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OS Lab 8: Lab 8 Observations
Description: Write up about the results of Lab 8.

FIFO Implementation:
I used a while loop that reads all the lines of the text file, and according to whether the lines exist in the cache, replaces pages. If the input already exists in the cache, nothing happens, however, if it is not found, the current item is replaced with the new input.

LRU Implementation:
This implementation sees a second int type variable initialized in the struct, “recent_access,” which keeps track of the order for the least recently used algo. While reading through the .txt file, if the page exists in the cache, the age of the pages are increased, however if the checked page does not exist within the cache, the oldest page is replaced with the current.

Second Chance Implementation:
Again, there is a second int type variable declared in the struct, “second_chance,” which keeps track of whether or not the page has had a second chance. If a page exists and was not granted a second chance, grant it one. If it has passed through its second chance, take it away. If a page does not have a second chance, and a new page is read, replace the page that no longer has a second chance.

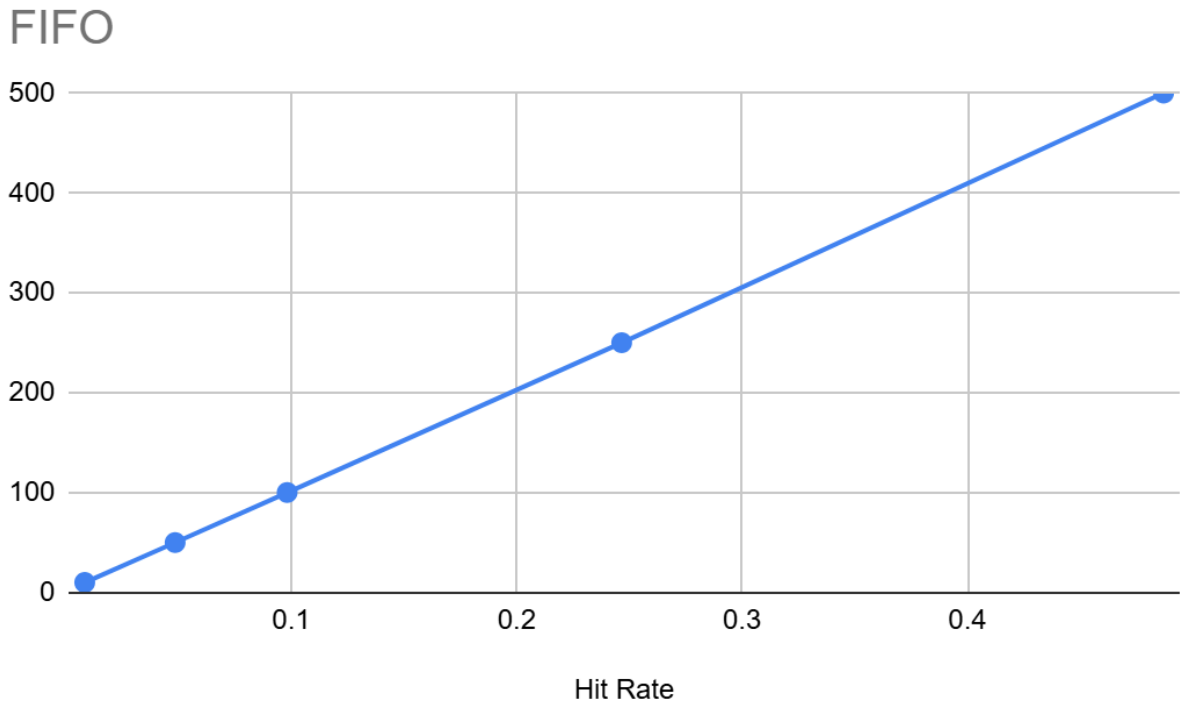
Which Implementation did the best? FIFO (Highest Average Hit Rate)
(All images can be found on later pages)

```
FIFO 10K Test with cache size = 10, 50, 100, 250, 500
10000: Number of Requests
9916: Number of Page Faults
0.008400: Hit Rate
    9916
10000: Number of Requests
9515: Number of Page Faults
0.048500: Hit Rate
    9515
10000: Number of Requests
9018: Number of Page Faults
0.098200: Hit Rate
    9018
10000: Number of Requests
7534: Number of Page Faults
0.246600: Hit Rate
    7534
10000: Number of Requests
5130: Number of Page Faults
0.487000: Hit Rate
    5130
```

