Create a circular doubly-linked list in C. Each node should hold a number as an identifier of the node. You should have a menu and implement the following functions:

- addNode(value) - adds the node to the end of the list with the particular value
- addNodePosition(value, position) - adds the node with ***value*** at ***position*** in the linked list. (ie, if position is 3, then you should add this as the 4th node in the list)
- deleteNode(value) - deletes the first node in the list with this value
- deleteNodePosition(position) - deletes the node at ***position*** in the list.
- printList(list) - will print the list starting at the head of the list
- printListReverse(list) - will print the list from the tail instead of the head.

Note: All nodes should be typedef structs. All memory allocation should be handled using malloc(). All list traversal should be done with pointers. You should use the code from the class slides as a starting point.

Submit as per the course submission instructions. Include a code diary as well as your code and testing.

Due date: Note that all assignments are due the last day of classes. This assignment is due on Monday, but the hard deadline is midnight on Tuesday. Regular late penalties apply.