

A NEW HASHING METHOD WITH APPLICATION FOR GAME PLAYING

Albert L. Zobrist

December 17, 2017

Abstract

A general method of hash coding is described together with an application for programs which play board games such as checkers, chess, and GO. An auxiliary method which detects retrieval errors is proposed. The error rate can be precisely controlled depending upon how much space in the hash table is devoted to the auxiliary method.

Introduction

When a computer program stores an item in a large table, subsequent reference or retrieval of that item may necessitate a search of the table. This is so unless a table address for the item can be calculated in a systematic fashion from the item itself. A function which converts items into addresses is called a hashing algorithm, and the resulting table a hash table. The application of these functions is the subject of a small and specialized literature, but will soon be covered by Knuth[1].

References

- [1] Knuth, D. The Art of Computer Programming, vol. 3 (to appear)