Nilay Modi

UID : 404429944

**Project 4**

1) All of my classes work great.

2) I have satisfied the Big-O requirements

3)

Set method

get head node from the appropriate bucket’s array position (using the hash function)

while node exists

if node’s key is equal to KEY

update node’s value to VALUE

if node is not permanent

touch node

return true

go to next node

if HashTable is full return false

create new node with appropriate key, value, permanent, next should bucket’s head node (use hash function), previous should be nullptr

add created node to head of the bucket and make appropriate connections

if not permanent

create temp node with appropriate key, value, permanent, next should most recent list’s head

add temp node to the head

change head and tail appropriately

increment total nodes

return true

Touch method

Go through every node in most recent list

if node’s key matches KEY

if node is equal to most recent list head

return false

if node is equal to most recent tail

most recent tail is equal to node’s previous

connect before and after nodes of node appropriately

move node to the beginning of most recent list

point most recent list’s head to the node

go to next node

return true

Discard method

set leastRecent to most recent list’s tail

if leastRecent is not nullptr

set key of least recent’s key

if least recent is equal to most recent

set both to nullptr

else

reset most recent list’s tail to the one before

delete leastRecent

go through every bucket

if node in bucket is not nullptr

if node’s key matches with acquired key

set value to node’s value

delete node appropriately and make proper connections

decrement total nodes

return true

go to next node

return false