EOPSY Lab #4

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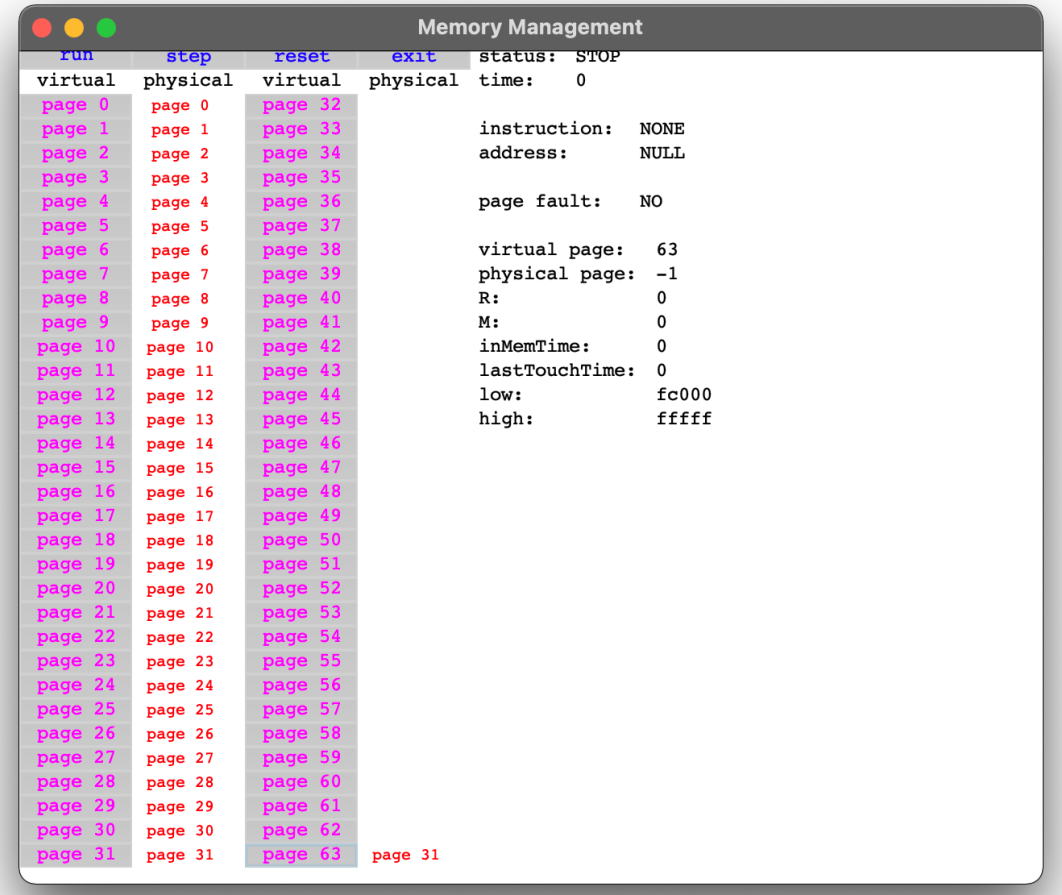
The task of this laboratory consisted of mapping any 8 pages of physical memory to the first 8 pages of virtual memory, reading from one virtual memory address on each of the 64 virtual pages.

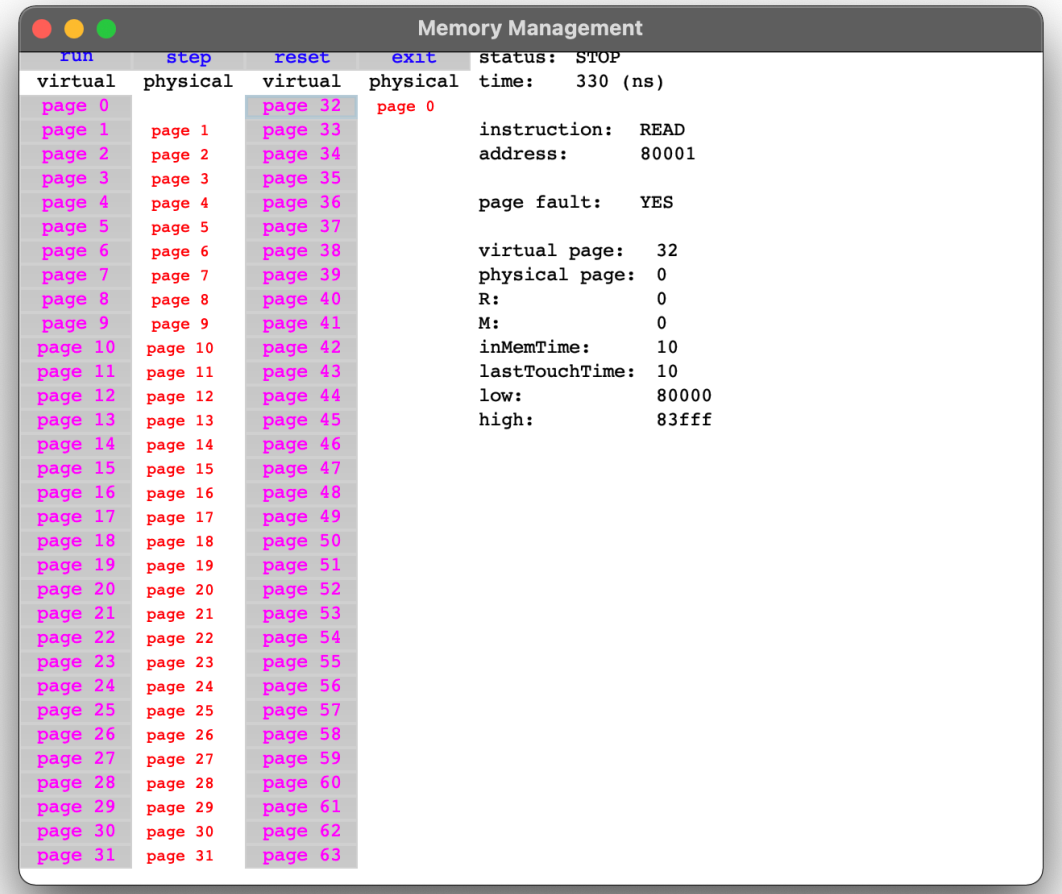
With the simulator provided, it happens to be impossible to map only 8 pages and read from 64. The number of pages mapped (numpages in memory.conf) is the sum of number of virtual and physical pages mapped, e.g. numpages 64 maps 32 physical to 32 virtual pages.



