Advanced Operating Systems - Homework 1

B013040033 雷皓博

因是 random 的，所以都是跑十次取平均值。

Myalgorithm：

不再 Input reference strings- FrameQuantity/5~reference strings+ FrameQuantity/5

且不是前面 FrameQuantity/4 個放進 Frame 裡 reference strings 與 Frame Index

且 ModifyCount 最小的

Ex Input reference strings ==205,Frame Quantity==60 不會去找(replace)205-12~205+12 的 range 裡的數字(解 ex 400,402,405…or 402,400,401…)
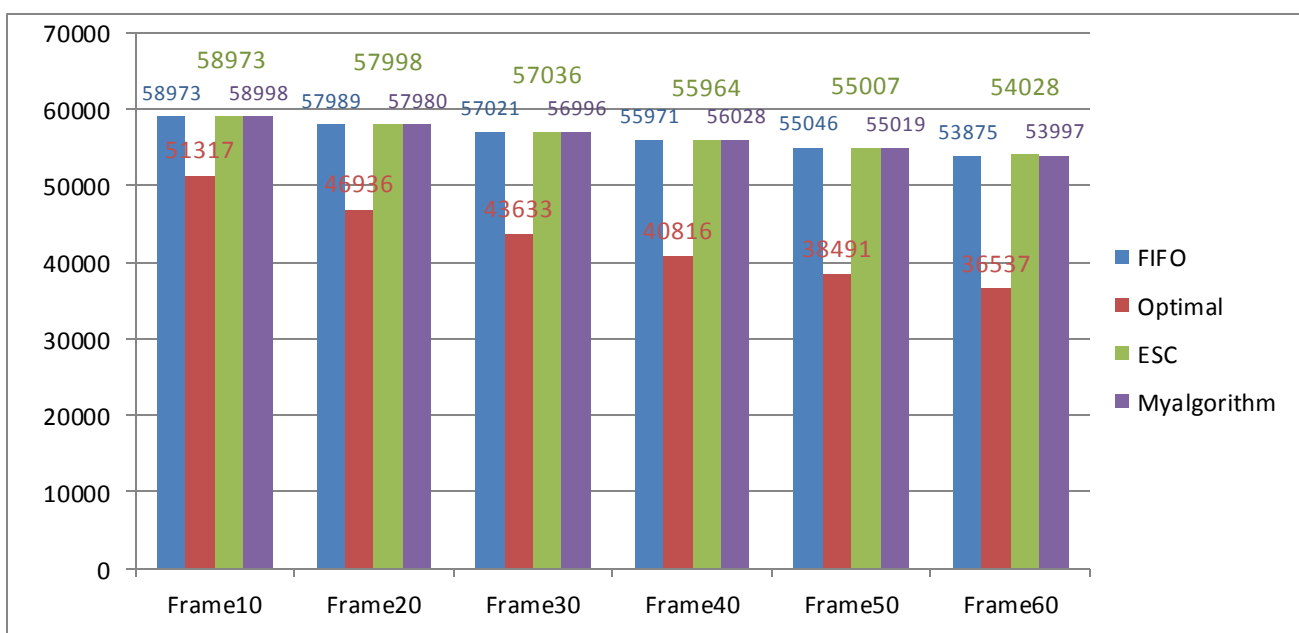
Ex 前面 FrameQuantity/4 個放進 Menory 裡 reference strings 與 Frame Index 有 reference strings==190, Index = 12,那麼就不會去動這個 page

(解 ex 1,200,1,200,1,200…)

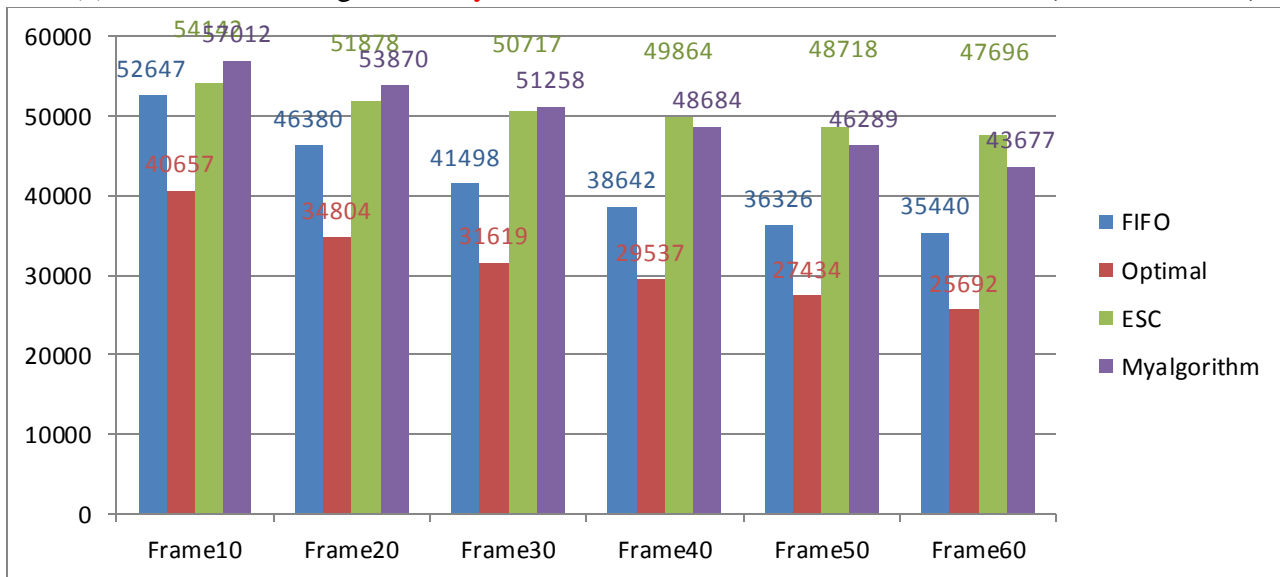Cost FIFO :86906 > Myalgorithm : 84938 (WIN)

