**Cp3**

Apply Map Reduce on the following, by applying its all steps, **Map phase, shuffle and sort ,reduce phase**

**Input:**

Document 1: "dog cat mouse"

Document 2: "cat dog bird"

Document 3: "mouse cat bird dog"

Document 4: "dog dog bird cat"

1. **Map Phase:**

* Each document is processed independently.
* The document is split into individual words.
* For each word, a key-value pair (word, 1) is emitted.

so

* Document 1: (dog, 1), (cat, 1), (mouse, 1)
* Document 2: (cat, 1), (dog, 1), (bird, 1)
* Document 3: (mouse, 1), (cat, 1), (bird, 1), (dog, 1)
* Document 4: (dog, 1), (dog, 1), (bird, 1), (cat, 1)

1. **Shuffle and Sort Phase:**

* The intermediate key-value pairs are grouped by key (word).
* This groups all occurrences of each word together.

so

* Grouped Output:
  + (dog, [1, 1, 1, 1, 1])
  + (cat, [1, 1, 1, 1])
  + (mouse, [1, 1])
  + (bird, [1, 1, 1])

1. **Reduce Phase:**

* For each key (word), the values are summed to get the total count.

so

* Reduce Output:
  + (dog, 5)
  + (cat, 4)
  + (mouse, 2)
  + (bird, 3)