Program 1:

```
#include <stdio.h>
#include <stdlib.h>
#define n 3
int stack[n];
int top=-1;
void push()
{
	if(top>=n)
	{
		printf("Stack overflow.\n");
	}
	else
	{
		int x;
		printf("Enter element to be inserted\n");
		scanf("%d",&x);
		top++;
		stack[top]=x;
	}
}
void pop()
{
	if(top<=-1)
```

```
	{
		printf("Stack underflow.\n");
	}
	else
	{
		int item;
		printf("Enter element to be popped\n");
		scanf("%d",&item);
		printf("Element deleted is %d\n",stack[top]);
		top--;
	}
}
void display()
{
	int i=0;
	printf("Elements in stack are:\n");
	for(i=top;i>=0;i--)
	{
		printf("%d ",stack[i]);
	}
	printf("\n");
}
void main()
{
	int choice;
```

```
  while(choice!=4)
 {
  printf("Enter 1 for push, 2 for pop, 3 for display, 4 to stop.\n");
  scanf("%d",&choice);
  switch(choice){
        case(1):
        {
              push();
              break;
        }
        case(2):
        {
              pop();
              break;
        }
        case(3):
        {
              display();
              break;
        }
  }}
}
```

Output:

C:\Users\bmsce\Desktop\cs235\program-1.exe

```
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
1
Enter element to be inserted
2
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
1
Enter element to be inserted
4
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
1
Enter element to be inserted
6
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
1
Enter element to be inserted
8
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
1
Stack overflow.
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
3
Elements in stack are:
8 6 4 2
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
2
Enter element to be popped
2
Element deleted is 8
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
2
Enter element to be popped
2
Element deleted is 6
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
2
Enter element to be popped
2
Element deleted is 4
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
2
Enter element to be popped
2
Element deleted is 2
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
2
Stack underflow.
Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
3
Elements in stack are:

Enter 1 for push, 2 for pop, 3 for display, 4 to stop.
```