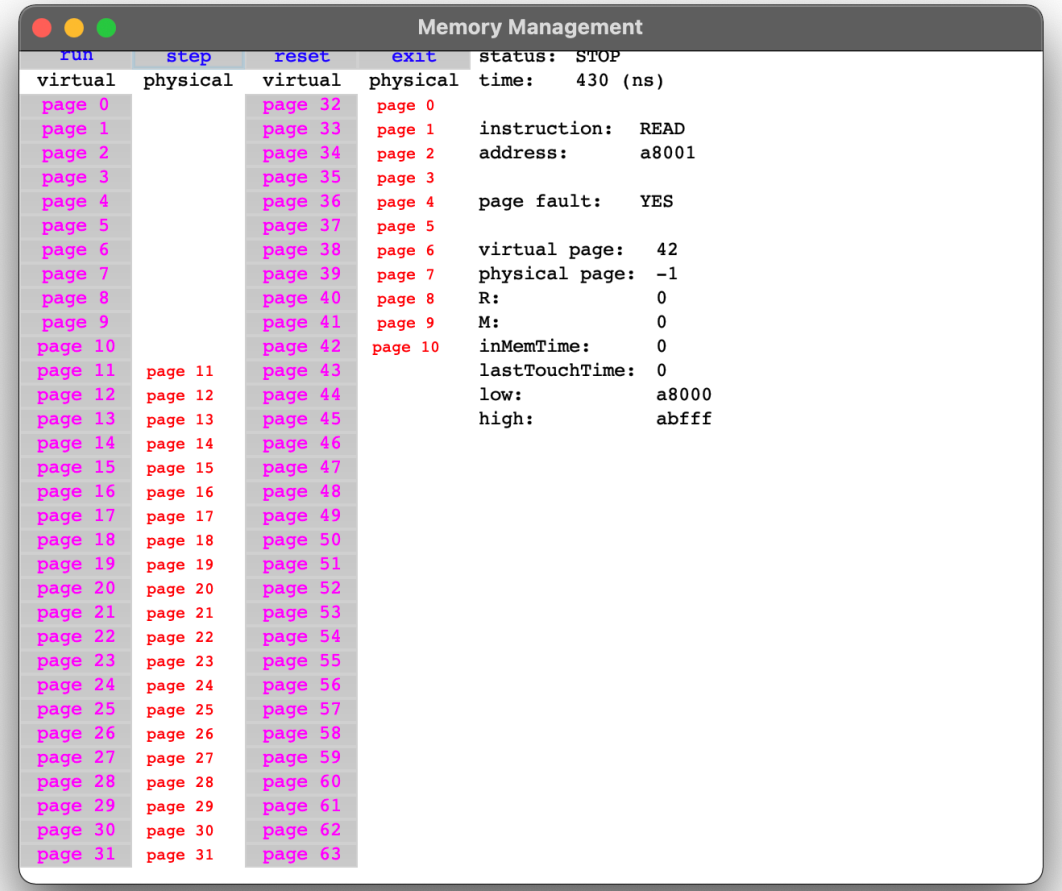
Initial setup

In the commands file, I READ the pagesize (16384) 64 times in order to cause a page fault to observe the page replacement algorithm. After it read through the 32 pages, it started

replacing them one by one in order of FIFO.



Step 33



Step 43

FIFO (“First-In First-Out”) is a page replacement algorithm that uses the frame whose page has been in memory the longest. The page frames are kept in a queue and the frame that was used last is moved to the tail and in the next replacement the next page from the queue is used.

This is by no means an effective algorithm due to its inability to distinguish which pages are used frequently, and which are not used at all. A better algorithm for page replacement would be a priority queue.