BUFFER MANAGEMENT

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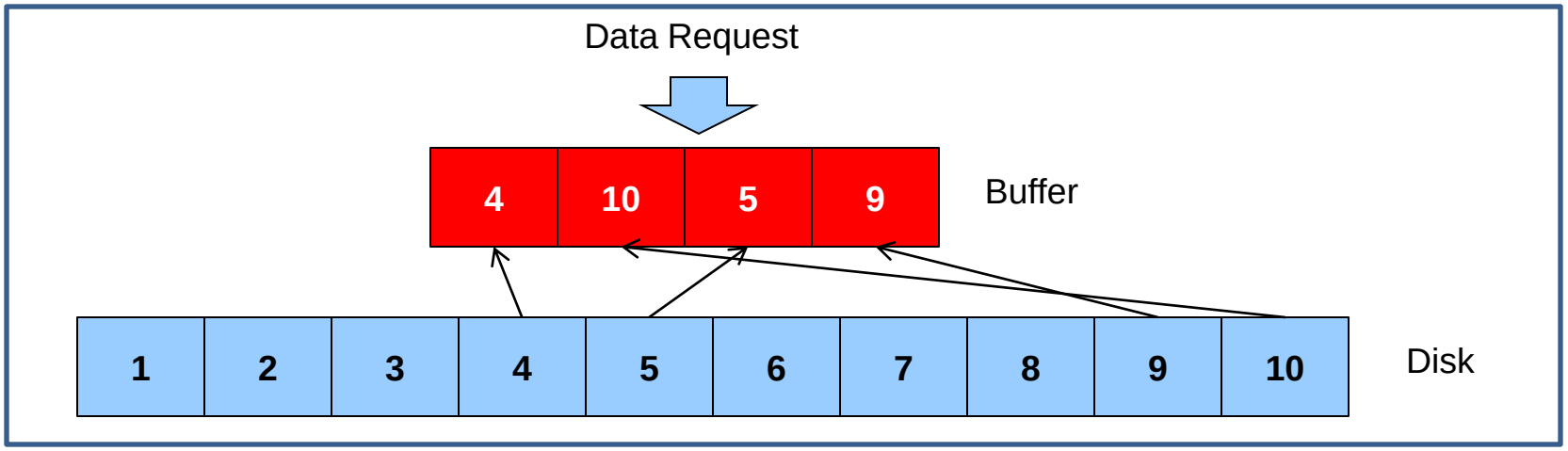
ALTIBASE

