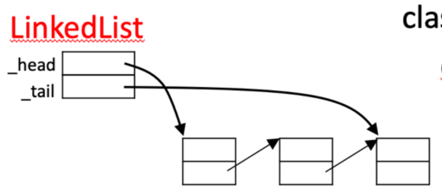
CSC 120 **ICA-16**

Work with your neighbor. (This will be graded for participation only.)

1. Suppose that we modify the linked list class to maintain a tail reference. The modified code for the `LinkedList` class and a sample linked list are shown below:



```
class LinkedList:
    def __init__(self):
        self._head = None
        self._tail = None
```

Write the `append(self, new)` method for the class.

ANS:

```
def append(self,new):
    if self._head == None:
        self._head = new
        self._tail = new
     else:
        self._tail._next = new

        self._tail = new
```

2. Below are the method headers for the definition for a `Stack` ADT. Fill out the code to implement the methods for the Stack ADT.

ANS:

```
 class Stack:

      def __init__(self):

          self._items = []


      # adds item to the top of the Stack
      def push(self, item):
          self._items.append(item)

      # removes the top item from the Stack
      def pop(self):
          return self._items.pop()
```

```
    def is_empty(self):

        return self._items == []
```

Note: We may not get to these next 2 problems, in which case they will move to ICA-17.

(These two problems were moved to ICA-17.)

3. Write a *function* `reverse(s)` that reverses the string `s` using a `Stack`. The function returns the reversed string.

4. Write a *function* `balanced(s)` that returns `True` if the string `s` is balanced with respect to the bracket characters `'['` and `']'` and `False` otherwise. Use a `Stack` in your implementation of this function.