#include <stdio.h>

#include <stdlib.h>

struct node

{

int data; //Data of the node

struct node \*next; //Address of the next node

}\*stnode;

void createNodeList(int n); // function to create the list

void displayList(); // function to display the list

void sort(int n);

int main()

{ int n;

printf("\n\n Linked List : To create and display Singly Linked List :\n");

printf("-------------------------------------------------------------\n");

printf(" Input the number of nodes : ");

scanf("%d", &n);

createNodeList(n);

printf("\n Data entered in the list : \n");

displayList();

sort(n);

return 0;

}

void createNodeList(int n)

{

struct node \*newNode, \*tmp;

int data, i;

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

if(stnode == NULL) //check whether the fnnode is NULL and if so no memory allocation

{ printf(" Memory can not be allocated."); }

else

{ // reads data for the node through keyboard

printf(" Input data for node 1 : ");

scanf("%d", &data);

stnode->data = data;

stnode->next = NULL; // links the address field to NULL

tmp = stnode;

// Creating n nodes and adding to linked list

for(i=2; i<=n; i++)

{ newNode = (struct node \*)malloc(sizeof(struct node));

if(newNode == NULL)

{

printf(" Memory can not be allocated.");

break; }

else

{ printf(" Input data for node %d : ", i);

scanf(" %d", &data);

newNode->data = data; // links the num field of fnNode with num

newNode->next = NULL; // links the address field of fnNode with NULL

tmp->next = newNode; // links previous node i.e. tmp to the fnNode

tmp = tmp->next;

} }

}}

void displayList()

{

struct node \*tmp;

if(stnode == NULL)

{

printf(" List is empty.");

}

else

{

tmp = stnode;

while(tmp != NULL)

{

printf(" Data = %d\n", tmp->data); // prints the data of current node

tmp = tmp->next; // advances the position of current node

}

}

}

void sort(int n)

{

int i,j,k;

struct node \*temp1,\*temp2;

for(i=0;i<n;i++)

{

temp1=stnode;

temp2=temp1->next;

for(j=i+1;j<n;j++)

{

if(temp1->data>temp2->data)

{

k=temp1->data;

temp1->data=temp2->data;

temp2->data=k;

}

temp1=temp2;

temp2=temp1->next;

}

}

temp1=stnode;

while(temp1!=NULL)

{

printf("%d ",temp1->data);

temp1=temp1->next;

}

}

Linked List : To create and display Singly Linked List :

-------------------------------------------------------------

Input the number of nodes : 4

Input data for node 1 : 3

Input data for node 2 : 9

Input data for node 3 : 1

Input data for node 4 : 5

Data entered in the list :

Data = 3

Data = 9

Data = 1

Data = 5

1 3 5 9