TITLE 44

Write a C program to create a doubly linked list with 5 nodes

OBJECTIVE:

To create a doubly linked list with 5 nodes

PROBLEM STATEMENT:

In this program we need to create a doubly linked list. I

ALGORITHM:

START

INPUT: input from users

COMPUTATION: Computing the doubly linked list

DISPLAY: Displaying the doubly linked list

STOP

PROGRAM:

#include <stdio.h>

#include <stdlib.h>

struct node {

int num;

struct node \* preptr;

struct node \* nextptr;

}\*stnode, \*ennode;

void dllistcreation(int n);

void displaydllist();

int main()

{

int n;

stnode = NULL;

ennode = NULL;

printf("\n\n Doubly Linked List : Create and display a doubly linked list :\n");

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

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

scanf("%d", &n);

dilistcreation(n);

displaydilist();

return 0;

}

void dilistcreation(int n)

{

int i, num;

struct node \*fnNode;

if(n >= 1)

{

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

if(stnode != NULL)

{

printf(" Input data for node 1 : "); // assigning data in the first node

scanf("%d", &num);

stnode->num = num;

stnode->preptr = NULL;

stnode->nextptr = NULL;

ennode = stnode;

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

{

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

if(fnNode != NULL)

{

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

scanf("%d", &num);

fnNode->num = num;

fnNode->preptr = ennode;

fnNode->nextptr = NULL;

ennode->nextptr = fnNode;

ennode = fnNode; }

else

{

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

break;

}

}

}

else

{

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

}

}

}

void displaydilist()

{

struct node \* tmp;

int n = 1;

if(stnode == NULL)

{

printf(" No data found in the List yet.");

}

else

{

tmp = stnode;

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

while(tmp != NULL)

{

printf(" node %d : %d\n", n, tmp->num);

n++;

tmp = tmp->nextptr;

}

}

}

CONCLUSION:

This program helps us to understand how a doubly linked list can be created.

OUTPUT:

Doubly Linked List : Create and display a doubly linked list :

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

Input the number of nodes : 5

Input data from node 1 : 1

Input data from node 2 : 2

Input data from node 3 : 3

Input data from node 4 : 4

Input data from node 5 : 5

Data entered in the list are :

Data 1 = 1

Data 2 = 2

Data 3 = 3

Data 4 = 4

Data 5 = 5