IBM19CS002

AAKASH ANAND

LAB - 8

Stack

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

struct Stack {
 int data;
 Struct node *next;
};
Struct stack *top = NULL;

Struct stack *push (struct stack *, int);
Struct stack *display (struct stack *);
Struct stack *pop (struct stack *);
int peek (struct stack *);

int main () {
int val, option;
do { printf ("\n MENU");
 printf ("\n 1. POSH");
 printf ("\n 2. POP");
 printf ("\n3. PEEK");
 printf ("\n 4. DISPLAY");
 printf ("\n 5. EXIT");
 printf ("\n Enter your option");
 Scanf ("%d", & option);

Switch (option) {
```

```
Case 1: printf("Enter the value to be pushed on
 stack");
 Scanf("%d", &val);
 top = push(top, val);
 break;

Case 2:
 top = pop(top);
 break;
Case 3:
 val = peek(top);
 if(val != -1)
printf("\n The value of the top element is %d", val);
 else
 printf("\n STACK IS EMPTY");
break;
 Case 4:
 top = display(top);
 break;
}
while(option != 5);
 return 0;
}
Struct Stack *display(struct stack *top){
 Struct stack *p;
 p = top;
if(top == NULL)
printf("\n STACK IS EMPTY");
else {
 while(p != 0){printf("\n %d", p->data);
 p = p->next; }}
 Return top; }
```

```
struct stack *pop (struct stack * top) {
struct stack *p;
p = top;
if (top == 0)
  { printf (" stack Underflow ");
  else {
   top = top -> next;
  printf ("\n The Value of the item deleted is
    %d", p -> data);
    free (p);
}
return top;
}
```

```
int peek (struct stack *top) {
  if (top == NULL)
     return -1;
  else
  return top -> data;
}
```