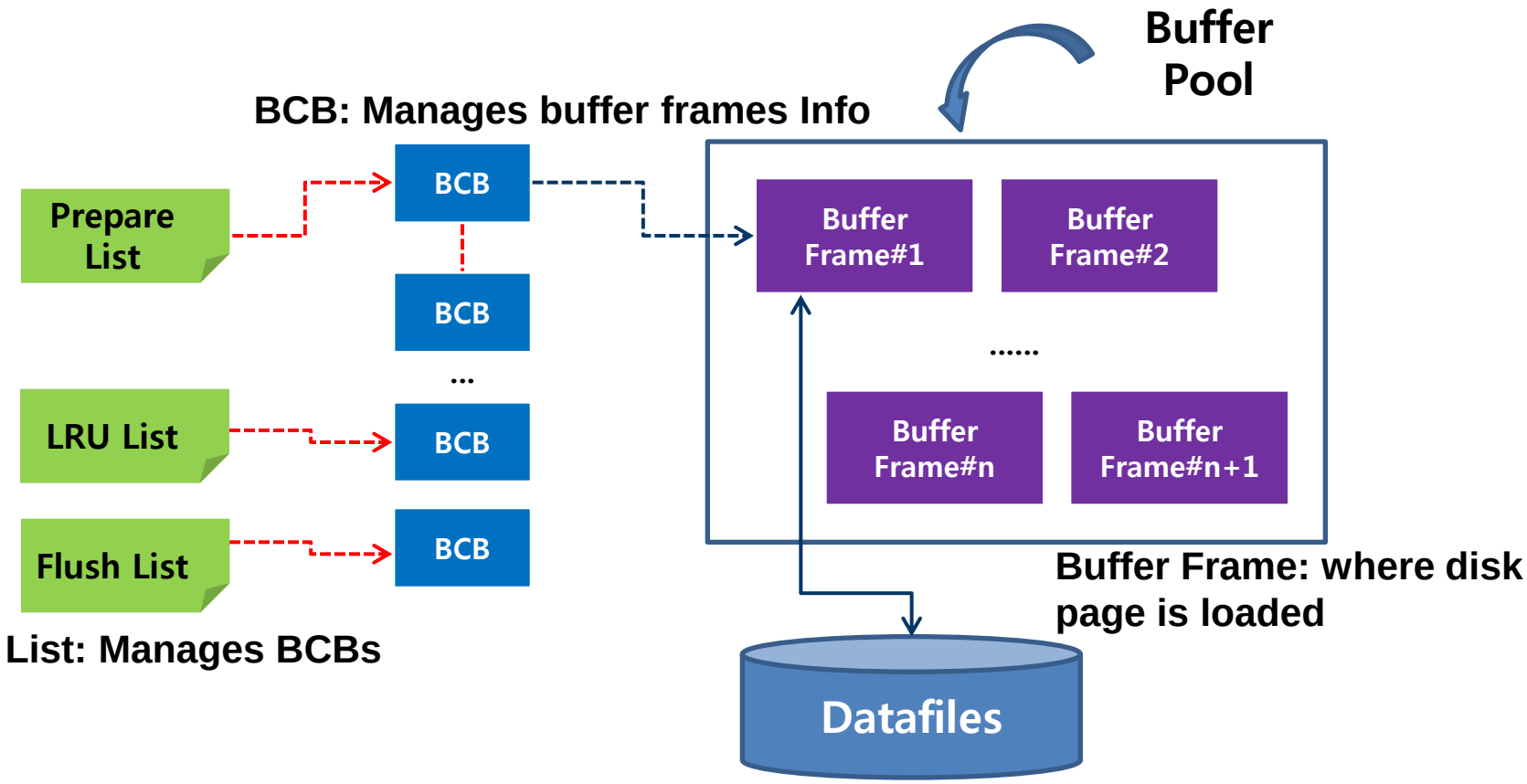
BUFFER MANAGEMENT CONCEPT

- **Buffer**
  - Memory space where disk-resident pages are temporarily loaded to improve the performance and reduce disk I/O
- **Buffer Replace**
  - Because not all the pages of disk can be loaded into the buffer, when new disk pages are loaded, they replace other pages in the buffer
- **Victim**
  - The buffer frame and a BCB that are chosen for buffer replacement



