COEN 70: Formal Specification and Advanced Data Structures

Winter 2015

Lab 3: List ADT with single linked list

We are going to implement the List ADT using the single linked list data structure. The node class will be implemented as an inner class of the List class. Here is the List class interface:

```
class List {
public:
        // Function: Constructors
        List();
        // Function: Destructor
        ~List();
        // Function: Copy constructor
        List(const List&);
        // Function: Assignment operator
        const List& operator=(const List&);
        // Function: output operator
        friend ostream& operator<<(ostream&, const List&);
        // Function: Insert an item to the list
        // Postcondition: insert after the pointer and
        // move the pointer to the new item
        void insert(const int&);
        class node {
                node(int, node*);
                int data;
                node* next;
        };
private:

        node* list;
        int size;
        node* cursor;
};
```

You are to implement this interface and properly test it.