

Final Project – Test Document 2

This document contains screenshots of the execution of the 4 algorithms using $N = 5$ and the following reference string as inputs: 0 1 2 3 4 5 6 7 8 9 0 9 1 8 2 7 3 6 4 5

FIFO

Beginning

```
-----  
FRAME COUNT = 5  
-----  
  
0 - Exit  
1 - Read reference string  
2 - Generate reference string  
3 - Display current reference string  
4 - Simulate FIFO  
5 - Simulate OPT  
6 - Simulate LRU  
7 - Simulate LFU  
Select option: 1  
Enter reference string:  
0 1 2 3 4 5 6 7 8 9 0 9 1 8 2 7 3 6 4 5  
  
0 - Exit  
1 - Read reference string  
2 - Generate reference string  
3 - Display current reference string  
4 - Simulate FIFO  
5 - Simulate OPT  
6 - Simulate LRU  
7 - Simulate LFU  
Select option: 4  
-----  
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |  
Physical frame 0 || 0 |  
Physical frame 1 || |  
Physical frame 2 || |  
Physical frame 3 || |  
Physical frame 4 || |  
Page faults    || F |  
Victim frames  || |  
-----  
  
Press ENTER to continue.
```

Middle

```

Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
Physical frame 1 ||   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Physical frame 2 ||   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
Physical frame 3 ||   |   |   | 0 | 1 | 2 | 3 | 4 | 5 |
Physical frame 4 ||   |   |   |   | 0 | 1 | 2 | 3 | 4 |
Page faults      || F | F | F | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 |
- - - - -

Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
Physical frame 1 ||   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
Physical frame 2 ||   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Physical frame 3 ||   |   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
Physical frame 4 ||   |   |   |   | 0 | 1 | 2 | 3 | 4 | 5 |
Page faults      || F | F | F | F | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 | 4 |
- - - - -

Press ENTER to continue.

```

End

```

Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 1 | 1 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 1 ||   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 9 | 0 | 0 | 1 | 2 | 7 | 3 | 6 | 4 |
Physical frame 2 ||   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 0 | 1 | 2 | 7 | 3 | 6 |
Physical frame 3 ||   |   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7 | 8 | 8 | 9 | 0 | 1 | 2 | 7 | 3 |
Physical frame 4 ||   |   |   |   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 0 | 1 | 2 | 7 |
Page faults      || F | F | F | F | F | F | F | F | F | F | F |   | F |   | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 | 4 | 5 |   | 6 |   | 7 | 8 | 9 | 0 | 1 | 2 |
- - - - -

Press ENTER to continue.

Total page faults: 18
- - - - -
- - - - -

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU

```

OPT

Beginning

```

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU
Select option: 5
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 |
Physical frame 1 ||
Physical frame 2 ||
Physical frame 3 ||
Physical frame 4 ||
Page faults      || F |
Victim frames    ||
- - - - -

Press ENTER to continue.

```

Middle

```

Press ENTER to continue.
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
Physical frame 1 || 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 2 || 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
Physical frame 3 || 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
Physical frame 4 || 4 | 5 | 6 | 7 | 7 |
Page faults      || F | F | F | F | F | F | F | F |
Victim frames    || 4 | 5 | 6 | 3 |
- - - - -

Press ENTER to continue.
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
Physical frame 1 || 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 2 || 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
Physical frame 3 || 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
Physical frame 4 || 4 | 5 | 6 | 7 | 7 | 9 |
Page faults      || F | F | F | F | F | F | F | F |
Victim frames    || 4 | 5 | 6 | 3 | 7 |
- - - - -

Press ENTER to continue.

```

End

```
Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 6 | 4 | 5 |
Physical frame 1 ||   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 2 ||   |   | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
Physical frame 3 ||   |   |   | 3 | 3 | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
Physical frame 4 ||   |   |   |   | 4 | 5 | 6 | 7 | 7 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
Page faults      || F | F | F | F | F | F | F | F | F | F |   |   |   |   |   | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 4 | 5 | 6 | 3 | 7 |   |   |   |   |   | 0 | 7 | 3 | 6 | 4 |
- - - - -

Press ENTER to continue.

Total page faults: 15

- - - - -
- - - - -

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU
```

LRU

Beginning

```

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU

Select option:
6
-----
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 |
Physical frame 1 ||   |
Physical frame 2 ||   |
Physical frame 3 ||   |
Physical frame 4 ||   |
Page faults      || F |
Victim frames    ||   |
-----

Press ENTER to continue.