(一)The relationship between page faults and the number of frames.(這裡 p=0.25)
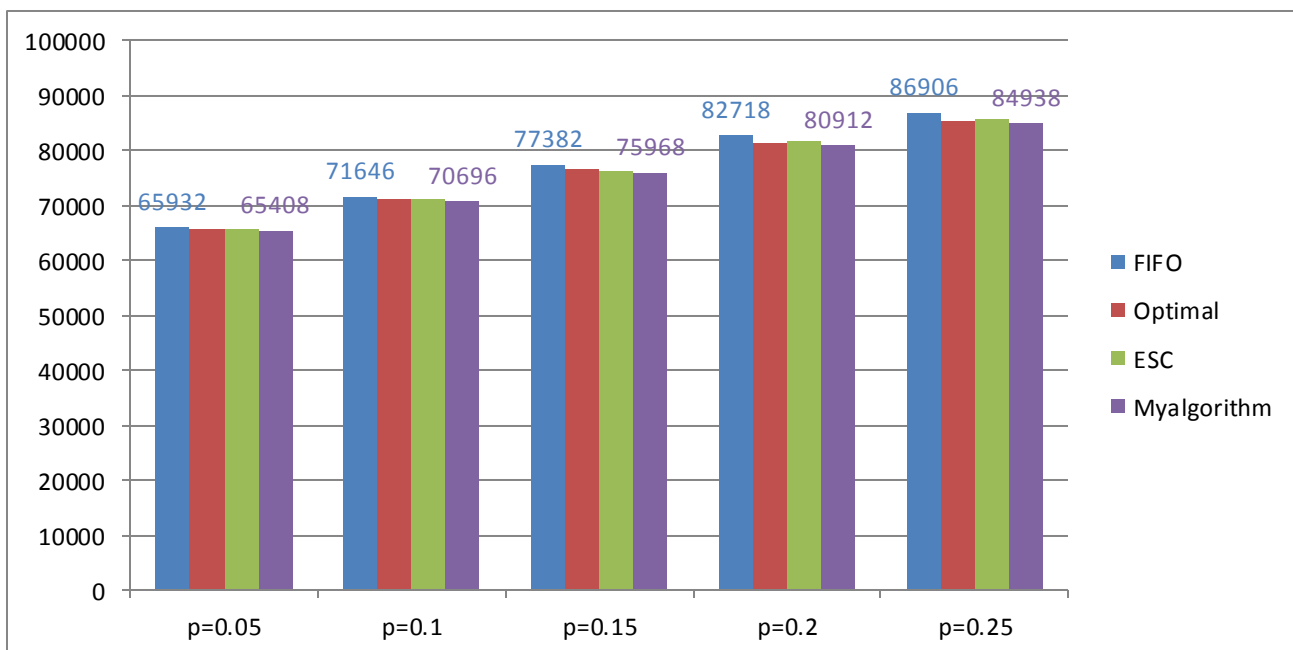
　　(1)test reference strings: Random

(2)test reference strings: Locality　ex. 305 400 402 396 356 382 305 402.......(總共 50 個數字)

Frame numbers 增加，Page fault 下降(線性)，Optimal 最明顯

(二) The relationship between the costs (i.e., interrupt and writing) and p

(Frame=60 , Locality Input)

Cost = Interrupt + WriteBack

Cost 與 p 呈現 現性成長

Frame=60 , Locality Inpu ,p 設 0.25

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😣⊜⊡  cpeter@ubuntu: ~/Desktop/AdvanceOS/HW1
Please Select Meathod (1)利用讀檔的方式 (2)在terminal中輸入(std input):1
Please Input Read File Name:Local60
Cause Is Random , Run 10 times to Compute Average
----10 times FIFO Average--------
Average PageFaultNum           = 35440
Average InterruptNum           = 74389
Average FrameWriteToDiskNum    = 12517
Average Cost                   = 86906
----10 times Optimal Average--------
Average PageFaultNum           = 25692
Average InterruptNum           = 74401
Average FrameWriteToDiskNum    = 10935
Average Cost                   = 85336
----10 times ESC Average--------
Average PageFaultNum           = 47696
Average InterruptNum           = 74387
Average FrameWriteToDiskNum    = 11514
Average Cost                   = 85901
----10 times MyAlgorithm Average--------
Average PageFaultNum           = 43677
Average InterruptNum           = 74358
Average FrameWriteToDiskNum    = 10580
Average Cost                   = 84938
cpeter@ubuntu:~/Desktop/AdvanceOS/HW1$
```

discussions about the behaviors of these algorithms

Pagefault :   要找的 Frame 不再 Memory 裡

WriteBack: 已被 ModifyFrame 但要被 replace，Frame 寫入 DISK

Interrupt: PageFault+set/clean ModifyBit ReferenceBit (剛放進去做的清空不算)

Cost: interrupt + WriteBack