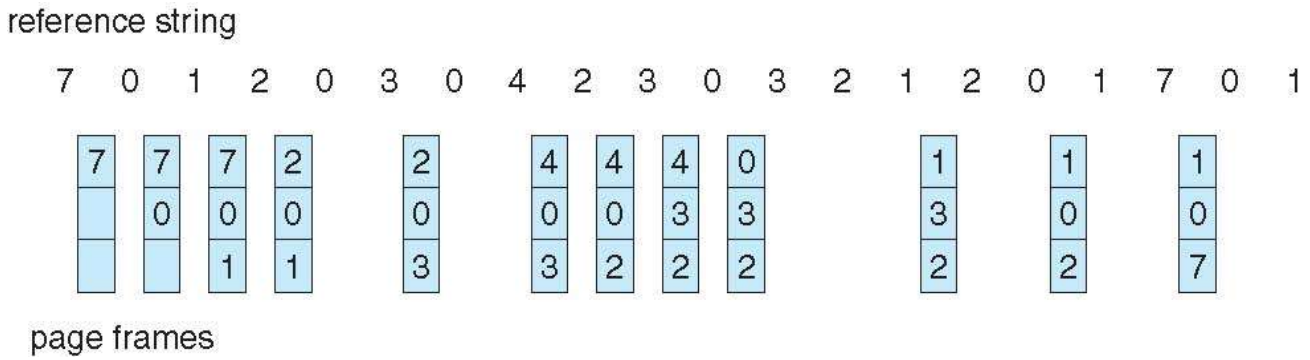
Least Recently Used Page Replacement

LRU Page Replacement

- Use past knowledge rather than future.
- Replace page that has not been used for the longest period of time.
- Associate time of last use with each page.
- Generally good algorithm and frequently used.

LRU Algorithm - Example

- Reference string: **7,0,1,2,0,3,0,4,2,3,0,3,0,3,2,1,2,0,1,7,0,1**
- 3 frames (3 pages can be in memory at a time per process)



- 12 page faults – Better than FIFO, worse than Optimal
- Implementation require hardware assistance.

LRU with Time Counter Implementation

- Every page entry has a time-of-use counter field.
- Every time a page is referenced through this entry, copy the value of the clock into the time-counter.
- Thus obtain the “time” of the last reference to each page.
- Then replace the page with lowest time value.
  - Search through a table is needed