Clock Algorithm: An Approximation Of LRU

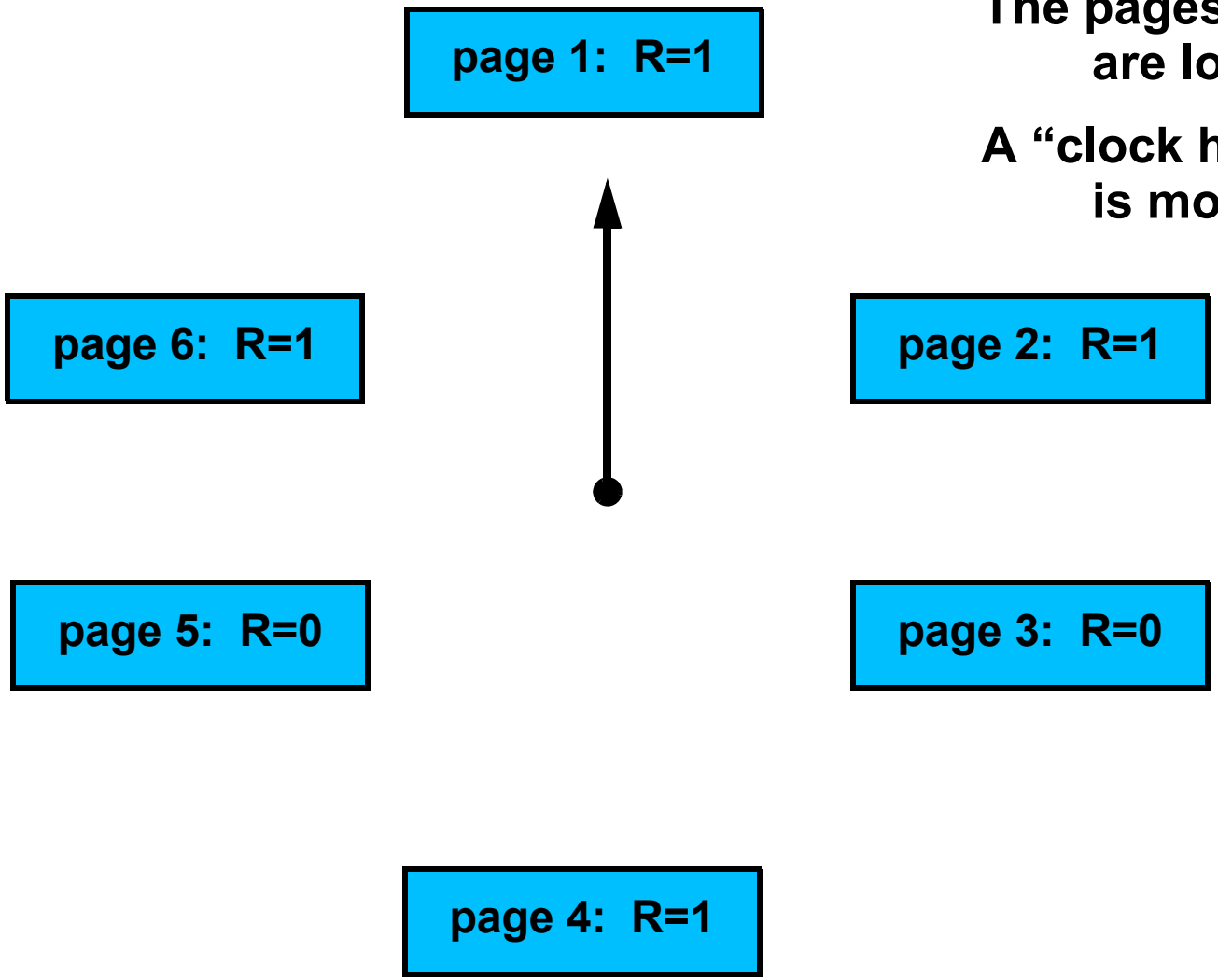
Based on the R bit in the page table

page table

perm-issions	**R**/M **bit**s	valid bit	physical frame no.

