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// Created by Ritwik Chandra Pandey on 08/02/21.
// 183215
// UCS-3 Assignment
// Stack using Linked List
#include<stdio.h>
#include<stdlib.h>
struct stack {
  int data;
  struct stack *next;
};
typedef struct stack *stk;
stk push(stk top, int x) {
  stk temp;
  temp = (stk)malloc(sizeof(struct stack));
  if(temp == NULL) {
     printf("Stack is overflow.");
  } else {
     temp -> data = x;
     temp -> next = top;
     top = temp;
     printf("Successfully pushed.\n");
  return top;
stk pop(stk top){
  stk temp;
  if(top == NULL) {
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printf("Stack is underflow.\n");
  } else {
     temp = top;
     top = top -> next;
     printf("Popped value = %d\n", temp -> data);
     free(temp);
  return top;
void display(stk top) {
  stk temp = top;
  if(temp == NULL) {
     printf("Stack is empty.");
  } else {
     printf("Elements of the stack are : ");
     while(temp != NULL) {
       printf("%d ", temp -> data);
       temp = temp -> next;
printf("\n");
stk DeleteStack(stk head ref)
{ if(head ref==NULL){
  printf("stack underflow!");
  return head ref;
  /* deref head_ref to get the real head */
  stk current = head ref;
  stk next;
  while (current != NULL)
     next = current->next;
     free(current);
```

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current = next;
  /* deref head ref to affect the real head back
  in the caller. */
  head ref = NULL;
  return head ref;
int main(){
  stk first = NULL;
  int select = 0,x;
  printf("\t\tSTACK USING LINKED LIST\n\n");
      do{
        printf("\t1.PUSH\n\t2.POP\n\t3.DISPLAY\n\t4.DELETE STACK\n\t5.EXIT\n");
        printf("\tPlease Enter Your Choice\n");
        scanf("%d",&select);
        switch(select)
           case |:
             printf("Enter element : ");
             scanf("%d", &x);
             first = push(first, x);
             printf("-----\n");
             break:
           case 2:
             first = pop(first);
             printf("-----\n");
             break;
           case 3:
             display(first);
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printf("-----\n");
break;
case 4:
    if(first!=NULL){
        printf("Stack deleted");
    }

    first = DeleteStack(first);
    printf("-----\n");
    break;

    case 5:
    break;

    default:
    printf("\t\n\nYou have not entered the right choice\n\n");
    }
}while(select!=5);
}
```