CAP theorem is a desirable property of distributed system with replicated data. That means the system has multiple DB node located in different region of the world but they have same data.

Here C stands for consistency, A stands for availability and P stands for partition tolerance.

Consistency means there will be same data in every node of db and every user will get the same data.

Availability means api response is always available whether its fail or successful. That means every node of db is available.

Partition tolerance means if there is partition or no connection between multiple nodes of db the system will not be down.

According to CAP theorem it is not possible in a system to achieve all the three desirable property. You can achieve maximum two.

If you want to achieve CA means consistency and availability, you have to loose partition tolerance. If you want to achieve AP means availability and partition tolerance you have to loose consistency. If you want to achieve CP means consistency and partition tolerance you have to loose availability.

CP => At the same time two users are getting data from two different nodes you have you make the other node unavailable so that the other node get some time to sync with the data and user did not get wrong data. And if partition happens between two nodes. To we will replicate the node and fix the partition. For example banking system, stock market analysis system, ticket booking system.

AP => It does not matter whether every users get the same data from every node of the db. But the every node is always available. If partition happens, it will fix it, not the whole system will stop operating. For example: social media, blogs, video streaming, chat application.

CA => As there is only one node so every user will make request to one node so ultimately every user will get the same data. As every user hitting the same node so the data and response will always be available. But if something happens in that single node the whole system will be shut down. For example: centralized system, monolithic system.

Its important to make the system partition tolerance. So you can only choose between CP or AP.