Publishing a Book

1st edition
Publishing a Book

1st edition

changes:

Databases
by Jens Dittrich
Publishing a Book

1st edition

changes:

page 23:
"database" → "database"
Publishing a Book

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changes:

page 23:
"database" → "database"

page 345:
"idex" → "index"
Publishing a Book

1st edition

Databases
by Jens Dietrich

changes:

page 23:
“database” → “database”

page 345:
“idex” → “index”

page 77:
“idex” → “index”

2nd edition
Create a 2nd Edition

2nd edition

changes:

page 75: “kamera” → “camera”
Create a 2nd Edition

2nd edition

changes:

page 75:
“kamera” → “camera”

page 143:
“big date” → “big data”
Create a 2nd Edition

2nd edition

changes:

page 75:
“kamera” → “camera”

page 143:
“big date” → “big data”
new chapter on “tools”
Create a 3rd Edition

3rd edition

changes:
Create a 3rd Edition

3rd edition

changes:

page 55:
“profi“ → “profile“
Differential “File“

current edition

Read-only File

changes:

Read/Write DiffFile

= yet another instance of: The Batch Pattern and The All Levels are Equal Pattern
Advantages

may be applied at almost any level, e.g. entire databases, files, indexes (disk or main memory), tables, blocks, pages, rows, ...

cheap writes (not necessarily sequential)

DiffFile corresponds to incremental backup
Advantages

may be applied at almost any level, e.g. entire databases, files, indexes (disk or main memory), tables, blocks, pages, rows, ...

cheap writes (not necessarily sequential)

DiffFile corresponds to incremental backup

Read-only File corresponds to snapshot

merge -> defragment blocks on storage medium

easy to implement
Drawbacks

expensive reads
Drawbacks

expensive reads

additional write costs: merge costs need to be amortized!

extra storage space

"truth" = Read-only File + DiffFile(s)
Example: Merging DiffFiles

- Frame 0:
  - File v0
  - DiffFile 0

- Queries
- Changes
Example: Merging DiffFiles

- **Frame 0**: RW File v0
- **Frame 1**: RW File v1, DiffFile 0
- **Frame 2**: RW File v1, DiffFile 0, DiffFile 1
- **Frame 3**: Changes

Merge

Time
Example: Merging DiffFiles

Frame 0

Frame 1

Frame 2

RW File v1

RW DiffFile 1

Frame 3

Time
Example: Merging DiffFiles

frame 0

frame 1

frame 2

frame 3

time

RW File v1

RW DiffFile 1

RW File v2

RW DiffFile 2

Query

Change
Example: Merging DiffFiles

frame 0

frame 1

frame 2

frame 3

time

RW File v2

RW DiffFile 2