BUFFER Contents

Buffer Contents



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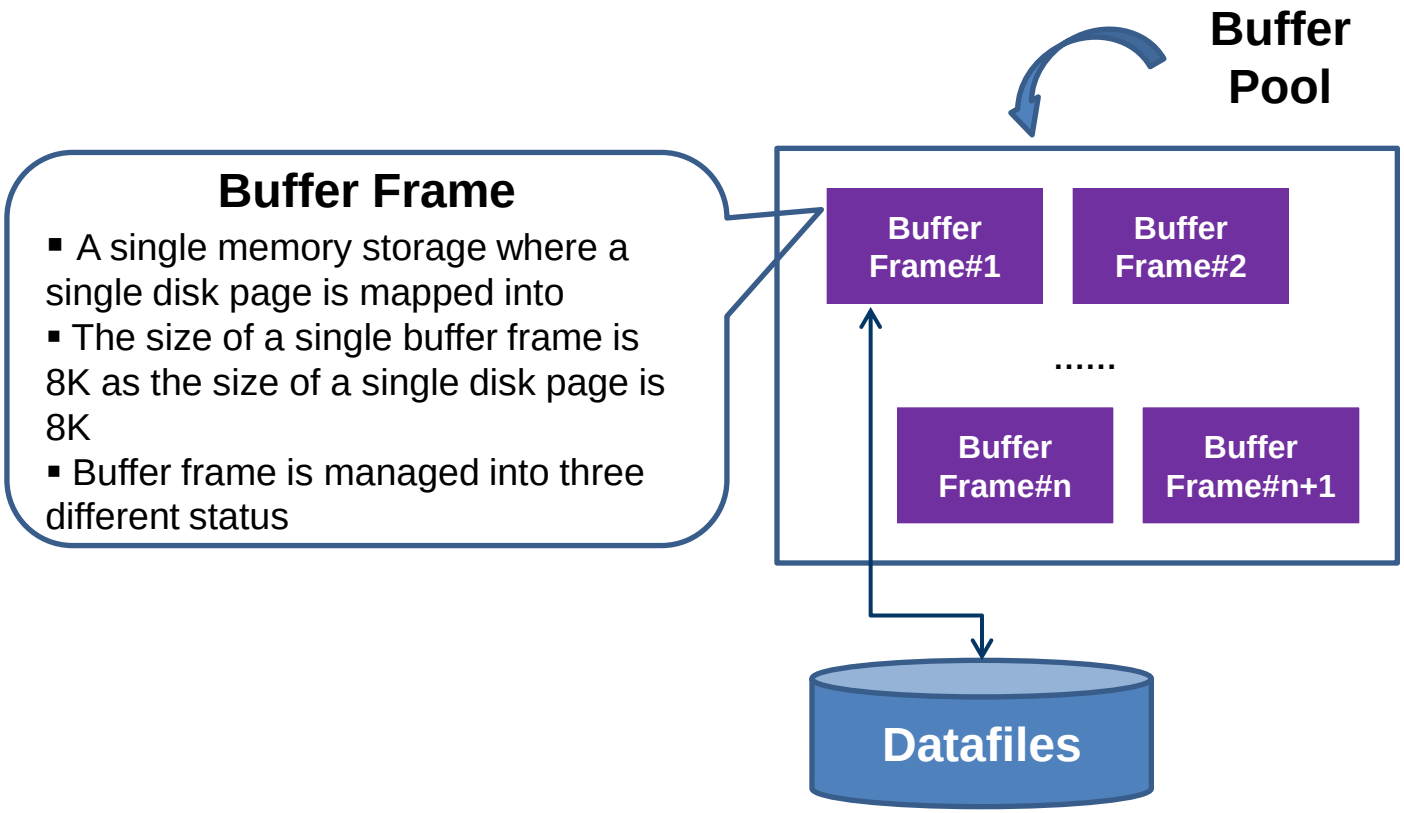
Buffer Frames



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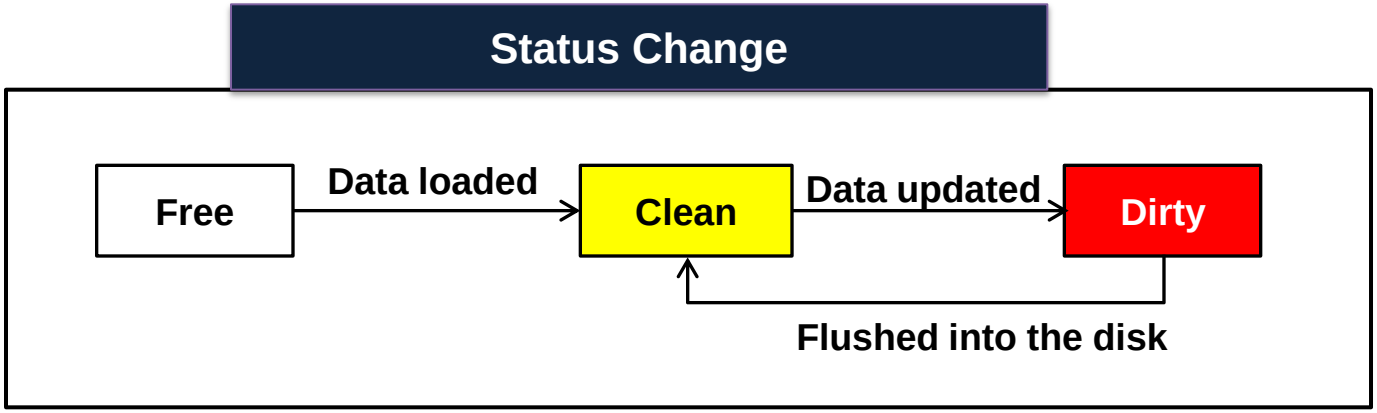
❖Buffer Frames

Status	Description
Free	Very first status where a page is not loaded
Clean	A page is loaded but it has not been updated
Dirty	A page is loaded into buffer and it has been updated



