

Lab Purpose

Practice creating, manipulating linked lists, BGLinux.

Always bring to class

1. Gaddis' book, How-to handouts from Canvas and your class notes.
2. This assignment sheet & the grade sheet for this lab already printed out.
3. USB Flash drive(s) or other storage media.

Mandatory Instructions

Continue development of the group project from Wednesday (Quiz3) and modify it to include the following:

- (1) Add a loop to create 10 different card hands.
- (2) Create Node structure to contain an array of 5 Cards and Node pointer pNext.
- (3) After each hand is created (existing code) create a new Node dynamically and copy data of the hand into the node (element by element)
- (4) Append the node to a linked list of nodes.
- (5) Print all nodes in the list (remove printing of individual hand from existing code).
- (6) Deallocate the linked list using code for deleteNode given below.
- (7) Implement the following linked list functions:

```
void appendNode(Node* &pHead, Node* pNew);  
void printNodes(Node*);
```

```
void deleteNodes(Node* &pHead)  
{  
    Node* pTemp = pHead;  
    if (pHead)  
    {  
        while (pTemp != nullptr)  
        {  
            pHead = pTemp->pNext;  
            delete pTemp;  
            pTemp = pHead;  
        }  
    }  
}
```

Example output from printNodes() function:

```
Hand 1
Card(1): Queen of Clubs
Card(2): 8 of Clubs
Card(3): 1 of Diamonds
Card(4): 10 of Clubs
Card(5): 9 of Diamonds
Hand 2
Card(1): 9 of Diamonds
Card(2): 10 of Hearts
Card(3): 7 of Spades
Card(4): Queen of Diamonds
Card(5): Jack of Clubs
Hand 3
Card(1): 6 of Clubs
Card(2): 3 of Hearts
Card(3): Queen of Spades
Card(4): 2 of Diamonds
Card(5): Queen of Clubs
Hand 4
Card(1): 7 of Spades
Card(2): 3 of Diamonds
Card(3): 9 of Hearts
Card(4): King of Hearts
Card(5): 8 of Clubs
Hand 5
Card(1): 5 of Spades
Card(2): Queen of Clubs
Card(3): 8 of Hearts
Card(4): 7 of Spades
Card(5): Queen of Diamonds
Hand 6
Card(1): King of Hearts
Card(2): Queen of Diamonds
Card(3): King of Clubs
Card(4): Queen of Spades
Card(5): 9 of Clubs
Hand 7
Card(1): 4 of Clubs
Card(2): Jack of Hearts
Card(3): 1 of Hearts
Card(4): King of Diamonds
Card(5): 6 of Spades
Hand 8
Card(1): 9 of Clubs
Card(2): Jack of Clubs
Card(3): 1 of Diamonds
Card(4): 7 of Diamonds
Card(5): 7 of Spades
Hand 9
Card(1): 7 of Spades
```

Optional Instructions

Sometimes these will be worth some bonus points. None this time.

What to turn in?

```
$ photo lab5.log
$ ls -l
$ cat lab5.cpp
$ g++ lab5.cpp
$ Ctrl+d
$ logout
```

Upload grade sheet to Canvas!!!