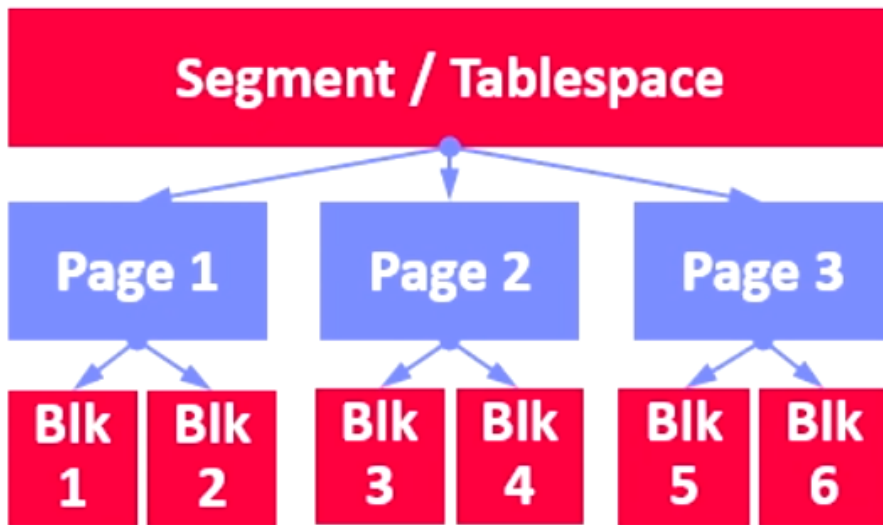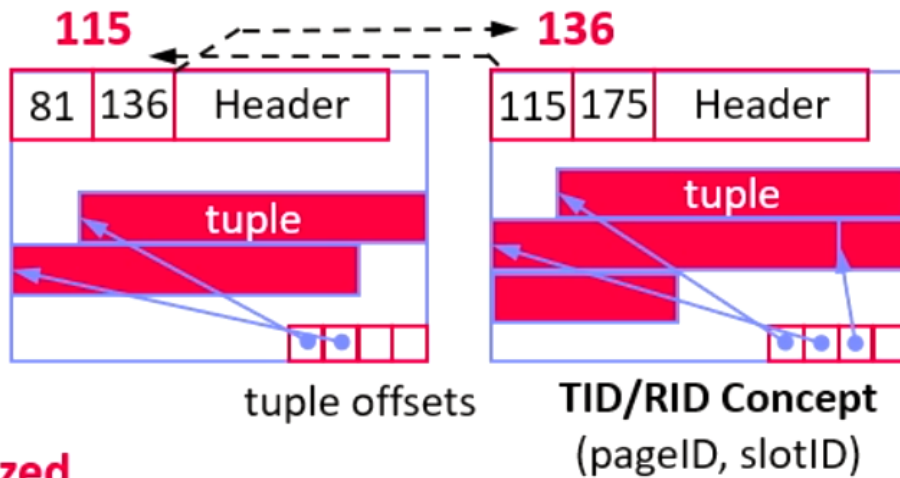Segments, Pages and Blocks

- segments
  - storage unit of DB objects
  - such as relations (heap) and indexes
- page
  - fixed-size memory region
  - postgres 8KB by default
- block
  - smallest addressable unit on disk

-

Buffer & Storage Management

- buffer management at granularity of pages
- different table/page layouts possible
  - NSM
  - DSM
  - PAX
  - column
- TID/RID concept
  - tuple/row identifier
  - stable ID, even if records reorganized in memory
  - allows reorganizing data without altering address references

115 ⇠- - - - -⇢ **136**

| 81 | 136 | Header |

tuple

tuple offsets

| 115 | 175 | Header |

tuple

TID/RID Concept
(pageID, slotID)

– **ized**

– page slot directory holds tuple offsets (byte position) within page

- Recap: Papers(PKey, Title, Pages, CKey, JKey)
- Hidden CTID system column (not shown on *, but usable)

```
SELECT CTID, PKey,
       Title, Pages
  FROM Papers
```

	ctid tid	pkey integer	title character varying (512)	pages character va
5681	(78,21)	731118	MV-IDX: Multi-Version Index in Action	671-674
5682	(78,22)	731121	Hochperformante Analyse von Graph-Dat...	311-330
5683	(78,23)	731122	SPARQling Pig - Processing Linked Data wi...	279-298
5684	(78,24)	731123	RelaX: A Webbased Execution and Learnin...	503-506
5685	(78,25)	731129	Efficient In-Memory Indexing with General...	227-246
5686	(78,26)	731130	Datensicherheit in mandantenfähigen Clo...	477-489
5687	(78,27)	731131	In-Database Machine Learning: Gradient ...	247-266
5688	(78,28)	731133	FlexY: Flexible; datengetriebene Prozessm...	503-506
5689	(78,29)	731134	Extending the MPSM Join	57-71

–

[[Database Compression Techniques]]