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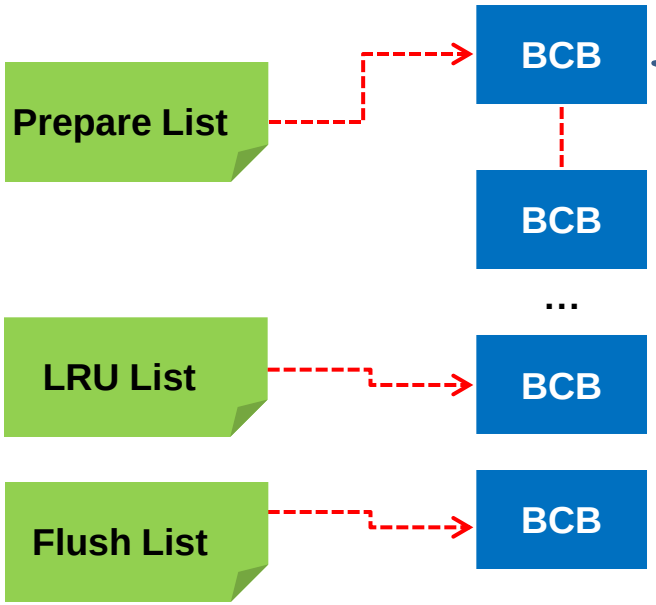
BCB



BCB(Buffer Control Block)

- A single structure that manages a single buffer frame information
- A Buffer frame and a BCB is a 1:1 relationship
- The following is the categories that BCB manages

Categories	Description
ID	BCB's ID
Frame PTR	Buffer frame's address value
Space ID	ID of Tablespace where a disk page belongs to
Page ID	ID of disk DB page
State	Status information of buffer frame
ListItem	Information about list where BCB is located
ListNO	The list number of parallel list where BCB is located

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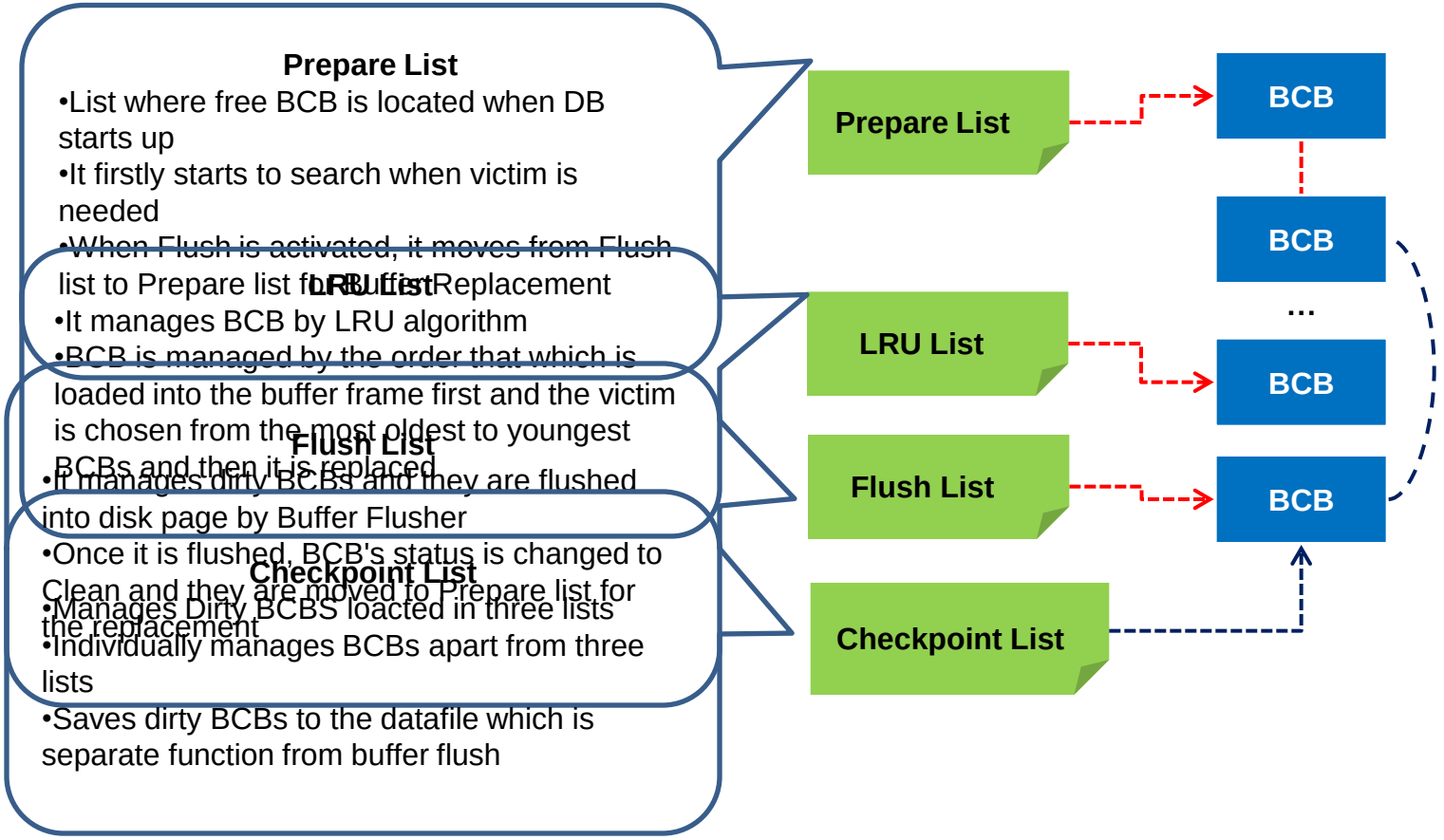
Lists



