

A) When a buffer manager is requested the buffer manager does the following things

1) the buffer manager is checked to see if it contains requested page. if the page is in pool skip to step 2

a) A frame is chosen for replacement, using the replacement policy

b) if the frame chosen for replacement policy it is flushed

c) the requested page is read into the frame chosen for replacement.

2) the requested page is pinned and pin count is incremented and its address is returned to the requestor.

If the page is not pinned, it can be removed from buffer pool even if it is actually needed in main memory.

B) if a page is in buffer pool chosen for replacement and this page is dirty, the buffer manager must write the page back to the disk. it is called flushing a page.

C) 1) pinning a page means the pin count will increase. pinning page is guarantees that page will not remove from buffer pool by the buffer manager. another page will not read into the frame until this page is unpinned.

2) buffer manager is responsible for pinning a page

3) page requestor is responsible for unpinning a page.

D) The modifier of page tells the buffer manager that page is modified and sets the dirty bit of that page. the page got flushed off by buffer manager.

E) 1)if there are no unpinned page then buffer manager will wait until a unpinned page is available.

2) if there are some unpinned pages ,the buffer manager will chose one of that by replacement policy, flushes the page and replace it with requested page.

F) clock replacement policy is a variant of LRU. The idea is to chose a page for replacement using a current variable that takes on values 1 to N .we can think of frames are arranged in a circle like a clock face.it frame has an associated referenced bit ,which is turned on when the page pin count goes to 0.the current frame is chosen for replacement. If the frame is not chosen current is incremented and next frame will be chose.it the current frame count >0 ,then is in not candidate for replacement. And current is incremented.if the referenced bit is on of current frame ,the clock algorithm turn off the light and increment the current.it the current has pin count 0 and referenced bit is off then page will be chose for replacement.

