An Efficient Strategy for Collision Resolution in Hash Tables

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Abstract

This paper presents NFO, a new and innovative technique for collision resolution based on single dimensional arrays. Hash collisions are practically unavoidable when hashing a random subset of a large set of possible keys and should be seen as an event that can disrupt the normal operations or flow of hash functions computing an index into an array of buckets or slots. Hash tables provide efficient table implementations but then its performance is greatly affected if there are high loads of collisions. This new approach intends to manage these collisions effectively and properly although there are some algorithms for handling collisions currently. NFO incorporates certain features to resolve some problems of existing techniques. The performance of our approach is quantified via analytical modeling and software simulations. Efficient implementations that are easily realizable and productive in modern technologies are discussed. The performance benefits are significant and require machines with moderate memory and speed specifications. Depending on observations of the results of implementation of the proposed approach or technique on a set of real data of several types, all results are registered and analyzed.
References

- Erickson, J., 2009. Hash Tables

Index Terms

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Databases

Keywords
Hash Function Open Addressing Separate Chaining Linear Probing Quadratic Probing Double Hashing