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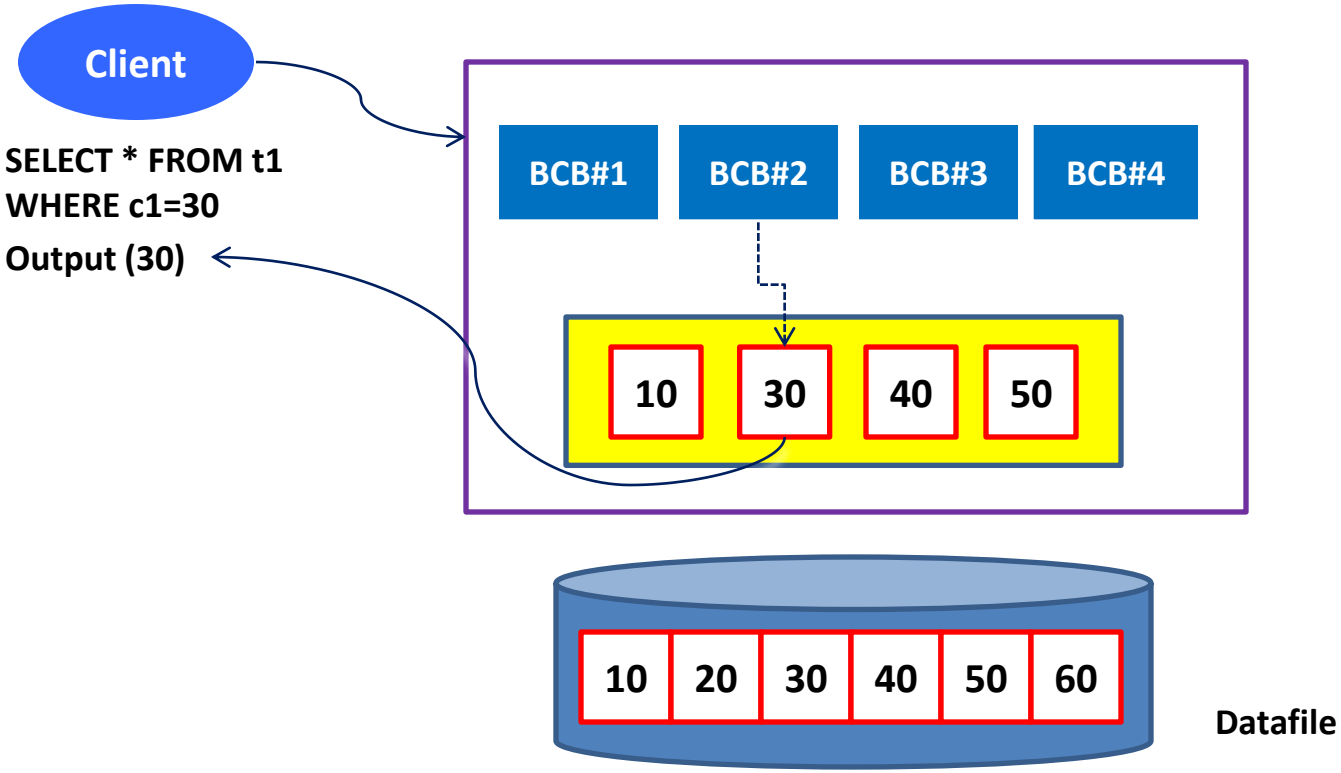
Example 1

