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Programming Assignment #4

Q10.44

Each algorithm runs independently, and the number of page faults for each is printed at the end. The Optimal algorithm predicts future page requests to replace the page that will not be used for the longest period of time.

```
Optimal page fault = 8
● huangyukai@huangyukaideMacBook-Pro hw4 % ./a.out
Page reference string is:
8 4 2 5 4 6 9 9 5 2 5 2
Please enter page frame (1-7): 3

8 -1 -1
8 4 -1
8 4 2
5 4 2
5 4 2
5 6 2
5 6 9
5 6 9
5 6 9
2 6 9
2 5 9
2 5 9

FIFO page fault = 8
```

FIFO page fault = 8

8 -1 -1

8 4 -1

8 4 2

4 2 5

2 5 4

5 4 6

4 6 9

4 6 9

6 9 5

9 5 2

9 2 5

9 5 2

LRU page fault = 8

8 -1 -1

8 4 -1

8 4 2

5 4 2

5 4 2

5 6 2

5 9 2

5 9 2

5 9 2

5 9 2

5 9 2

5 9 2

Optimal page fault = 6

Q11.27

- FCFS should show a high total head movement as it services requests in the order they arrive.
- SCAN should show less movement than FCFS, as it optimizes by scanning back and forth.
- C-SCAN should show even movement by scanning in a circular fashion.