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SE-C Comp,Viit,Pune

***CODE:***

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#include<iostream>

using namespace std;

struct Node{

int data;

string name,branch,semester,phone;

struct Node\*next;

};

int size=0;

void printNode(Node \*node){

cout<<node->data<<" "<<node->name<<" "<<node->branch<<" "<<node->semester<<" ";

cout<<node->phone<<endl;

}

Node\* insertAtStart(Node\* head,Node \*nn){

/\*Node\* nn=new Node;

nn->data=data; //init all data here;\*/

nn->next=head;

head=nn;

size++;

return head;

}

Node\* insertAtEnd(Node\* head,Node \*nn){

/\*Node\* nn=new Node;

nn->data=data; //init all data here;\*/

nn->next=NULL;

size++;

Node\* p=head;

if(p!=NULL){

while(p->next!=NULL)

p=p->next;

p->next=nn;

return head;

}else return nn;

}

Node\* deleteNode(Node\* head,int position){

Node\* ptr,\*q;

if(position==0){ //for first position

ptr=head;

head=head->next;

ptr->next=NULL;

delete(ptr);

}else{ //for others

ptr=head;

for(int i=1;i<position;i++){

ptr=ptr->next;

}

q=ptr->next;

ptr->next=ptr->next->next;

q->next=NULL;

delete(q);

}

size--;

return head;

}

Node \*insertAtPosition(Node\* head,Node \*nn,int position){

if(position<=0){

return insertAtStart(head,nn);

}

else if(position>=size){

return insertAtEnd(head,nn);

}

else{

Node\* ptr=head;

for(int i=1;i<position;i++){

ptr=ptr->next;

}

/\*Node\* nn=new Node;

nn->data=data;\*/

nn->next=ptr->next;

ptr->next=nn;

size++;

}

return head;

}

void printAllNodes(Node\* head){

Node\* ptr=head;

while(ptr!=NULL){

printNode(ptr);

ptr=ptr->next;

}

}

int indexOfNode(Node \*head,int data){

int index=-1;

Node \*p=head;

while(p!=NULL){

index++;

if(p->data==data){

return index;

}

p=p->next;

}

return -1;

}

Node \*createNode(){

Node \*nn=new Node;nn->next=NULL;

cin>>nn->data>>nn->name>>nn->branch>>nn->semester>>nn->phone;

return nn;

}

void printMenu(){

cout<<"1)Insert Node at start\t";

cout<<"2)Insert Node at position\t";

cout<<"3)Insert Node at end\n";

cout<<"4)Delete Node at position\t";

cout<<"5)Search Node\t";

cout<<"6)Display SLL\t";

cout<<"7)Print size of SLL\t";

cout<<"8)End\n";

}

int main(){

Node\*head=NULL;

/\*head=insertAtStart(head,45);head=insertAtStart(head,47);

head=insertAtPosition(head,46,1);head=insertAtEnd(head,70);printAllNodes(head);

head=deleteNode(head,3);

printAllNodes(head);cout<<size<<endl;

cout<<indexOfNode(head,47);\*/

int choice,position,prn;

do{

printMenu();

cin>>choice;

switch(choice){

case 1:{

head=insertAtStart(head,createNode());

break;

}

case 2:{

cout<<"position:";

cin>>position;

head=insertAtPosition(head,createNode(),position);

break;

}

case 3:{

head=insertAtEnd(head,createNode());

break;

}

case 4:{

cin>>position;

head=deleteNode(head,position);break;

}

case 5:{

cin>>prn;

cout<<indexOfNode(head,prn)<<endl;break;

}

case 6:{

printAllNodes(head);break;

}

case 7:{

cout<<size<<endl;break;

}

case 8:{

while(head!=NULL){

head=deleteNode(head,0);

}

break;

}

}

}while(choice!=8);

return 0;

}

***Output:***