R bit = Referenced Bit
is set automatically when the page is used / "referenced"

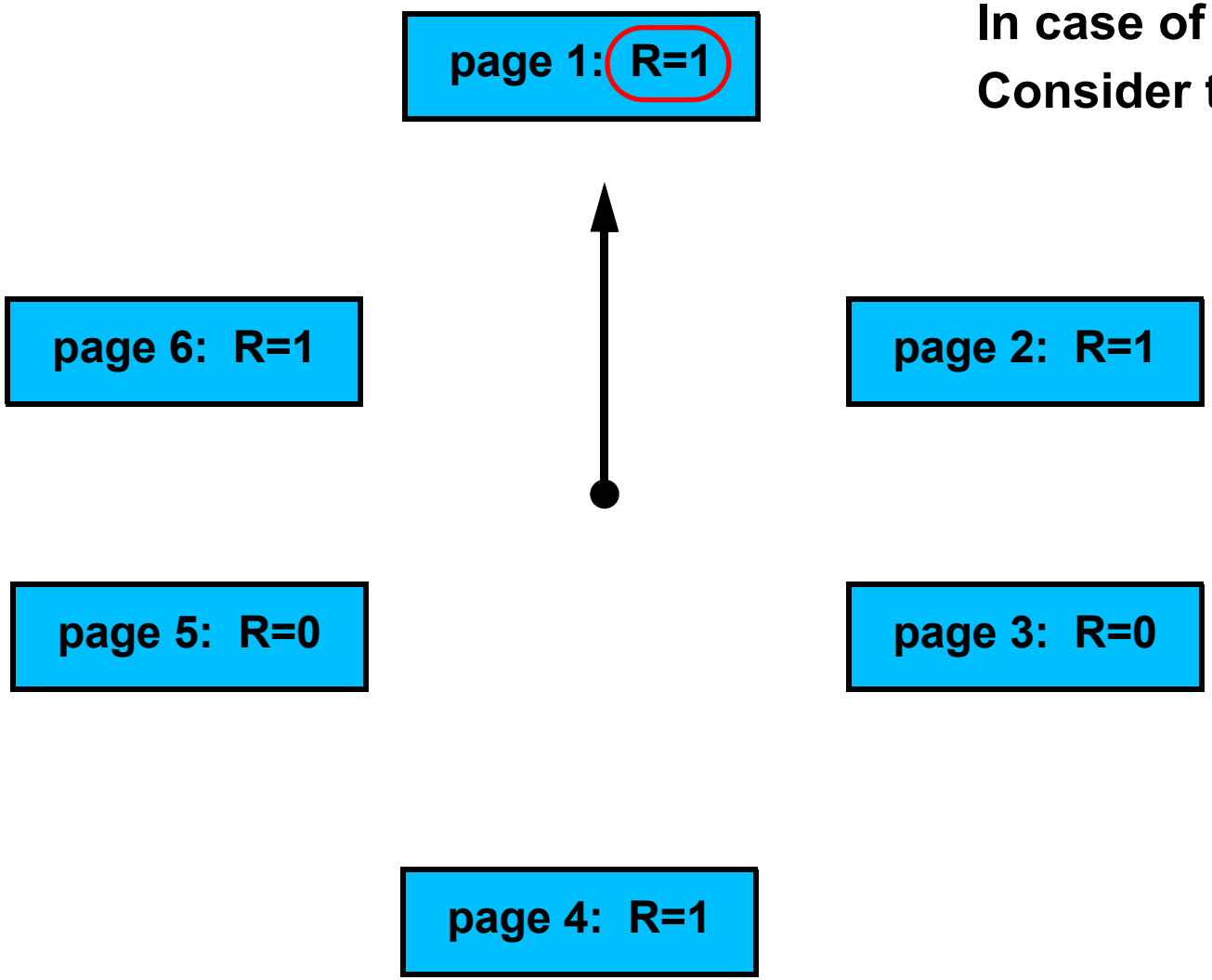
Clock Algorithm: An Approximation Of LRU



The pages in main memory are logically ordered in a cycle.

