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Phoenix: A MapReduce Implementation With New Enhancements

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Abstract: Lately, the large increasing in data amount results in compound and large data-sets that caused the appearance of ?Big Data? concept which gained the attention of industrial organizations as well as academic communities. Big data APIs that need large memory can benefit from Phoenix MapReduce implementation for shared-memory machines, instead of large, distributed clusters of computers. This paper evaluates the design and the prototype of Phoenix, Phoenix performance, as well as Phoenix limitations. This paper also suggests some new approaches to get over of some Phoenix limitation and enhance its performance on large-scale shared memory. The major contribution of this work is finding new approaches that get over the pairs limitation in phoenix framework using hash tables with B+Trees and get over the collisions problem of hash tables.