An implementation of page replacement algorithm

Introduction:

Suppose each page can stores 10 commands and 4 memory blocks is assigned to a task. This application stimulates an overall page replacement process with a task calling 320 commands. For a task, there are two ways to call a command: in a random way or in a distributed way. As for the page replacement algorithm, the FIFO (First in First out) and LRU (least recently used) are implemented.

Implementation:

1) FIFO: An index is used to keep track of all the pages in memory. When a page needs to be replaced, the page pointed by index will be selected.
2) LRU: A counter will be assigned to keep track of page usage over a short period of time for each memory. If a page kept in memory block is called, the counter of this memory block will be set to zero and all the other counter will plus 1. When calling a page out of the memory, the memory with a biggest counter will be selected to do a page replacement

Result: