

Jack LoCasto
pa4-cache simulator README

Main Data Structure:

I structured my cache as an array of Queue*'s. These Queue structures contain a Node* and an integer to hold the size of the Queue, meaning how many lines currently filled in the set. The Node structure contains an long data field and a Node* next field. I used Nodes in order to implement a queue to control the FIFO replacement scheme.

Cache Observations:

From my observation, cache A gives a better cache hit ratio. Looking at each test case, cache A has more hits and less misses or exactly the same amount of hits and misses as cache B. I believe this is because of where the cache is indexing each address. Cache B's index bits are coming from the most significant bits and those bits have a higher chance of being the same than if they were taken from the middle like in cache A. This causes the cache to continuously attempt to put each address in the same set therefore taking out other addresses which may be referenced to later.

