

```
int pop(int a[],int TOP)
{ int ele;
  if(TOP==1)
  { printf("\nStack Underflow");
  }
  else
  { ele=a[TOP];
    TOP--;
    return ele;
  }
}

void display(int a[])
{ printf("The elements are:\n");
  for(int i=0;i<=TOP;i++)
  { printf("%d\n",a[i]);
  }
}

int main()
{ int ch,ele,a[5],n=5;
  do
  { printf("\n1. PUSH\n2. POP\n3. DISPLAY\n4. EXIT\nEnter your choice:\n");
    scanf("%d",&ch);
    switch(ch)
    { case 1 : printf("Enter the element to be pushed: ");
      scanf("%d",&ele);
      push(a,ele,n);
      break;
    }
  } while(ch!=4);
  return 0;
}
```

Enter your choice:
1
Enter the element to be pushed: 4
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
1
Enter the element to be pushed: 5
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
1
Enter the element to be pushed: 6
Stack Overflow
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Element : 5 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2

```
main.c
12 int pop(int a[],int TOP)
13 { int ele;
14   if(TOP==1)
15   { printf("\nStack Underflow");
16   }
17   else
18   { ele=a[TOP];
19     TOP--;
20     return ele;
21   }
22 }
23 void display(int a[])
24 { printf("The elements are:\n");
25   for(int i=0;i<=TOP;i++)
26   { printf("%d\n",a[i]);
27   }
28 }
29 int main()
30 { int ch,ele,a[5],n=5;
31   do
32   { printf("\n1. PUSH\n2. POP\n3. DISPLAY\n4. EXIT\nEnter your choice:\n");
33     scanf("%d",&ch);
34     switch(ch)
35     { case 1 : printf("Enter the element to be pushed: ");
36       scanf("%d",&ele);
37       push(a,ele,n);
38       break;
39     }
40   } while(ch!=4);
41   return 0;
42 }
```

Element : 3 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Element : 2 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Element : 1 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Stack Underflow
Element : 1 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
4

```
main.c
27 { printf("The elements are:\n");
28   for(int i=0;i<=TOP;i++)
29   { printf("%d\n",a[i]);
30   }
31 }
32 int main()
33 { int ch,ele,a[5],n=5;
34   do
35   { printf("\n1. PUSH\n2. POP\n3. DISPLAY\n4. EXIT\nEnter your choice:\n");
36     scanf("%d",&ch);
37     switch(ch)
38     { case 1 : printf("Enter the element to be pushed: ");
39       scanf("%d",&ele);
40       push(a,ele,n);
41       break;
42     }
43     case 2 : ele=pop(a);
44               printf("\nElement : %d is popped off the stack.",
45                 ele);
46               break;
47     case 3 : display(a);
48               break;
49     default : if(ch!=4)
50               printf("Enter valid option.");
51   } while(ch!=4);
52   return 0;
53 }
```

4. EXIT
Enter your choice:
2
Element : 3 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Element : 2 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
2
Element : 1 is popped off the stack.
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
3
Stack Empty
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice:
1