

L11+L12

Data Structures and Algorithms: CSE2003

**Name:** Allen Ben Philipose

**Reg No:** 18BIS0043

Midlab

**Question**

Develop a pseudo code to traverse a single linked list and search for a negative value node. If found delete its successor node from the linked list.

**Algorithm**

* Initialize the node with a value and a pointer “next”
* main() defined
* New node P1 created
* P1 value assigned by the user
* Do-while loop: // Input
  + Input the control variable ch
  + Ch = ‘Y’, repeat loop
  + New node P2 created
  + P1->next = P2
  + Input the new value to P2
  + P1 = P2
  + Loop till ch = ‘N’
* Print all nodes “before operation”
* While loop: // Traversal
  + If not null
  + If negative number
  + If next node not null
  + P2 - next node, P1 - current node
  + p1->next=p2->next
  + Delete P2 node
* Print all nodes “after operation”

**Code**

// Objective is to delete all

// elements whose predecessor is a

// negative number

#include <iostream>

using namespace std;

struct node{

int value;

node \*next;

} \*start;

int main(){

cout<<"The First Element: ";

node \*p1=new node;

// creating a new node

start=p1;

cin>>p1->value;

p1->next=NULL;

char ch;

// For inserting

do {

cout<<"Add another element ? (Y/N): ";

cin>>ch;

if(ch=='Y'){

node\*p2=new node;

// creating another node

p1->next=p2;

cout<<"\nNext value: ";

cin>>p2->value;

p2->next=NULL;

p1=p2;

}

else if(ch!='N'){

cout<<"\nTry again...\n";

}

} while(ch!='N');

cout<<"\n";

p1=start;

cout<<"\nBefore operation: \n";

while(p1!=NULL){

cout<<p1->value<<", ";

p1=p1->next;

}

cout<<"\n";

// Traversing the array

p1=start;

while(p1!=NULL){

if(p1->value<0){

if(p1->next!=NULL){

node\*p2=new node;

p2=p1->next;

p1->next=p2->next;

delete p2;

}

}

p1 = p1->next;

}

p1=start;

cout<<"\nAfter operation: \n";

while(p1!=NULL){

cout<<p1->value<<", ";

p1=p1->next;

}

}

**Inference**

1. Every element with a negative predecessor will be removed
2. When 2 negative numbers come together, the negative successor will be removed first and hence it will yield no effect on the number following.
3. Program repeats till the exit code “N” is inputted and all other characters will continue repeating the insert command
4. Ending with a negative value yields no effect

**Output**