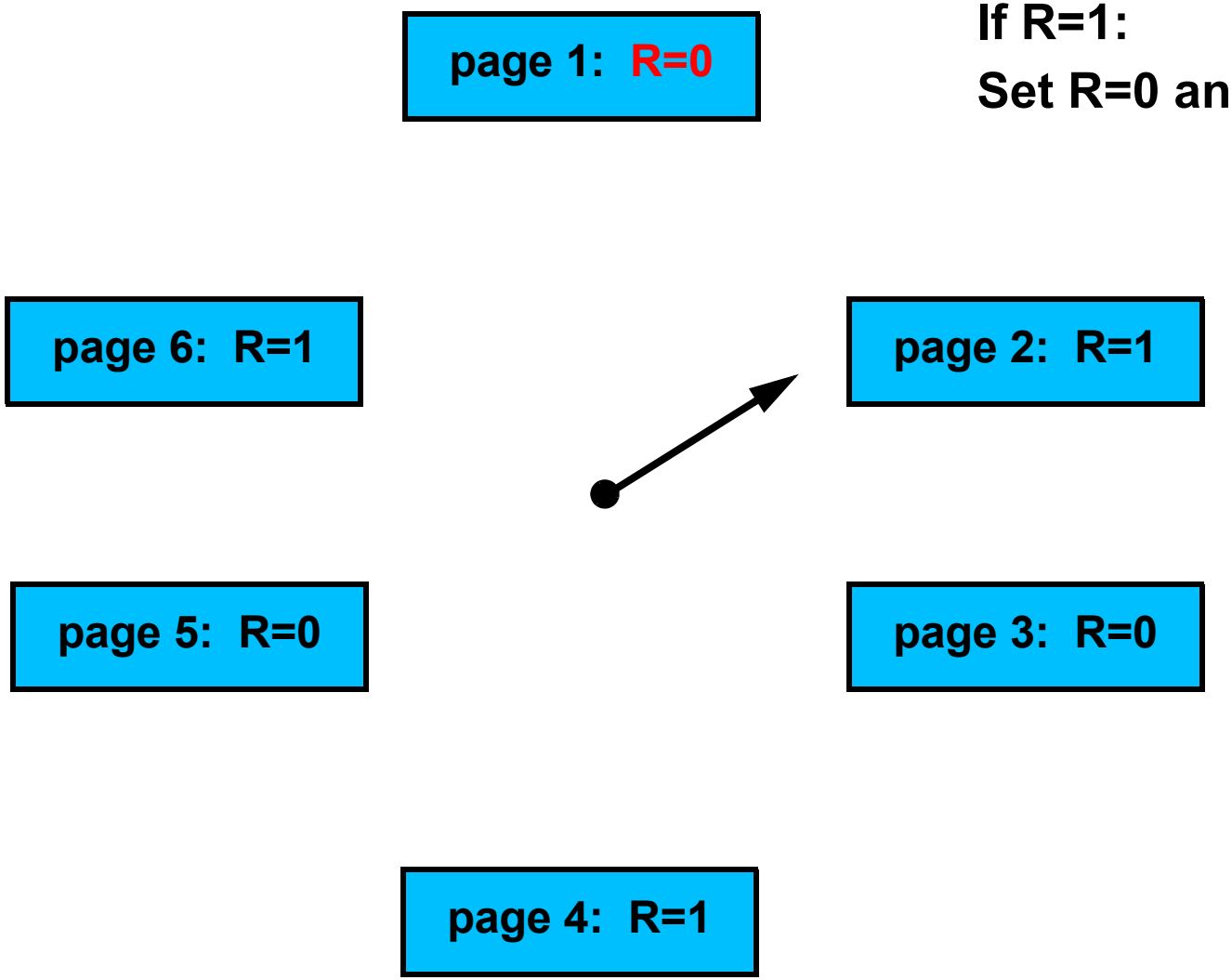
A "clock hand" points at one of them, is moved only in case of a page fault.

Clock Algorithm: An Approximation Of LRU



In case of a page fault:
Consider the R bit of the current page.

