DSA ASSIGNMENT 4  
HARSH JAISWAL  
BT22CSH013   
  
  
  
  
  
#include<bits/stdc++.h>

using namespace std;

struct Node

{

int data;

Node \*next;

Node \*prev;

};

void create(string s, Node \*first)

{

for (int i = 0; i < s.length() / 2; i++)

{

swap(s[i], s[s.length() - 1 - i]);

}

cout << s << endl;

int loop = s.length() / 4;

int st = 0;

int en = 4;

string numStr = s.substr(0, 4);

int num = stoi(numStr);

Node \*t = first;

Node \*back = first;

t->data = num;

t->next = NULL;

t->prev = NULL;

loop = s.length() / 4 - 1;

st = 0;

en = 4;

while (loop--)

{

st += 4;

en -= 4;

numStr = s.substr(st, 4);

int num = stoi(numStr);

t = new Node;

t->data = num;

t->next = NULL;

t->prev = back;

back->next = t;

back = t;

}

}

void display(Node \*first)

{

Node \*p = first;

while (p)

{

cout << p->data << " ";

p = p->next;

}

cout << endl;

}

Node \*add(Node \*n1, Node \*n2)

{

Node \*result = nullptr;

Node \*p1 = n1;

Node \*p2 = n2;

int carry = 0;

Node \*tail = nullptr;

while (p1 || p2 || carry)

{

int sum = carry;

if (p1)

{

sum += p1->data;

p1 = p1->next;

}

if (p2)

{

sum += p2->data;

p2 = p2->next;

}

carry = sum / 10000;

sum = sum % 10000;

Node \*newNode = new Node;

newNode->data = sum;

newNode->next = nullptr;

newNode->prev = tail;

if (tail)

{

tail->next = newNode;

}

else

{

result = newNode;

}

tail = newNode;

}

return result;

}

int main()

{

string s = "122442112242";

string s2 = "223144421221";

Node \*n1 = new Node;

Node \*n2 = new Node;

create(s, n1);

create(s2, n2);

display(n1);

display(n2);

Node \*res = add(n1, n2);

display(res);

return 0;

}  
  
