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
```