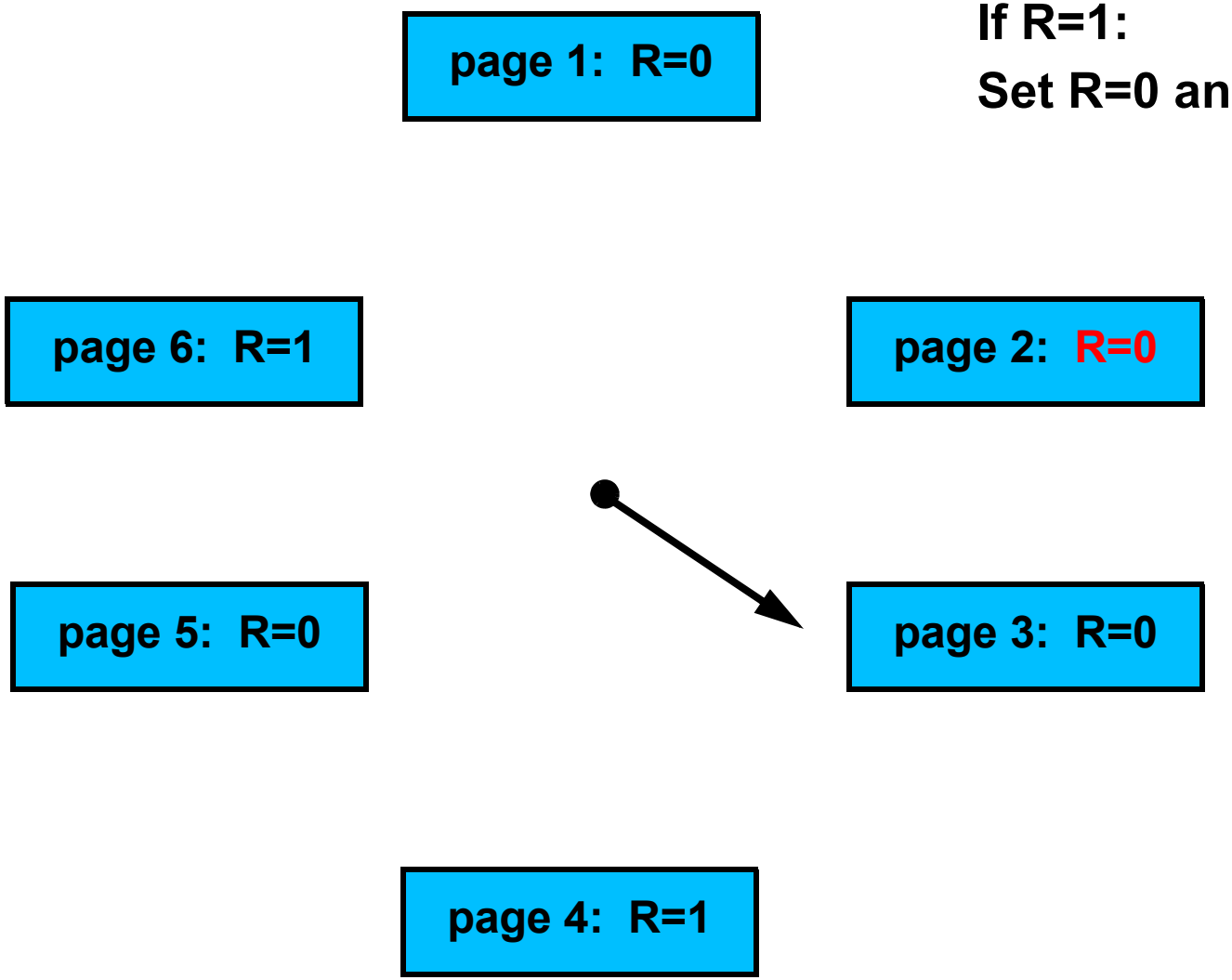
Clock Algorithm: An Approximation Of LRU



If R=1:

Set R=0 and move hand to the next page.

