**Q)Write a C program to add 2 long integers which are represented using linked list and store the result in the resultant linked list.**

**A) #include <stdio.h>**

**#include <stdlib.h>**

**struct node {**

**int data;**

**struct node\* link;**

**};**

**struct node\* createnode(int data) {**

**struct node\* new = (struct node\*)malloc(sizeof(struct node));**

**new->data = data;**

**new->link = NULL;**

**return new;**

**}**

**struct node\* insertend(struct node\* head, int data) {**

**struct node\* new = createnode(data);**

**if (head == NULL) {**

**return new;**

**}**

**struct node\* temp = head;**

**while (temp->link != NULL) {**

**temp = temp->link;**

**}**

**temp->link = new;**

**return head;**

**}**

**struct node\* insertbeggining(struct node\* head, int data) {**

**struct node\* new = createnode(data);**

**new->link = head;**

**head = new;**

**return head;**

**}**

**void print(struct node\* head) {**

**struct node\* temp = head;**

**while (temp != NULL) {**

**printf("%d", temp->data);**

**temp = temp->link;**

**}**

**printf("\n");**

**}**

**struct node\* addNumbers(struct node\* L1, struct node\* L2) {**

**struct node\* L3 = NULL;**

**int carry = 0;**

**while (L1 != NULL || L2 != NULL || carry != 0) {**

**int num1 = 0, num2 = 0;**

**int sum = 0;**

**if ( L1 != NULL) {**

**num1 = L1->data;**

**L1 = L1->link;**

**}**

**if (L2 != NULL) {**

**num2 = L2->data;**

**L2 = L2->link;**

**}**

**sum = num1 + num2 + carry;**

**carry = sum / 10;**

**sum = sum % 10;**

**L3 = insertbeggining(L3, sum);**

**}**

**return L3;**

**}**

**struct node\* convertToList(int num) {**

**struct node\* head = NULL;**

**if (num == 0) {**

**return createnode(0);**

**}**

**while (num > 0) {**

**int digit = num % 10;**

**head = insertend(head, digit);**

**num /= 10;**

**}**

**return head;**

**}**

**int main() {**

**int num1, num2;**

**struct node\* L1 = NULL;**

**struct node\* L2 = NULL;**

**struct node\* L3 = NULL;**

**printf("Num1: ");**

**scanf("%d", &num1);**

**printf("Num2: ");**

**scanf("%d", &num2);**

**L1 = convertToList(num1);**

**L2 = convertToList(num2);**

**L3 = addNumbers (L1, L2);**

**printf("\nSum of given numbers: ");**

**print(L3);**

**return 0;**

**}**

