

Name _____

Problem

Consider a process running under a paging system that references pages in the following order:

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

Assume the process has been allocated three page frames in main memory, and the memory contains the pages (a,b,c) at the point indicated by the left bracket.

For references between the brackets do the following:

1. Draw a circle around the references which would cause page faults if the replacement strategy is **FIFO** i.e., the page resident in memory for the longest time is the one thrown out.

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

2. Draw a circle around the references which would cause page faults if the replacement strategy is **LRU** i.e., the page resident in memory that is the least recently used is the one thrown out.

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

3. Draw a circle around the references which would cause page faults if the replacement strategy is **LFU** i.e., the page resident in memory that is the least frequently used is the one thrown out.

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

FIFO

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

a b a a c [b a a b x x x a x a f a a e a x x x x x f] a a e f c g

LRU

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

a b a a c [b a a b x a x a x a f a a e a x x a x x x f] a a e f c g

LFU

a b a a c [b a a b d a e a f a f a a e a c g a f e f] a a e f c g

a b a a c [b a a b x a x a x a f a a x a x x a x x x] a a e f c g