Search Engines

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CSC220 Programming II – Spring 2019

Hard Disk as Map

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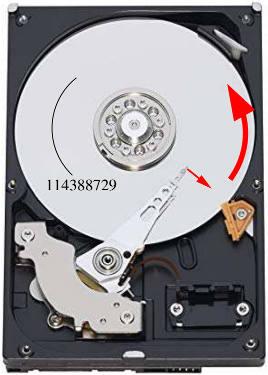
Hard Disk as Map



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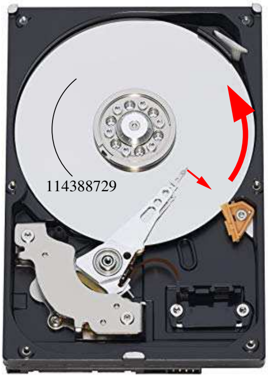

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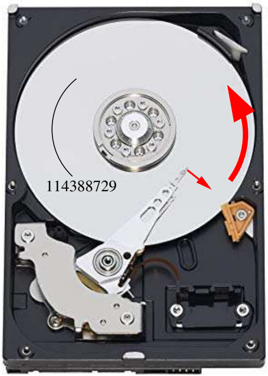

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Hard Disk as Map

A hard disk is really a Map from Long to File.

- Disk files are one or more *blocks*.
- Disk controller takes block *index*.
- Moves read head to correct track.
- Waits for disk to rotate to beginning of file.
- In about one millisecond.
- Read or writes file.

Page and Word Files

Page file:

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- page file index (redundant)

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- 27(edu.miami.cs.www/˜vjm/csc220/google/little.html)2

Word file:

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Word file:

- list of page file indices
- 16(water)[3, 7, 11, 14, 16, 19, 20, 27]

Page and Word Files

Page file:

- page file index (redundant)
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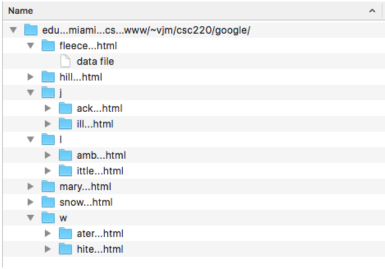
- 27(edu.miami.cs.www/˜vjm/csc220/google/little.html)2

Word file:

- list of page file indices
- 16(water)[3, 7, 11, 14, 16, 19, 20, 27]
- We get its index and string from context.

External Compressed TRIE

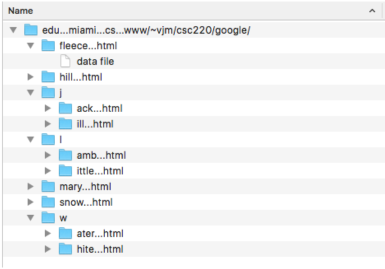


Name

- edu...miami...cs...www/~vjm/csc220/google/
  - fleece...html
    - data file
  - hill...html
  - j
    - ack...html
    - ill...html
  - l
    - amb...html
    - ittle...html
  - mary...html
  - snow...html
  - w
    - ater...html
    - hite...html

Map from URL to index

External Compressed TRIE



```
Name
▼ edu...miami...cs...www/~vjm/csc220/google/
    ▼ fleece...html
          data file
    ▶ hill...html
    ▼ j
        ▶ ack...html
        ▶ ill...html
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    ▼ w
        ▶ ater...html
        ▶ hite...html
```

Map from URL to index

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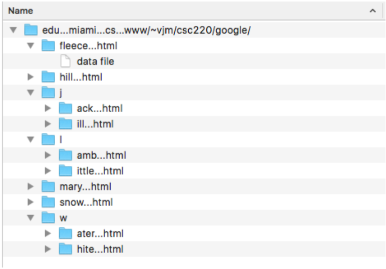

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Name
edu...miami...cs...www/~vjm/csc220/google/
    fleece...html
        data file
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    j
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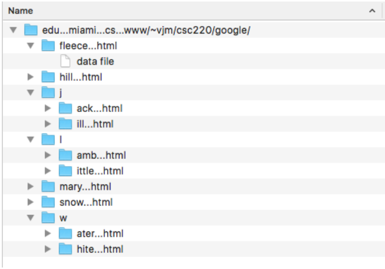
Map from URL to index

- Compressed External TRIE
- . replaced by ... for technical reasons

External Compressed TRIE



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Map from URL to index

- Compressed External TRIE
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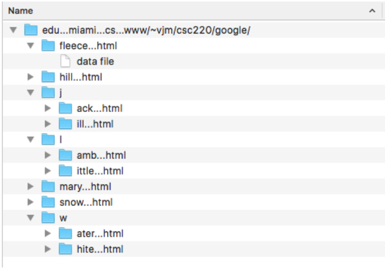
- sub from internal TRIE is now folder name

External Compressed TRIE



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```

Map from URL to index

- Compressed External TRIE
- . replaced by ... for technical reasons
- sub from internal TRIE is now folder name
- value is stored in data file in folder