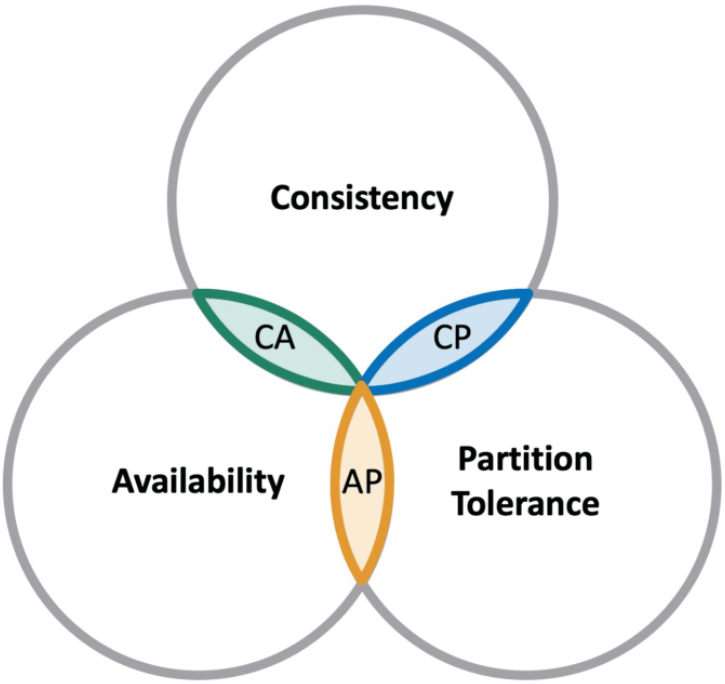
5: CAP Theorem



In a distributed system, only 2 of these 3 properties can be possible:

Consistency: Every node in a distributed cluster returns the same, most recent and successful writes. Bank account balances and text messages are examples of Consistent databases. Database options for consistency are MongoDB, Redis, and Hbase.

Availability: Availability means that each read or write request for a data item will either be processed successfully or will receive a message that the operation cannot be completed. Database options for availability are **Cassandra, DynamoDB** etc. eg. E-commerce.

Partition Tolerance: The system can continue operating even if the network connecting the nodes has a fault that results in two or more partitions, where the nodes in each partition can only communicate with each other. That means, the system continues to

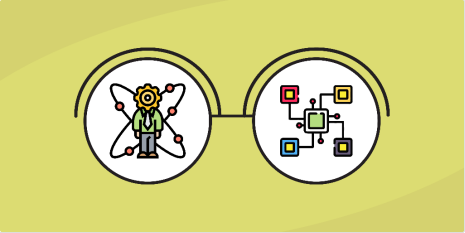
function and upholds its consistency guarantees in spite of network partitions. eg. Trading platform

Resources:

System design fundamentals: What is the CAP theorem?

Today, we'll dive deeper into the CAP theorem, explaining its meaning, its components, and more.

https://www.educative.io/blog/what-is-cap-theorem



https://blog.tryexponent.com/cap-theorem/#:~:text=Partition tolerance means being able,case of a network partition