07 – A Comparison of Adaptive Radix Trees and Hash Tables

1. Overview of Idea
   The first experiment of ART's performance was too rough. Hash tables are not only competitive with ART, but perform better than ART, also B+Tree work well than ART. ART has better performance than Judy, but its memory consumption is as twice as Judy's.

2. Main Finding
   Some hash schemes with good hash functions have better performance than radix tree's

3. Systems used and its Specifications
   Several index implementations are used.
   A. Radix Tree
      i. Judy
      ii. ART with performance/memory optimization
   B. Hash Table
      i. Cuckoo Hashing with performance/memory optimization
      ii. Google hashing(Quadratic probing)

4. Workloads evaluated
   workloads with different key distribution, different combinations of instructions are used. Almost all experiments were done with OLTP workloads. Just one was done with range query workload. All experiments are done with single thread.