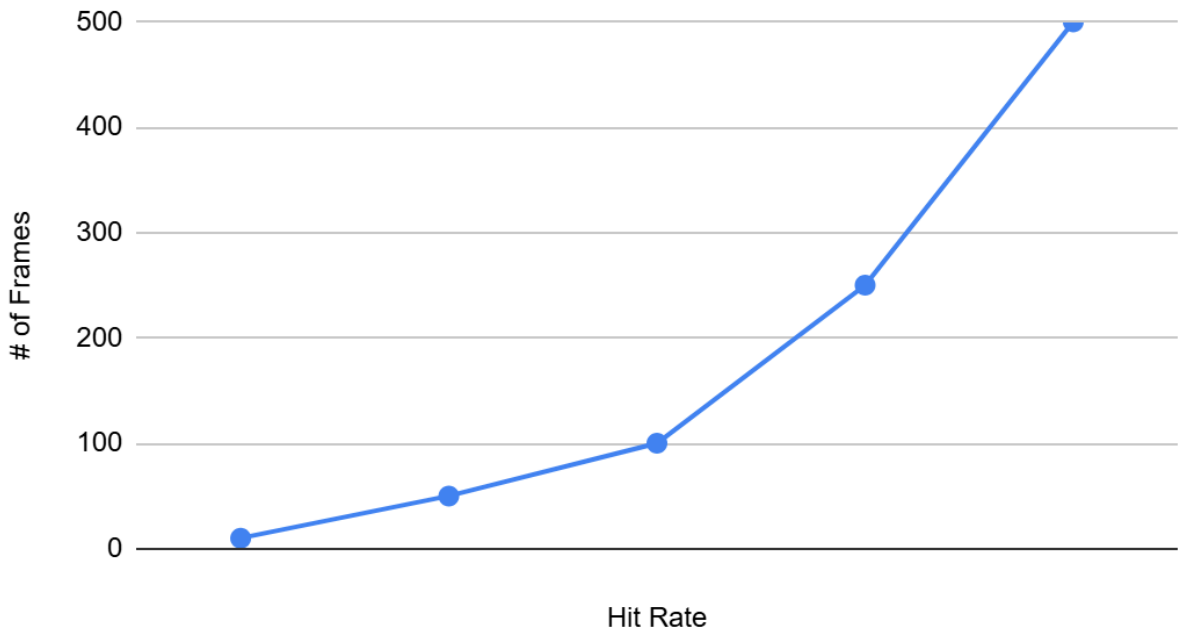
```
LRU 10K Test with cache size = 10, 50, 100, 250, 500
10000: Number of Requests
9915: Number of Page Faults
0.008500: Hit Rate
    9915
10000: Number of Requests
9510: Number of Page Faults
0.049000: Hit Rate
    9510
10000: Number of Requests
9029: Number of Page Faults
0.097100: Hit Rate
    9029
10000: Number of Requests
7532: Number of Page Faults
0.246800: Hit Rate
    7532
10000: Number of Requests
5206: Number of Page Faults
0.479400: Hit Rate
    5206
```

```
Second Chance 10K Test with cache size = 10, 50, 100, 250, 500
10000: Number of Requests
9915: Number of Page Faults
0.008500: Hit Rate
    9915
10000: Number of Requests
9510: Number of Page Faults
0.049000: Hit Rate
    9510
10000: Number of Requests
9022: Number of Page Faults
0.097800: Hit Rate
    9022
10000: Number of Requests
7526: Number of Page Faults
0.247400: Hit Rate
    7526
10000: Number of Requests
5178: Number of Page Faults
0.482200: Hit Rate
    5178
```

	FIFO		LRU		Second Chance	
	Page Faults	Hit Rate	Page Faults	Hit Rate	Page Faults	Hit Rate
Averages:	8222.6	0.17774	8238.4	0.17592	8230.2	0.1769
Most Page Faults		Highest Hit Rate				
LRU		FIFO				



LRU



Second Chance