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## MAIN POINTS

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### Lesson 4 – Advanced MapReduce: Combiner & Partitioner

#### *Principle of Least Action*

Combiners provide a general mechanism within the MR framework to reduce the amount of intermediate data generated by the mappers. Partitioners are effective in deciding to which reducer the intermediate data should go to. **Science & Technology of Consciousness:** For those established in self-referral pure consciousness, the infinite organizing power of the Creator becomes the charioteer of all actions.

## MAIN POINTS

1. Combiners provide a general mechanism within the MR framework to reduce the amount of intermediate data generated by the mappers; recall that they can be understood as "mini-reducers" that process the output of mappers. **Science & Technology of Consciousness:** The most fundamental combiner is the unification of the Self with itself, which gives rise to knower, process of knowing, and known.
2. In "in-mapper combining", where the functionality of the combiner is moved into the mapper, instead of emitting intermediate output for every input key-value pair, the mapper aggregates partial results across multiple input records and only emits intermediate key-value pairs after some amount of local aggregation is performed. **Science & Technology of Consciousness:** Different patterns are found in Nature but they are all connected together at the level of Unified field of pure existence.
3. A large part of the power of MapReduce comes from its simplicity: in addition to preparing the input data, the programmer needs only to implement the mapper, the reducer, and optionally, the combiner and the partitioner. All other aspects of execution are handled transparently by the execution framework on clusters ranging from a single node to a few thousand nodes, over datasets ranging from gigabytes to petabytes. **Science & Technology of Consciousness:** The principle of least action is the basic design principle used by Nature.

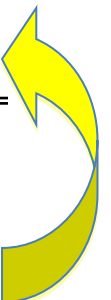
## UNITY CHART

### CONNECTING THE PARTS OF KNOWLEDGE WITH THE WHOLENESS OF KNOWLEDGE:

#### Efficient Techniques to Reduce Intermediate Data

1. Combining is a very efficient local aggregation technique.
2. Synchronization in Hadoop is achieved by turning the synchronization problem into an ordering problem or by constructing data structures that "bring the pieces together".

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3. **Transcendental consciousness:** is the source of all perfection in life.



4. Impulses within the Transcendental Field: It is these impulses that structure the universe and are within everything in the universe.
5. Wholeness moving within itself: In unity consciousness the individual functions in perfect harmony with all the laws of nature.