**TITLE 45**

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

**OBJECTIVE:**

By the end of this problem we will be able to create a linked list with 5 nodes.

**PROBLEM STATEMENT:**

In this program we create a circular linked list with 5 nodes. Input from user:

Input the number of nodes :

Once the input is collected and stored the output is printed.

**ALGORITHM:**

START

Define variables: num, \* nextptr, \*stnode

INPUT: Read from the keyboard

COMPUTATION: Computing the circular linked list

DISPLAY: Displaying the circular linked list with 5 nodes

STOP

**PROGRAM:**

#include <stdio.h>  
#include <stdlib.h>  
  
struct node {  
    int num;  
    struct node \* nextptr;  
}\*stnode;  
   
  
void ClListcreation(int n);  
void displayClList();  
  
int main()  
{  
    int n;  
    stnode = NULL;  
printf("\n\n Circular Linked List : Create and display a circular linked list :\n");  
printf("-----------------------------------------------------------------------\n");    
  
    printf(" Input the number of nodes : ");  
    scanf("%d", &n);  
   
    ClListcreation(n);  
    displayClList();  
    return 0;  
}  
  
void ClListcreation(int n)  
{  
    int i, num;  
    struct node \*preptr, \*newnode;  
  
    if(n >= 1)  
    {  
        stnode = (struct node \*)malloc(sizeof(struct node));  
  
        printf(" Input data for node 1 : ");  
        scanf("%d", &num);  
        stnode->num = num;  
        stnode->nextptr = NULL;  
        preptr = stnode;  
        for(i=2; i<=n; i++)  
        {  
            newnode = (struct node \*)malloc(sizeof(struct node));  
            printf(" Input data for node %d : ", i);  
            scanf("%d", &num);  
            newnode->num = num;  
            newnode->nextptr = NULL; // next address of new node set as NULL  
            preptr->nextptr = newnode; // previous node is linking with new node  
            preptr = newnode;   // previous node is advanced  
        }  
        preptr->nextptr = stnode; //last node is linking with first node  
    }  
}  
  
void displayClList()  
{  
    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 in the list are :\n");  
  
        do {  
            printf(" Data %d = %d\n", n, tmp->num);  
  
            tmp = tmp->nextptr;  
            n++;  
        }while(tmp != stnode);  
    }  
}

**CONCLUSION:**

The simulation of the above C program helped me understand how a circular linked list is created.

**OUTPUT:**

Circular Linked List : Create and display a circular linked list :

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

Input the number of nodes : 5

Input data from node 1 : 2

Input data from node 2 : 3

Input data from node 3 : 4

Input data from node 4 : 5

Input data from node 5 : 6

Data entered in the list are :

Data 1 = 2

Data 2 = 3

Data 3 = 4

Data 4 = 5

Data 5 = 6