Name:....

Q14

## **CS2123 Data Structures**

Q1. (10pt) Suppose we are implementing a circular double linked list ADT to store some integer numbers. Accordingly, we have the following declarations and prototypes in circular.h

/\* circular.h: Suppose we included boilerplates and, standard and textbook's libraries here \*/
typedef struct circularCDT \*circularADT;

circularADT NewCircularDLL(); /\* creates an empty circular list; \*/

void circular\_insert(circularADT cl, int n); /\* inserts a given integer to the circular list (there is no ordering, numbers can be inserted in any order). \*/

double circular\_average (circularADT cl); /\* finds the average of the numbers in the circular list (make sure each number is considered once). if there is no number, return 0\*/

You are asked to complete the below circular.c by implementing the missing two functions.



**Example**: suppose currently we have the following circular double linked list.



if we call circular\_insert (cl, 6); then the list will look like



Name.....

void circular\_insert(circularADT cl, int n)

{ /\* inserts a given integer to the circular list (there is no ordering, numbers can be inserted in any order).
Also consider the case when there is no element before and you insert the very first one! \*/

double circular\_average(circularADT cl)