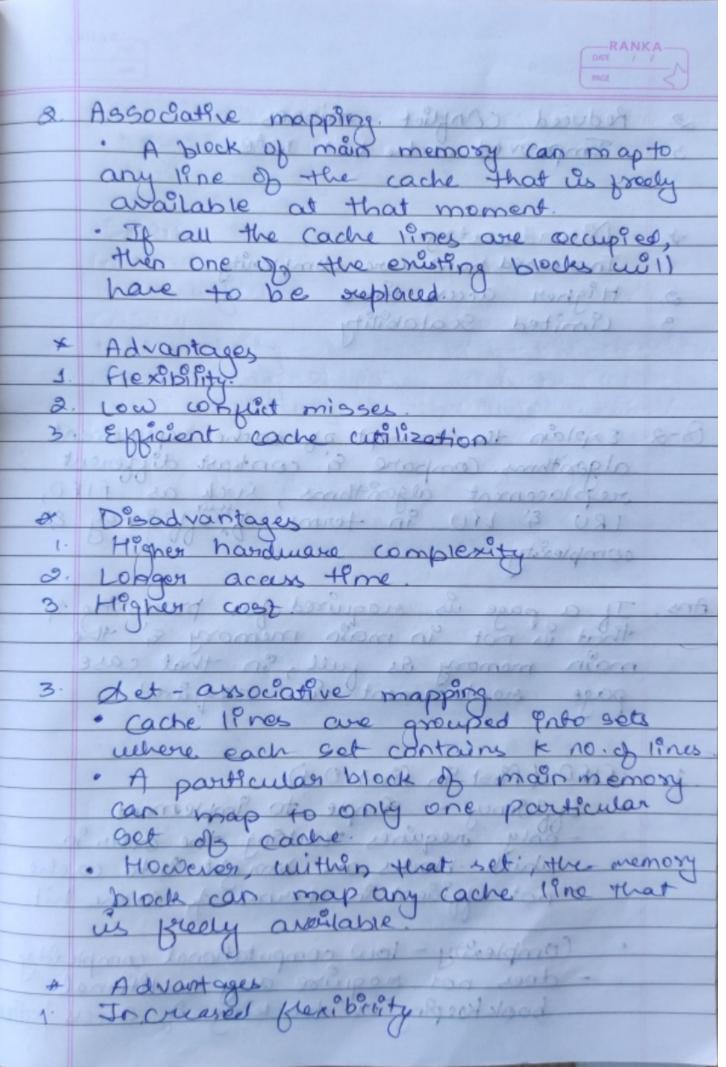
Assignment - S Ot Describe différent mappings junc used in cache mamony oxyanisation such as direct mapping associative mapping i set - associative mapping. Discuss fle advantages i direct anatomatages of Acach mapping Any Peggerent types of cache mapping are! 1 Sacritoparticular block of main memory can map only to a particular 19ne of the cache the new incoming block will always that particular toline. Advantages :-Simplicity 3. Low Hardmane complenity 3. Deterministic access time Cost effective. Disadvantages Cimited associativity. 3. Unever cache utilization. 4. Inflexibility

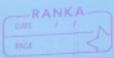


2. Reduced conflict imisses of the book of memory toolt to A PDisodvountages who set 110 Increased handware comprenity and 3. Higher access time and of such 3. Consted Scalability. Advantage 8-2 Explain the concept of cache replacement algorithms. Compare & conteast different replacement algorithms, such as fIFD, IRU & LFU in terms of officency & It a page is oroquised fox processing st that is not in main memory & the page replacement in required FIFO PERST ON PREST OUT Eggeny - Simple to Implement

- only requires tracking the order in

which blocks are bornight into cache

not efficient in terms of cache hit - does not require any additional bookkeeping or teaching of access patter



2. LRU (Least Recently Used): · Efficiency - LRU aims to suplace the deast vicently used block in the cache, assuming that recently used brocks are more tekely to be accessed again

- can be effective in capturing temporal

Locality & improving cache hit values · Complexity - higher computational complexity - complexity grucouses with the cache size ei efficiency of the implementation. 3. LFU (Least frequently used):

· Efficiency - replaces the least prequently

wed block in the cache - aims to capture the prequency of block accesses. - can be effective in scenarios with vouging cache just rates · Comprexity - higher computational comprexity compared to FIFO. brock accesses of updating the frequency counters