- The city has a huge army, and the only way that they can win is if they all attack at once.



## Types of Consensus Algorithms



