Lab 8

# Exercise 1

'''imports'''

from pythonds.basic.queue import Queue

import random

def hotPotato(namelist, num):

simqueue = Queue()

for name in namelist:

simqueue.enqueue(name)

while simqueue.size() > 1:

for i in range(num):

simqueue.enqueue(simqueue.dequeue())

simqueue.dequeue()

return simqueue.dequeue()

'''Creates a random number, the passes it along to play hot potatoe!'''

def main():

num = random.randint(0, 1000) #Chooses a random number between 0, and 1000 to play the game for. Reasonably, you probably don't want to play for more than 1000 iterations, but my computer will.

print(str(num)) #Prints the iterations, in case you wanted to test and make sure it was correct in terms of interations.

print(hotPotato(["Bill","David","Susan","Jane","Kent","Brad"], num))

if(\_\_name\_\_ == "\_\_main\_\_"):

main()

Outputs:

1.

196

Susan

2.

118

David

3.

860

Bill

4.

59

Bill

# Exercise 2

from pythonds.basic.deque import Deque

def palchecker(aString):

chardeque = Deque()

for ch in aString: #Coverts string to a queue

chardeque.addRear(ch)

stillEqual = True

while chardeque.size() > 1 and stillEqual:

first = chardeque.removeFront() #Grabs and removes the first character

last = chardeque.removeRear() #Grabs and removes the last character.

if first == " ": #Checks to make sure the first character is not a space

first = chardeque.removeFront()

if last == " ": #Checks to make sure the last character is not a space

last = chardeque.removeRear()

if first != last: #Checks if characters are equal.

stillEqual = False

return stillEqual #Returns result.

'''Test cases print out.'''

print(palchecker("lsdkjfskf"))

print(palchecker("radar"))

print(palchecker("I PREFER PI"))

print(palchecker("BEMIDJI STATE UNIVERSITY"))

print(palchecker("RACECAR RACECAR"))

Output:

False

True

True

False

True