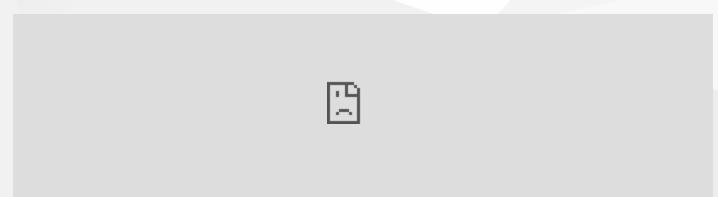
CE205 Data Structures

Week-13

Introduction to File Organization and Processing Sequential File Organization, Direct File Organization Hash Methods

Download PDF, DOCX, SLIDE, PPTX



- File Organization
 - Sequential File Organization
 - Binary Search
 - Interpolation Search
 - Self-Organizing Sequential Search



CE205 Outline 2 Week-13

- File Organization
 - Direct File Organization
 - Locating Information
 - Hashing Functions (MD5, HAVAL, SHA1 etc.)
 - Key mod N
 - Key mod P
 - Truncation
 - Folding
 - Squaring
 - Radix Conversion
 - Polynomial Hashing
 - Alphabetic Keys
 - Collisions



- File Organization
 - Direct File Organization
 - Collision Resolution
 - Collision resolution with links
 - Collision resolution without links
 - Static positioning of records
 - Dynamic positioning of records
 - Collision resolution with pseudolinks



- File Organization
 - Direct File Organization
 - Coalesced Hashing
 - EISCH
 - LISCH
 - BEISCH
 - BLISCH
 - REISCH
 - RLISCH
 - EICH
 - LICH



- File Organization
 - Direct File Organization
 - Progressive Overflow
 - Linear Probing
 - Quadratic Probing
 - Double Hashing
 - Use of Buckets
 - Linear Quotient
 - Brent's Method



- File Organization
 - Direct File Organization
 - Binary Tree
 - Computed Chaining Insertion(CCI)
 - Comparison of Collision Resolution Methods
 - Perfect Hashing
 - SimHash



File Organization

Sequential File Organization

- Binary Search
 - https://www.scss.tcd.ie/Owen.Conlan/4d2/4D2-4_File_Sorting_v1.pdf
 - https://www.programiz.com/dsa/binary-search
- Interpolation Search
 - https://www.geeksforgeeks.org/interpolation-search/
- Self-Organizing Sequential Search
 - https://people.csail.mit.edu/rivest/pubs/Riv76a.pdf
 - https://xlinux.nist.gov/dads/HTML/selforganizingSequentialSearch.html
 - https://xlinux.nist.gov/dads/HTML/transposeSeqSearch.html



File Organization

Direct File Organization

Locating Information



Hashing Functions (MD5, HAVAL, SHA1 etc.)

- Key mod N
- Key mod P
- Truncation
- Folding
- Squaring
- Radix Conversion
- Polynomial Hashing
- Alphabetic Keys
- Collisions



Hashing Functions (MD5, HAVAL, SHA1 etc.)

- http://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212fo/lectures/pdf-files/bil212-chp6-2.pdf
- https://www.amirajcollege.in/wp-content/uploads/2020/06/3130702-chapter-4-hashing-and-file-structure.pdf
- https://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212fo/lecture_notes.htm
- https://www.cs.otago.ac.nz/cosc242/pdf/L09.pdf
- https://www.cs.otago.ac.nz/cosc242/pdf/L10.pdf



- Collision resolution with links
- Collision resolution without links
- Static positioning of records
 - https://www.cs.bilkent.edu.tr/~canf/CS351Fall2010/cs351lecturenotes/week5/index.html
- Dynamic positioning of records
 - https://www.cs.bilkent.edu.tr/~canf/CS351Fall2010/cs351lecturenotes/week5/index.html
- Collision resolution with pseudolinks
 - https://www.cs.bilkent.edu.tr/~canf/CS351Fall2010/cs351lecturenotes/week6/index.html
- http://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212-

CE205 Data Structures Week-13 Coalesced Hashing

- EISCH
- LISCH
- BEISCH
- BLISCH
- REISCH
- RLISCH
- EICH
- LICH
- https://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212fo/lectures/pdf-files/bil212-chp6-2.pdf

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Progressive Overflow

- Linear Probing
 - https://en.wikipedia.org/wiki/Linear_probing#:~:text=Linear probing is a scheme,by Gene Amdahl%2C Elaine M.
- Quadratic Probing
 - https://www.geeksforgeeks.org/quadratic-probing-in-hashing/
- https://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212fo/lectures/pdf-files/bil212-chp6-2.pdf



Double Hashing

- https://www.geeksforgeeks.org/double-hashing/
- https://www.geeksforgeeks.org/hashing-set-3-open-addressing/



Use of Buckets

• https://www.geeksforgeeks.org/file-organization-in-dbms-set-4/



Linear Quotient

 http://www.cs.bilkent.edu.tr/~kdincer/teaching/spring1999/bu-bil212fo/lectures/pdf-files/bil212-chp6-2.pdf



Brent's Method

- https://github.com/ncilengir/brent-hashing
- https://cseweb.ucsd.edu//~kube/cls/100/Lectures/lec17.brentsordered/lec17.pdf



Binary Tree

- https://stackoverflow.com/questions/8801898/representing-a-binary-tree-in-a-file
- https://www.geeksforgeeks.org/serialize-deserialize-binary-tree/
- https://www.cs.otago.ac.nz/cosc242/pdf/L12.pdf



Computed Chaining Insertion(CCI)

• https://www.geeksforgeeks.org/c-program-hashing-chaining/



Comparison of Collision Resolution Methods

• https://web.itu.edu.tr/~bkurt/Courses/blg341/lectures_full.pdf



Perfect Hashing

• http://www.cs.otago.ac.nz/cosc242/pdf/L11.pdf



SimHash

• Similar Hash



$$End-Of-Week-13$$

