20110236

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DS PA3

Cache is a software or hardware component that stores part of the data so that future requests could be implemented efficiently. To complete task 5 of PA3, I created two implementations of dictionary i.e. with cache and the other without cache and saw the time difference between both implementations

To impellent the cache LFU policy was adopted i.e. remove the item from the cache that is least searched when finding keys. The key on which the search was called for the least amount of time was removed from the table and replaced by the new key. Furthermore, the cache was built using array of structures. Each structure contained key, value and counter. Whenever, search was called and the key was presented in the table, the counter was increased by one and the table was sorted.

The time for search was less when cache was used and greater when cache was not used. The cache size was limited to 500 only and 655 words were searched.

```
PS C:\Users\ahmed\OneDrive - Higher Education Commission\Spring 2019\Data Structures\PA3\Cache> ./a
Time Taken with Cache : 126.222 SECONDS.
Elements : 655
Time Taken : 149.154 SECONDS.
words : 655
```