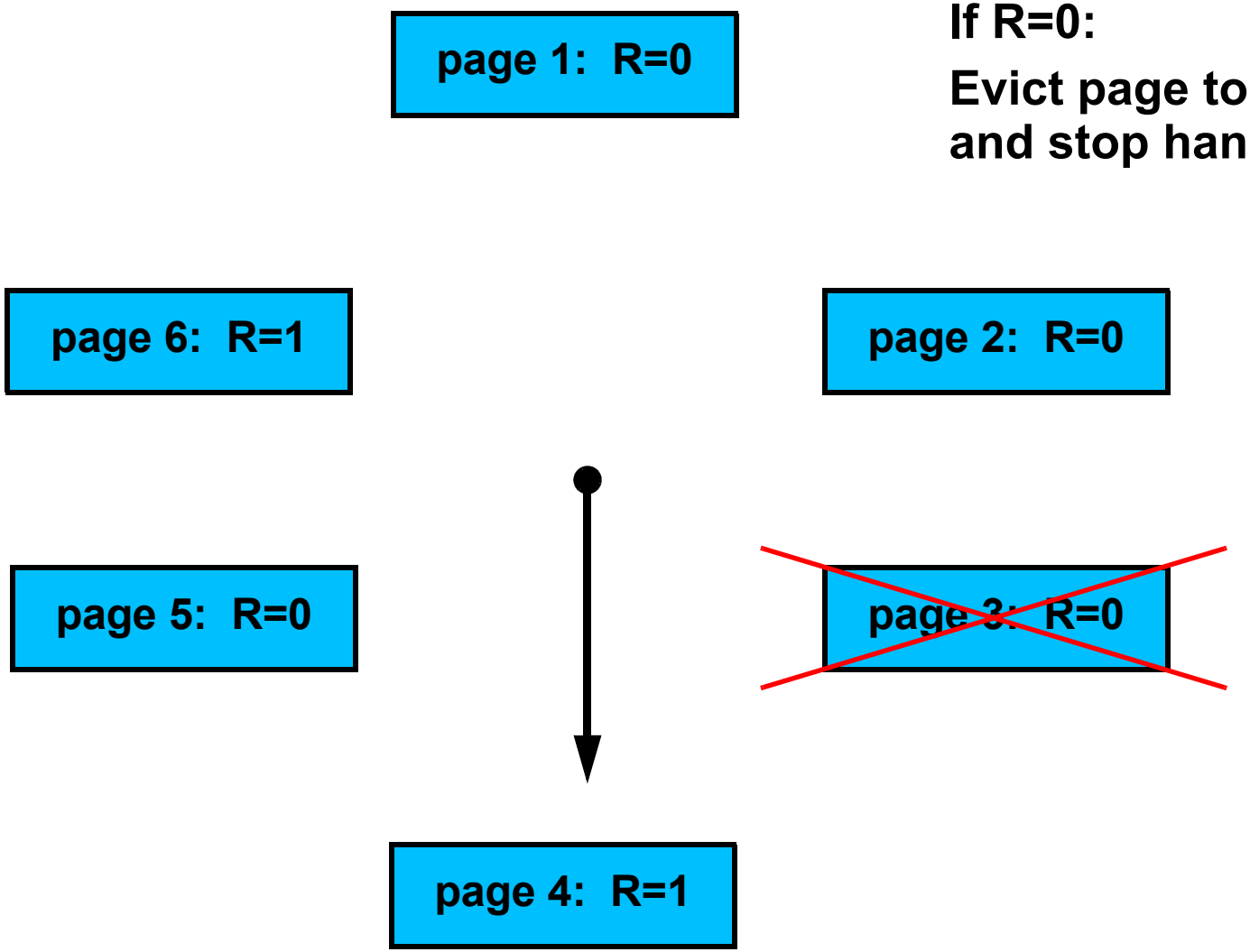
Clock Algorithm: An Approximation Of LRU



If R=1:

Set R=0 and move hand to the next page.

