```
#include <stdio.h>
#include <stdlib.h>
struct Node
{
int Data;
struct Node *next;
}*top;
void popStack()
{
struct Node *temp, *var=top;
if(var==top)
{
top = top->next;
free(var);
}
else
printf("\nStack Empty");
}
void push(int value)
{
struct Node *temp;
temp=(struct Node *)malloc(sizeof(struct Node));
temp->Data=value;
if (top == NULL)
{
top=temp;
top->next=NULL;
}
else
{
temp->next=top;
top=temp;
}
}
void display()
{
struct Node *var=top;
if(var!=NULL)
{
printf("\nElements are as:\n");
while(var!=NULL)
{
printf("\t%d\n",var->Data);
var=var->next;
}
printf("\n");
}
else
printf("\nStack is Empty");
```

```
}
int main()
{
int i=0;
top=NULL;
clrscr();
printf(" \n1. Push to stack");
printf(" \n2. Pop from Stack");
printf(" \n3. Display data of Stack");
printf(" \n4. Exit\n");
while(1)
{
printf(" \nChoose Option: ");
scanf("%d",&i);
switch(i)
{
case 1:
{
int value;
printf("\nEnter a value to push into Stack: ");
scanf("%d",&value);
push(value);
break;
}
case 2:
{
popStack();
printf("\n The last element is popped");
break;
}
case 3:
{
display();
break;
}
case 4:
{
struct Node *temp;
while(top!=NULL)
{
temp = top->next;
free(top);
top=temp;
}
exit(0);
}
default:
{
printf("\nwrong choice for operation");
}}}}
```

Implementation of Stack using Array

```
#include<stdio.h>
int stack[100],choice,n,top,x,i;
void push(void);
void pop(void);
void display(void);
int main()
{
   top=-1;
   printf("\n Enter the size of STACK[MAX=100]:");
   scanf("%d",&n);
   printf("\n\t STACK OPERATIONS USING ARRAY");
   printf("\n\t--------------------------------");
   printf("\n\t 1.PUSH\n\t 2.POP\n\t 3.DISPLAY\n\t 4.EXIT");
   do
   {
      printf("\n Enter the Choice:");
      scanf("%d",&choice);
      switch(choice)
      {
         case 1:
         {
            push();
            break;
         }
         case 2:
         {
            pop();
            break;
         }
         case 3:
         {
            display();
            break;
         }
         case 4:
         {
            printf("\n\t EXIT POINT ");
            break;
         }
         default:
         {
            printf ("\n\t Please Enter a Valid Choice(1/2/3/4)");
         }

      }
   }
   while(choice!=4);
   return 0;
}
```

```
void push()
{
   if(top>=n-1)
   {
      printf("\n\tSTACK is over flow");

   }
   else
   {
      printf(" Enter a value to be pushed:");
      scanf("%d",&x);
      top++;
      stack[top]=x;
   }
}
void pop()
{
   if(top<=-1)
   {
      printf("\n\t Stack is under flow");
   }
   else
   {
      printf("\n\t The popped elements is %d",stack[top]);
      top--;
   }
}
void display()
{
   if(top>=0)
   {
      printf("\n The elements in STACK \n");
      for(i=top; i>=0; i--)
         printf("\n%d",stack[i]);
      printf("\n Press Next Choice");
   }
   else
   {
      printf("\n The STACK is empty");
   }

}
```