- When requested data is in the buffer



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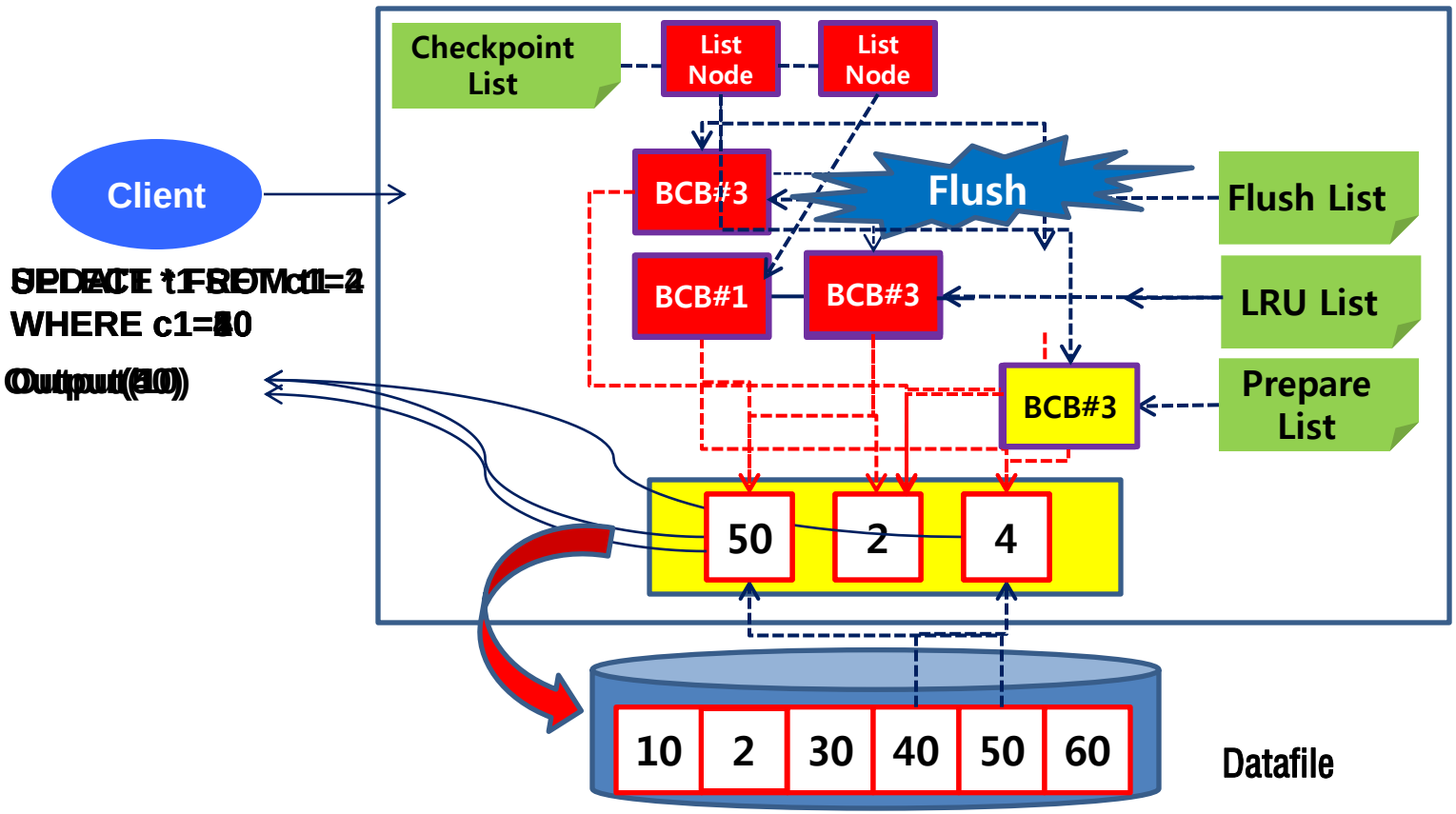
Example 2

- Changes of BCB status, BCB movements among the lists and etc..



Thank you!

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