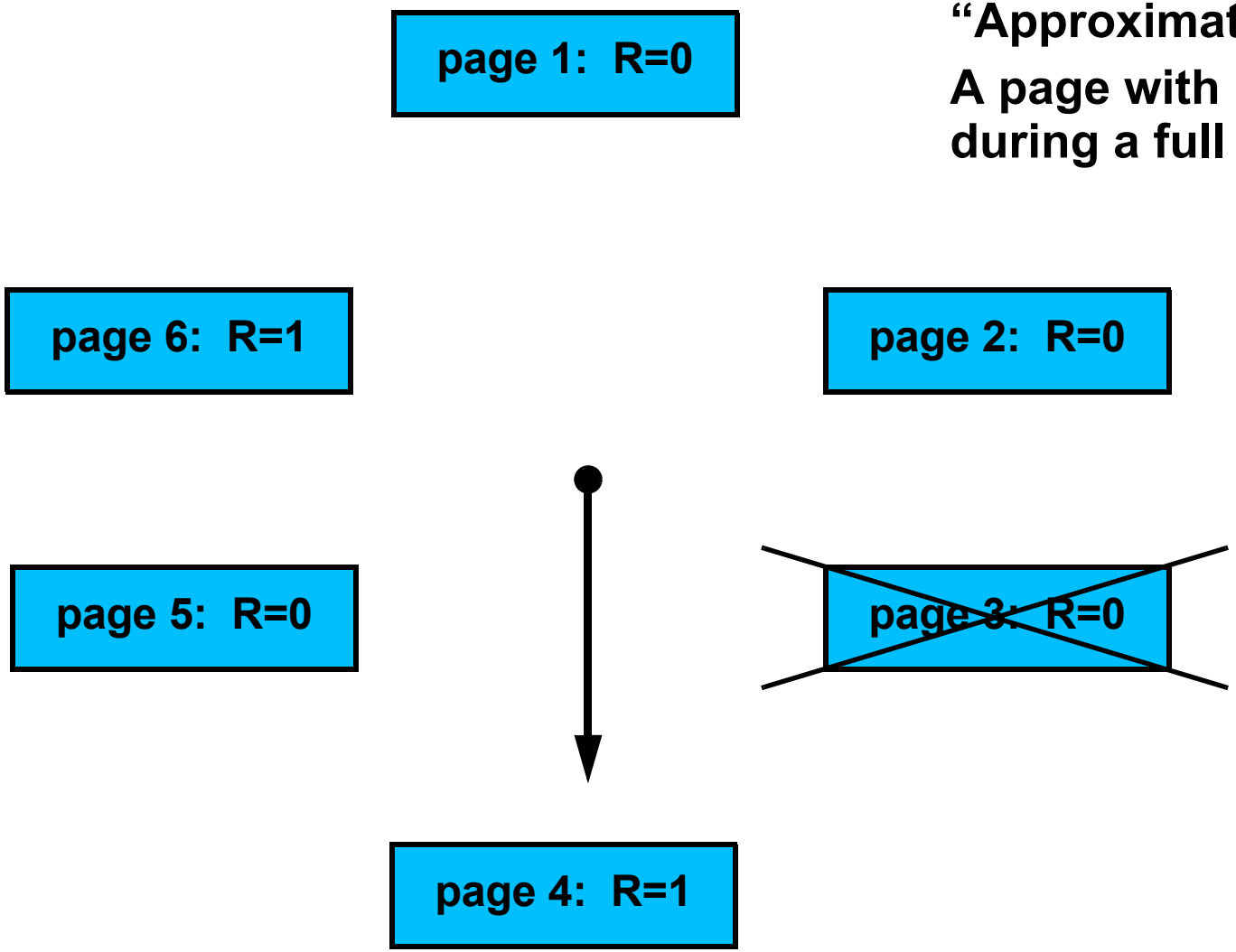
Clock Algorithm: An Approximation Of LRU



If R=0:

Evict page to hard disk and stop hand at the next page.

Clock Algorithm: An Approximation Of LRU



“Approximation of LRU”:

A page with R=0 has not been used during a full round of the clock hand.