Shoubra Faculty of Engineering **Computer Engineering Department**
Benha University **3rd year**

Data Structure: Assignment #3

Programming problems:

1. Write and test this method:
   void put (LinkList L, int i, int x)
   // inserts x as element number i in the double-ended linked list L;
   For example, if list is {22, 33, 44, 55, 66, 77, 88, 99}, then put (list, 3, 50) will change list to {22, 33, 44, 50, 55, 66, 44, 88, 99}. Hint: if i = 0, replace the value of the first node with x, and insert a new node immediately after it that contains the previous first value.

2. Write and test this method:
   void swap (LinkList L, int i, int j)
   // swaps the ith element with the jth element in the doubly linked list L;
   For example, if list is {22, 33, 44, 55, 66, 77, 88, 99}, then swap (list, 2, 5) will change list to {22, 33, 77, 55, 66, 44, 88, 99}.

Assignment Problem:

- Write and test this method:
  void rotateLeft (Node list)
  // moves the first element of the specified list to its end;
  For example, if list is {22, 33, 44, 55, 66, 77, 88, 99}, then rotateLeft (list) will change list to {33, 44, 55, 66, 77, 88, 99, 22}. Note that no new nodes are created by this method.