Conflict free Redundant data types CRDT

* Simplify distributed data storage system and multi-user applications.

* One of the major application of CRDT's is concurency.

* TO achieve concurency there are broadly two way.
  1. Strong Consistent replication
  2. Optimistic replication

* Strong Consistent Replication

Here replicas coordinates with each other to decide what will be the order of changes or how to apply final changes.

This approch enables strong consistancy hence suitable for achieving Serialization and linearization.

But Disadvantages is that it is time consuming and if any open devices/ repicas are disconnected will result in all replicas to stop making since all need to be connected.

✱ Optimistic Replication

✱ This approach let users modify data of replicas independently of any other replica. even if it is offline / disconnected.

✱ This approches helps to maxims performance and availability.

✱ It also leads to Conflicts when multiple clients modify replicas concurrently This confics needs to resolve when replicas communicate with Each other.

✱CRDT's are used with Optimistic replication. Here CRDT's take care of conflicts resolution. Here data is merged in consistent state.

✱ CRDT Supports decentralization Operations