Prac 9 Design

Node
Int value – stores the value at that node Node* next – stores the position of the next node
Int getValue – returns the value Node* getNext – returns position of the next node void setValue – sets the value stored in that node void setNext – sets the next nodes position

- This is the class that holds the information required to create a linked list
- holds the value and the pointer to the next node
- This is a general form of a node for a linked list class

Container
Node* head – pointer that points to the first node int length – the length of the list
Int getLength – returns the lists length Node* getHead – returns the lists head int getMiddle – returns the middle of the list void addNode – adds a node to the tail void removeNode – removes a node from the head

- This is the class that will hold the linked list
- it will also hold the functions that will perform the required operations on the linked list
- This will be the class used to manipulate the linked list

Main:

- will take in a single line of input
- will split that line accordingly
- will then decide what function from container to call based on the string
- will then separate the number from A if it need to be added
- will then perform functions
- will then output the resulting linked list and the middle values

Testing:

Input 1:
    A123 R
Output 1:
    empty 0
Input 2:
    R A123
Output 2:
    123 123

Input 3:

Prac 9 Design

R R

Output 3:

empty 0

Input 4:

A123

Output 4:

123 123

Input 5:

A123 R A555 A1 A2 R

Output 5:

1->2 1 2

Input 6:

A1 A2 A3 A4 A5

Output 6:

1→2→3→4→5 3

Input 7:

A1 A2 A3 A4

Output 7:

1→2→3→4 2 3