```

Middle

```

Press ENTER to continue.

-----
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 | 5 |
Physical frame 1 ||   | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 |
Physical frame 2 ||   |   | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 |
Physical frame 3 ||   |   |   | 3 | 3 | 3 | 3 | 3 | 8 | 8 |
Physical frame 4 ||   |   |   |   | 4 | 4 | 4 | 4 | 4 |
Page faults      || F | F | F | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 |
-----

Press ENTER to continue.

-----
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 | 5 |
Physical frame 1 ||   | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 |
Physical frame 2 ||   |   | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 |
Physical frame 3 ||   |   |   | 3 | 3 | 3 | 3 | 3 | 8 | 8 |
Physical frame 4 ||   |   |   |   | 4 | 4 | 4 | 4 | 4 |
Page faults      || F | F | F | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 | 4 |
-----

Press ENTER to continue.

```


End

```
Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 7 |
Physical frame 1 ||   | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 |
Physical frame 2 ||   |   | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 7 | 2 | 2 | 2 | 2 | 2 | 5 |
Physical frame 3 ||   |   |   | 3 | 3 | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 4 | 4 |
Physical frame 4 ||   |   |   |   | 4 | 4 | 4 | 4 | 4 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 3 | 3 | 3 |
Page faults      || F | F | F | F | F | F | F | F | F | F | F |   | F |   | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 1 | 2 | 3 | 4 | 5 |   | 6 |   | 7 | 0 | 9 | 1 | 8 | 2 |
- - - - -

Press ENTER to continue.

Total page faults: 18
- - - - -
- - - - -

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU
```

LFU

Beginning

```

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
7 - Simulate LFU
Select option: 7
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 |
Physical frame 1 || |
Physical frame 2 || |
Physical frame 3 || |
Physical frame 4 || |
Page faults      || F |
Victim frames    || |
- - - - -

Press ENTER to continue.

```

Middle

```

Press ENTER to continue.
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 6 | 7 | 8 |
Physical frame 1 || | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 2 || | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
Physical frame 3 || | 3 | 3 | 3 | 3 | 3 | 3 |
Physical frame 4 || | 4 | 4 | 4 | 4 | 4 |
Page faults      || F | F | F | F | F | F | F | F |
Victim frames    || | 1 | 1 | 1 | 0 | 5 | 6 | 7 |
- - - - -

Press ENTER to continue.
- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 6 | 7 | 8 | 9 |
Physical frame 1 || | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 2 || | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
Physical frame 3 || | 3 | 3 | 3 | 3 | 3 | 3 |
Physical frame 4 || | 4 | 4 | 4 | 4 | 4 |
Page faults      || F | F | F | F | F | F | F | F |
Victim frames    || | 1 | 1 | 1 | 0 | 5 | 6 | 7 | 8 |
- - - - -

Press ENTER to continue.

```

End

```
Press ENTER to continue.

- - - - -
Reference string || 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 9 | 1 | 8 | 2 | 7 | 3 | 6 | 4 | 5 |
Physical frame 0 || 0 | 0 | 0 | 0 | 0 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 6 | 4 | 5 |
Physical frame 1 ||   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
Physical frame 2 ||   |   | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Physical frame 3 ||   |   |   | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
Physical frame 4 ||   |   |   |   | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
Page faults      || F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
Victim frames    ||   |   |   |   |   | 0 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 0 | 7 | 3 | 6 | 4 |
- - - - -

Press ENTER to continue.

Total page faults: 20
- - - - -
- - - - -

0 - Exit
1 - Read reference string
2 - Generate reference string
3 - Display current reference string
4 - Simulate FIFO
5 - Simulate OPT
6 - Simulate LRU
```