

Fall 2016 CST8234 – C Programming

Lab 05: Simple Link List

Create a directory `Lastname_05` you are going to develop your lab here.

Given a simple linked list defined as:

```
struct node {
    int data;
    struct node *next;
};
```

Implement the following functions:

`int Length(struct node* head);`

Returns the number of nodes in the list.

`void PrintList(struct node* head);`

Prints all the nodes on a list

`void Add(struct node headRef, int new);`**

Given an int and a reference to the head pointer (i.e. a struct node** pointer to the head pointer), add a new node at the head of the list.

`int Delete(struct node headRef);`**

Takes a non-empty list, deletes the head node, and returns the head node's data.

`void ZeroList(struct node headRef);`**

Deallocates all of its memory and sets its head pointer to NULL (the empty list).

Write a small program in C to test all your functions. Your program should present a command line interface to the user. The following commands are valid:

```
a(dd) {x } = add a new node with value x to the list, at the front of the list
d(el)      = delete the first node of list
l(ength )  = print the number of nodes in the list
p(rint)    = print the complete list
z(ero)     = delete the entire list
e(xit)     = quit the program
```

Use `fscanf()` instead of `scanf()`