/*Write separate user defined functions for the following insert operations in a double linked list (i) Insert at End (ii) Insert after a specific value (iii) Insert before a specific value */

```
#include <stdio.h>
#include <stdlib.h>
#include <malloc.h>

struct node
{
   int data;
   struct node *next, *prev;
} * start, *newnode, *current;

void insertend();
void insertafterspecific();
void insertbeforespecific();

main()
{
   int x, ch;
   printf("Enter the data of the 1st node");
   scanf("%d", &x);
   newnode = (struct node *)malloc(sizeof(struct node));
   newnode->data = x;
   newnode->prev = NULL;
   newnode->next = NULL;
   start = newnode;
   current = newnode;
}

void insertend()
{
   int x;
   newnode = (struct node *)malloc(sizeof(struct node));
   printf("Enter the value of x");
   scanf("%d",&x);
   newnode->data=x;
   newnode->next=NULL;
   newnode->prev=current;
   current->next=newnode;
   current=newnode;
}

void insertafterspecific()
{
   int x,ele;
   newnode = (struct node *)malloc(sizeof(struct node));
   printf("Enter the value of x");
   scanf("%d",&x);
   printf("Enter the value after which you want to insert");
   scanf("%d", &ele);
   struct node *p,*q;
```

```
    p=start;
    while(p->data!=ele)
    {
       p=p->next;
    }
    q=p->next;
    newnode = (struct node *)malloc(sizeof(struct node));
    newnode->data=x;
    newnode->prev=p;
    p->next=newnode;
    newnode->next=q;
    q->prev=newnode;
}

void insertbeforespecific()
{
    int x,ele;
    newnode = (struct node *)malloc(sizeof(struct node));
    printf("Enter the value of x");
    scanf("%d",&x);
    printf("Enter the value after which you want to insert");
    scanf("%d", &ele);
    struct node *p,*q;
    while(p->next->data!=ele)
    {
       p=p->next;
    }
    q=p->next;
    newnode = (struct node *)malloc(sizeof(struct node));
    newnode->data=x;
    newnode->prev=p->prev;
    p->prev=newnode;
    newnode->next=q;
    q->prev->next=newnode;
}
```