Buffer Cache

AOS assignment

Language of choice Java

First assessment dated 30th Jan, 2019

header of the buffer cache

```
bufferNode {
    int deviceNumber;
    int blockNumber;

    boolean status;
    // there will be a number
    // a number of status hold
    // that will hold the status
    // like delayed write,
    // lock or unlocked etc

    // pointers for
    // doubly linked lists
    node *previousHashQueue;
    node *nextHashQueue;
    node *previousFreeList;
    node *nextFreeList;
```

```
}
```

Buffers will be stored in LRU manner

Hash Queue

1. *Let **numberOfHashQueue** denote the number of hash queues of the buffer cache*
2. *Let **lengthOfHashQueue** denote the number of block holders in Buffer Cache*

```
hashQueue[sizeOfBufferCache:4]
```

Using the *hashing* we choose which hashQueue to put the block data of the buffercache

```
int whichHashQueue(int blockNumber){
    return blockNUmber % numberOfHashQueues
}
```

Approach that I will use :-

1. I will define a class namely *list,* as the bufferNode can be part of both *freeList* and *hashQueue,* so that it can both objects will have a
   coherant nature for traversal along both the lists *(type:doubly*

linkedlist)

Will also use Java Multithreading to simulate the *sleep* opertion of the

thread *untill the buffer becomes free*.

2. Will make use of methods like notify() and notifyAll()
3. Will use a file to simulate the behaviour of secondary storage device()
4. working on it

Initial Condition

```
for i 1:numberOfHashQueues{
    hashQueue[i] = null;
}
```