----------#CISC235 A1 ReadMe#----------

Question 1
==========
|running the code:
in order to run the code for q1 all one must do is open-
q1.py and run the '__main__' method.
in pycharm all one has to do is click the green play button-
beside said method.
to change the parameters alter the [n] and [k_start] variables in-
the main method

|lowest k:
in order to test what the lowest [k] could be i created 2-
functions, test() and experiment() where test could test each-
algorithm with the specified data (n = [1000, 5000, 10000] ;-
targets = [half are from list to be searched]) and experiment-
logged the time it took to search through an ever increasing-
number of targets until the time it took to complete algorithm_b-
was less than the time for algorithm_a.
my results were:

n	1000	5000	10,000
k_smallest	108	740	1460
k_average	~150	~850	~1700

Question 2
==========
in order to run tis program all one must do is find the __main__ method in
q2.py and run it.
the tests are printed in the console. the display is meant to show if the
Stack class and its methods are working
correctly. if they are, the 'result' and 'control' values in each row
should be the same.
for example:

```
pop test:
results         control
-----------------------
['world']       ['world']
[]              []
world           world
```

shows the original list followed by the list after being popped and the
value obtained from using pop
NOTE: the control output is constant so if one were to change the
parameters in the functions, the 'results' and
'control' would not match up.

Question 3
==========
the operation of this program is straightforward: go to q3.py and run the main method.
the program will output a series of Circular Queues with operations applied to them.

first, a queue is created and tested for elements by dequeue-ing it and printing it.
second the queue is enqueued until it is full.
finally, the queue is dequeued until it is empty.

```
HEAD-[]-TAIL [] [] [] []
...enqueue...
HEAD->[0]->TAIL [1] [2] [3] [4]
...dequeue...
HEAD->[]->TAIL [] [] [] []
```

the test parameters can largely be changed by altering the variable that dictates the range of the loops.