



Prefix B-Trees.

Rudolf Bayer, Karl Unterauer: Prefix B-Trees. [TODS 2\(1\): 11-26\(1977\)](#)

```
@article{DBLP:journals/tods/BayerU77,
  author    = {Rudolf Bayer and
              Karl Unterauer},
  title     = {Prefix B-Trees},
  journal   = {TODS},
  volume    = {2},
  number    = {1},
  year      = {1977},
  pages     = {11-26},
  ee        = {db/journals/tods/BayerU77.html},
  bibsource = {DBLP, http://dblp.uni-trier.de}
}
```

Abstract

Two modifications of B-trees are described, simple prefix B-trees and prefix B-trees. Both store only parts of keys, namely prefixes, in the index part of a B*-tree. In simple prefix B-trees those prefixes are selected carefully to minimize their length. In prefix B-trees the prefixes need not be fully stored, but are reconstructed as the tree is searched. Prefix B-trees are designed to combine some of the advantages of B-trees, digital search trees, and key compression techniques while reducing the processing overhead of compression techniques.

Copyright © 1977 by the ACM, Inc., used by permission. Permission to make digital or hard copies is granted provided that copies are not made or distributed for profit or direct commercial advantage, and that copies show this notice on the first page or initial screen of a display along with the full citation.

Joint ACM SIGMOD / IEEE Computer Society Anthology

CDROM Version: Load the CDROM "Volume 3 Issue 1, TODS 1976-1990" and ...

- Windows: Click the letter of your CD drive
A B C **D** E F G H I J K L M N O P Q R S T U V W X Y Z
- Mac: Click [here](#)
- UNIX/LINUX: mount the CD and click on the path of your *mount point*:
[/Anthology/An3-1](#) or [/cdrom](#)

DVD Version: Load **ACM SIGMOD Anthology DVD 2"** and ...

- Windows: Click the letter of your CD drive
A B C **D** E F G H I J K L M N O P Q R S T U V W X Y Z
- Mac: Click [here](#)
- UNIX/LINUX: mount the DVD and click on the path of your *mount point*:
[/Anthology/aDVD2](#) or [/dvd](#)

References

- [1] ...
- [2] Rudolf Bayer: Symmetric Binary B-Trees: Data Structure and Maintenance Algorithms. Acta Informatica 1: 290-306(1972)
- [3] Rudolf Bayer: Storage Characteristics and Methods for Searching and Addressing. IFIP Congress 1974: 440-444
- [4] Rudolf Bayer, Edward M. McCreight: Organization and Maintenance of Large Ordered Indices. Acta Informatica 1: 173-189(1972)
- [5] Rudolf Bayer, J. K. Metzger: On the Encipherment of Search Trees and Random Access Files. TODS 1(1): 37-52(1976)
- [6] Rudolf Bayer, Mario Schkolnick: Concurrency of Operations on B-Trees. Acta Informatica 9: 1-21(1977)
- [7] ...
- [8] Donald E. Knuth: The Art of Computer Programming, Volume III: Sorting and Searching. Addison-Wesley 1973, ISBN 0-201-03803-X
- [9] Robert E. Wagner: Indexing Design Considerations. IBM Systems Journal 12(4): 351-367(1973)
- [10] ...

Referenced by

1. H. V. Jagadish, Nick Koudas, Divesh Srivastava: On Effective Multi-Dimensional Indexing for Strings. SIGMOD Conference 2000: 403-414
2. Gennady Antoshenkov: Dictionary-Based Order-Preserving String Compression. VLDB Journal 6(1): 26-39(1997)
3. Gennady Antoshenkov, Mohamed Ziauddin: Query Processing and Optimization in Oracle Rdb. VLDB Journal 5(4): 229-237(1996)
4. Gennady Antoshenkov, David B. Lomet, James Murray: Order Preserving Compression. ICDE 1996: 655-663
5. Harry Leslie, Rohit Jain, Dave Birdsall, Hedieh Yaghmai: Efficient Search of Multi-Dimensional B-Trees. VLDB 1995: 710-719
6. Michael Freeston: A General Solution of the n-dimensional B-tree Problem. SIGMOD Conference 1995: 80-91
7. V. W. Setzer, Andrea Zisman: New Concurrency Control Algorithms for Accessing and Compacting B-Trees. VLDB 1994: 238-248
8. Kyu-Young Whang, Ravi Krishnamurthy: The Multilevel Grid File - A Dynamic Hierarchical Multidimensional File Structure. DASFAA 1991: 449-459
9. David B. Lomet: A Simple Bounded Disorder File Organization with Good Performance.

TODS 13(4): 525-551(1988)

10. Ratko Orlandic, John L. Pfaltz: Compact 0-Complete Trees. VLDB 1988: 372-381
11. Ekow J. Otoo: Linearizing the Directory Growth in Order Preserving Extendible Hashing. ICDE 1988: 580-588
12. Witold Litwin, D. Zegour, G. Levy: Multilevel Trie Hashing. EDBT 1988: 309-335
13. Anil K. Garg, C. C. Gotlieb: Order-Preserving Key Transformations. TODS 11(2): 213-234(1986)
14. Witold Litwin, David B. Lomet: The Bounded Disorder Access Method. ICDE 1986: 38-48
15. George P. Copeland, Setrag Khoshafian: A Decomposition Storage Model. SIGMOD Conference 1985: 268-279
16. Motomichi Toyama, Shoji Ura: Fixed Length Semiorder Preserving Code for Field Level Data File Compression. ICDE 1984: 244-252
17. Ashok Malhotra, H. M. Markowitz, Donald P. Pazel: EAS-E: An Integrated Approach to Application Development. TODS 8(4): 515-542(1983)
18. David B. Lomet: A High Performance, Universal, Key Associative Access Method. SIGMOD Conference 1983: 120-133
19. Arnold L. Rosenberg, Lawrence Snyder: Time- and Space-Optimality in B-Trees. TODS 6(1): 174-193(1981)
20. David B. Lomet: Digital B-Trees. VLDB 1981: 333-344
21. Y. Edmund Lien, Jonathan E. Shopiro, Shalom Tsur: DSIS - A Database System with Interrelational Semantics. VLDB 1981: 465-477
22. Witold Litwin: Trie Hashing. SIGMOD Conference 1981: 19-29
23. Ehud Gudes, Shalom Tsur: Experiments with B-Tree Reorganization. SIGMOD Conference 1980: 200-206
24. Douglas Comer: The Ubiquitous B-Tree. ACM Computing Surveys 11(2): 121-137(1979)
25. Anthony I. Wasserman: The Data Management Facilities of PLAIN. SIGMOD Conference 1979: 60-70
26. Arnold L. Rosenberg, Lawrence Snyder: Compact B-Trees. SIGMOD Conference 1979: 43-51
27. David B. Lomet: Multi-Table Search for B-Tree Files. SIGMOD Conference 1979: 35-42

ACM SIGMOD Anthology - DBLP: [[Home](#)] | **Search:** [Author](#), [Title](#) | [Conferences](#) | [Journals](#)

TODS, ACM SIGMOD Anthology: Copyright © by ACM (info@acm.org), Corrections: anthology@acm.org
DBLP: Copyright © by Michael Ley (ley@uni-trier.de), last change: Thu Jan 30 17:45:05 2003